

A case study on social sustainability in the Kyrgyz mining industry

University of Eastern
Finland

Faculty of Social Sciences
and Business Studies

Master's thesis,
Environmental policy

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January 2012

Master's thesis. Environmental policy. University of Eastern Finland. Faculty of Social Sciences and Business Studies. Department of Geographical and Historical Studies. Heidi Tiainen. A case study on social sustainability in the Kyrgyz mining industry. January 2012. 87 pages, 1 attachment (7 pages).

The Kyrgyz mining industry and developments in its sector are examined from the viewpoint of social sustainability. The general history of the mining industry in Kyrgyzstan is outlined together with a description of the socio-political conditions of the country. The social sustainability of mining are examined by dissecting local level social impacts that industrial mining activities have on the case study region of Chatkal. This thesis identifies and outlines the social impacts of mining on a local community and further discusses the sustainability of current mining practices.

The theoretical framework for this qualitative research is drawn from theories and literature on social impact assessment (SIA) and social sustainability. In addition, to examine community-company relationships, literature on corporate social responsibility (CSR) is discussed. The empirical data for the thesis is composed of semi-structured thematic interviews conducted in the Chatkal Valley with multiple stakeholders varying from representatives of mining companies to local residents.

Kyrgyzstan is largely relying on its mining industry to be a major engine for national economic growth. Government policy has therefore been focusing on the creation of a favorable investment-climate, seeking rapid growth for the industry. However, the poor participatory rights allowed to local communities, as well as the unequal distribution of benefits have made contributions to the local economy tangential. This has left the local communities disappointed and increasingly in opposition to the mining industry. In addition, inadequate legislation, poor environmental monitoring, and problems with governance are inducing multiple negative social impacts. In order to enable further growth for the Kyrgyz mining industry and to make it socially more sustainable, these problems should be addressed with dispatch.

Key words: corporate social responsibility, Kyrgyzstan, mining industry, social impact assessment, social impacts, social sustainability.

Ympäristöpolitiikan pro gradu -tutkielma. Itä-Suomen yliopisto. Yhteiskuntatieteiden ja kauppatieteiden tiedekunta. Historia- ja maantieteiden laitos. Heidi Tiainen. Tapaustutkimus Kirgisian kaivosteollisuuden sosiaalisesta kestävydestä. Tammikuu 2012. 87 sivua, 1 liite (7 sivua).

Tutkielma tarkastelee Kirgisian kaivosteollisuuden kehitystä sosiaalisen kestävyuden käsitteen näkökulmasta. Samalla tutkimus esittelee Kirgisian kaivosteollisuuden historian pääpiirteitä sekä kartoittaa maan yhteiskunnallisia olosuhteita. Sosiaalisen kestävyuden ongelmaa lähestytään kaivosteollisuuden aiheuttamien paikallistason sosiaalisten vaikutusten kautta. Tutkimus tunnistaa ja erittelee kaivosteollisuuden sosiaalisia vaikutuksia Chatkalin alueen paikallisyhteisöön, pyrkien kartoittamaan tämänhetkisten kaivosteollisuuden käytäntöjen kestävyyttä.

Tutkielman tutkimusote on kvalitatiivinen ja keskeisimpänä teoreettisena viitekehystenä toimii sosiaalisten vaikutusten arvioinnin sekä sosiaalisen kestävyuden teoriakirjallisuus. Lisäksi yritysten yhteiskuntavastuun teoriaa hyödynnetään paikallisyhteisön ja yritysten välisten suhteiden tarkastelussa. Tutkimuksen empiirinen aineisto koostuu puolistrukturoiduista teemahaastatteluista, jotka toteutettiin Chatkalin alueen kaivosyhtiöiden, paikallisyhteisöjen ja paikallishallinnon edustajien kanssa.

Kirgisian talouskasvu nojaa nykyisellään pitkälti maan kaivosteollisuuteen. Kirgisian hallitus on pyrkinyt edistämään kaivossektorin nopeaa kasvua luomalla suotuisat olosuhteet sijoittajille, mutta paikallisyhteisöjen puutteellisten osallistumis- ja vaikuttamismahdollisuuksien vuoksi kaivosteollisuuden kasvun positiiviset vaikutukset paikallistalouteen ovat jääneet heikoiksi, tehden kaivosteollisuuden paikallisesta vastustuksesta yhä yleisempää. Ongelmien taustalla vaikuttavat vahvasti myös maan vanhentunut lainsäädäntö, ympäristövalvonnan heikko taso sekä hallinnolliset ongelmat, jotka yhdessä lisäävät kaivosteollisuuden negatiivisia sosiaalisia vaikutuksia. Kaiken kaikkiaan kaivossektorin sosiaaliin vaikutuksiin tulee kiinnittää nykyistä enemmän huomiota Kirgisian kaivosteollisuuden kasvun jatkumisen mahdollistamiseksi ja sen sosiaalisen kestävyuden parantamiseksi.

Avainsanat: kaivosteollisuus, Kirgisia, sosiaalinen kestävyys, sosiaaliset vaikutukset, sosiaalisten vaikutusten arviointi, yritysten yhteiskuntavastuu

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List of abbreviations

| | |
|------|---|
| CIS | Commonwealth of Independent States |
| CSR | Corporate Social Responsibility |
| EIA | Environmental Impact Assessment |
| EITI | Extractive Industries Transparency Initiative |
| GDP | Gross Domestic Product |
| IAIA | International Association for Impact Assessment |
| IIED | International Institute for Environment and Development |
| IMU | Islamic Movement of Uzbekistan |
| KGS | Kyrgyzstani Som |
| MMSD | Mining, Minerals and Sustainable Development |
| NGO | Non-Governmental Organization |
| OSCE | Organization for Security and Co-operation in Europe |
| SDNA | Social Development Needs Analysis |
| SEA | Strategic Environmental Assessment |
| SIA | Social Impact Assessment |
| UNDP | United Nations Development Programme |
| UNEP | United Nations Environment Programme |
| USD | United States Dollar |

1 Introduction

1.1 Background

Exploitation and use of natural resources is the basis of modern societies and economies (Breaking New Ground 2002, xiv). Today, with decreasing natural resources and ever increasing consumption, these resources play a significant role not only in economics, but also in world politics, as global power relations are increasingly influenced by the ownership of key resources (Dalby 2002, xix). Consequently, natural resources management has become an integral part of state functions, and it appears to be especially vital for countries that rely economically on their raw material sector. However, this management is vital not only for economic success, but also to find environmentally and socially sustainable practices (Breaking New Ground 2002, xvi).

In recent years, social sustainability has been more strongly linked with overall sustainability (Colantonio 2009, 2). At the same time, the mining industry has been experiencing a worldwide boom and its management has been in need of a more comprehensive approach, as the industry is facing manifold demands from various actors (Breaking New Ground 2002, xiv). The relationship between local communities and the mining industry has been attracting growing attention and research on the topic has been expanding (Sairinen 2011, 139). This industry has the potential to foster considerable economic growth both nationally and locally, and typically the sector has a strong presence in remote regions, where it is also a significant employer. Nevertheless, mining can induce multiple environmental, political, and social problems that can only be prevented through cooperation and commitment to sustainable practice. (Esteves & Vanclay 2009, 138–139). However, even more important for successful and sustainable mining, is the social license to operate (see section 2.2.4) that can only be achieved through a local communities' trust (Joyce & Thomson 2000).

Social sustainability (see section 2.1.2) and social impact assessment (SIA) provide tools for approaching the social dimension of mining. Taking a social sustainability perspective of the issue allows for an exploration of the impacts of mining on nature, society, and work, since this view acts as a mediator between nature and society, combining them together and emphasizing the three dimensions as a whole (Littig & Grießler 2005, 73). Social impact assessment is a more practical tool for mapping and dissecting impacts on different spheres of life (International Association for Impact Assessment 2003). Although the social dimension of mining has been widely researched in recent years, it seems that the social impacts of the mining in transition countries are left aside, since much of the current research focuses either on issues of developing countries in Africa or on countries pioneering the use of SIA in this field, such as Australia. Though, with the current increasingly high world prices of minerals, the mining sector has become a potential source of economic growth, making many transition

countries interested in mining, therefore, more research on the contemporary developments and social impacts of mining in these countries is needed.

With its considerable mineral resources, Central Asia draws significant international interest (Ministry for Foreign Affairs of Finland 2009, 10). The unstable political and security situation of many Central Asian countries (ibid) makes the region a topical research case. Many of the countries are seeking economic growth through the development of their raw-material sectors, but they are also experiencing problems with respect to their environment, civil society, and administrative framework (ibid., 10–11). Overall, their transitions from centrally-planned to free-market economies have required and continue to require various structural changes, with the mining industry not providing an easy setting for change (Clark & Cook Clark 1999, 192).

The Kyrgyz Republic is one of the countries seeking re-development of its mining industry (Country Development Strategy 2009, 50). This country is one of the poorest in Central Asia (Ministry of Foreign... 2009, 11) and after being commonly labeled the “Central Asian island of democracy” in the 1990s, has come into the 21st century suffering from fierce political turmoil.

“Mining industry is currently a basis of industrial production of Kyrgyzstan. Based on data of the State Agency for Geology, in 2007 the production output of the sector made 22,6 million Som or 40% of value of all industrial output. It accounts for 9,2% of GDP, 40,1% of total exports by volume, and 9% of tax revenues.” (Country Development Strategy 2009, 50).

Kyrgyzstan is a young country, with long histories of Soviet rule and mining. In the last few years, the country’s mining industry has been strongly developed. It is considered the most important industry in Kyrgyzstan, with a good potential for growth (Country Development Strategy 2009, 50). Nevertheless, there are many challenges to overcome. In recent years, Kyrgyzstan has been struggling with an unstable political situation, underdeveloped state institutions, and a frustrated civil society. The operational environment is poorly developed; the Government is looking to mend operational preconditions through improvements to legislation (ibid., 53). Some reforms have been carried out, but the turbulence in domestic policy has hampered the establishment and implementation of administrative changes. International investors have expressed interest in Kyrgyzstan, but socio-political issues continue to limit the attractiveness of the Kyrgyz mining sector (Tynan 2011).

The social aspects of mining require more attention, as local resistance to mining has recently increased to a higher level. The situation is affected by several factors; Kyrgyz mining regulation does not require mining companies to conduct SIA (Honkonen 2011), the country’s civil society is still developing (Paasiaro 2009, 65), the interests of local communities are bypassed by companies, and participatory rights with regard to mining are very limited.

It has been professed that business can encourage further development in well-functioning societies (Bigg & Ward 2007, 4), and that a strong civil society with social ingenuity and social capital is a prerequisite for environmental and regional security (Contreras 2004, 179). Pertaining to its mining industry, Kyrgyzstan has been experiencing a situation where poor governance together with a strong emphasis on economic growth has led to social problems, conflicts, and dissatisfaction among its citizens. Correspondingly, from the perspective of social sustainability the situation is difficult; though rapid development and new directions are needed, hasty decisions can lead to more problems in the long term. All in all, the environmental and political, as well as cultural impacts of the mining industry in Kyrgyzstan can in many respects be connected with the country's wider transition towards liberalism. Because of its previously outlined situation, Kyrgyzstan provides an interesting setting for studying the social impacts and sustainability of the mining industry and reflecting them onto the general development of the surrounding society.

1.2 Research-questions

In this thesis, the following questions are examined;

- What types of local level social impacts does the mining industry have in Chatkal Valley, Kyrgyzstan?
- How does the Kyrgyz mining industry contribute to social sustainability?

These are the main research questions of this thesis and are studied through a case study of Chatkal. Social impacts on local communities are examined from different dimensions, such as employment, the local economy, the environment, and company-community relationships. Discussion is made of current mining practices and the operational conditions of the mining industry, as well as the social sustainability of mining in Kyrgyzstan. In addition, the general development of the mining industry is outlined, beginning at the late Soviet period and concluding it on the latest advancements. This period sheds light on the importance of the mining industry to the Kyrgyz economy, describing political and administrative changes concerning the industry and identifying central problems of governance. A short description of Kyrgyz civil society is also made, together with some contemplation on the role of the development of civil society in current mining issues. Overall, the research examines the mining industry in Kyrgyzstan, emphasizing the social dimension of this industry.

The thesis was conducted as part of the project "Environmental Security, Mining and Good Governance", which belongs to the Security and Development research-series of the Ministry for Foreign Affairs of Finland 2010. The project personnel, to whom I am greatly thankful for

much advice and ideas include: Rauno Sairinen, Tuula Honkonen, Paula Tommila, Pasi Rinne, Mikko Halonen, Johan Lunabba, Viktor Novikov, and Otto Simonett.

2 Kyrgyzstan

2.1 An overview

2.1.1 General information

Kyrgyzstan is a small and mountainous country in Central Asia (see Figure 1 on Page 5). In 2011, the Kyrgyz population was estimated to be 5.6 million (CIA Factbook 2011). The majority of the population is Muslim, the biggest ethnic groups being Kyrgyz and Uzbeks. The official languages are Kyrgyz and Russian (ibid.).

Kyrgyzstan is a republic, with Bishkek being the capital. The country is divided into seven (7) administrative divisions: Talas Oblasty, Batken Oblasty, Bishkek Shaary, Chuy Oblasty (Bishkek), Naryn Oblasty, Jalal-Abad Oblasty, Osh Oblasty and Ysyk-Kol Oblasty (Karakol) (ibid.).

More than ninety (90) percent of the country is at over a thousand (1000) meters above sea level. This reflects in the natural environment of Kyrgyzstan; the country has multiple high-altitude lakes and glaciers, (ibid.) but in 2007, only 4.6 per cent of the land area was forest (Kyrgyzstan in Figures 2010). Agriculture is the dominant livelihood in the country, with some main agricultural products being wool, cotton, and tobacco (CIA Factbook 2011). Kyrgyzstan is a poor country, in 2010, the gross domestic product (GDP) –per capita was around United States Dollars (USD) 2200. The gold mining sector holds great importance for the economy (ibid.).

Figure 1: Kyrgyzstan



Map produced by Zoï Environment Network 2011.

2.1.2 Political situation

Kyrgyzstan has experienced two political revolutions in the past 7 years: the first in March 2005 and the second in April 2010. Both led to the ousting of the contemporary president, with Askar Akaev and Kurmanbek Bakiyev respectively being removed from power (Alymbaeva 2011, 14). As background to the April 2010 uprising in Bishkek, there was a growing concentration of power in the Bakiyev Family, this aggravated the clans in Northern Kyrgyzstan, in addition economic conditions in the country had been worsening and led to hatred for the Bakiyev Regime (Chaterian 2010, 21). The protesting that lead to the conflicts has also been explained by a general frustration caused not only by the weakened socio-economic situation of the country, but also a massive internal migration (Alymbaeva 2011, 14). During the riots of 2005 and April 2010, groups composed of non-government organizations (NGO) and opposition parties accused the presidents and their circles of acquaintances of nepotism, illegal privatization of national businesses, and infringement on political and human rights (ibid.).

The situation in Kyrgyzstan, previously considered the democratic island of Central Asia, was not improved after the overthrow of Bakiyev, but rather, became increasingly tense. The April riots were followed by violent ethnic clashes a few months later, forcing a reevaluation of the democratic status of Kyrgyzstan (Cheterian 2010, 21). The June conflict was unique, shaking the security and stability of Kyrgyzstan even more; such violence had not been experienced in

Kyrgyzstan after the Soviet era. The severity of the situation was reflected by the number of displaced people. Because of the inter-ethnic clash, it has been claimed that 400,000 people were displaced, of which 80,000 fled to Uzbekistan (ibid.).

Although the authorities of Kyrgyzstan argued that the June 2010 conflict was organized by the Islamic Movement of Uzbekistan (IMU) and remnants of the old Bakiyev Regime (Cheterian 2010, 24), tension between Uzbek and Kyrgyz people was a major reason for the problems coming to a head. The Uzbek minority in Kyrgyzstan suffered discrimination under Bakiyev. There has been continual migration of ethnic Kyrgyz from mountain villages to the cities since the 1990s, this migration escalated the struggle over land, water, jobs, and other resources with Uzbeks who inhabited the rural areas of the Ferghana Valley and dominated the bazaars of the main trading cities. Uzbek leaders were also pushing for recognition of Uzbek as an official language in Kyrgyzstan, annoying the ethnic Kyrgyz. Although ethnicity was involved, it was political instability accompanied by a breakdown of social order that culminated in the pogroms of Uzbeks on June 10th, transforming the former atmosphere of decades of coexistence into a charged situation causing instability in the whole country (Chaterian 2010, 22). Causes leading to the June conflicts are controversial, as many researchers have proposed socio-economic explanations, but the Kyrgyz authorities have continuously accused Uzbeks of causing the events. The discussion came up again in January 2011, as the national commission finished the report on the causes of the June conflicts, labeling the Uzbek community leaders responsible for the violence (Osmonov 2011). The official outcome of the commission report raised dissent within the Kyrgyz parliament and the conclusions were questioned. The discussion remains open, since there are two more commissions investigating the conflict (ibid.), but the issue is likely to raise emotions and heated discussion due to the sensitivity of the topic and the current political instability of the country.

On the whole, the emergence of nationalism, violent conflicts, and internal confusion can have wide affects on the development of Kyrgyz economy. As the Government is hoping for massive growth of the private mining sector, attracting foreign investors is vital. Unstable political conditions create many uncertainties that do not recruit investors. The capacity of the government is not enough to steady the fluid situation that exists while at the same time conducting extensive development of the administrative framework and governance. Thus, priorities necessitate clarity, and expectations towards any mining development need to be realistic and moderate.

2.1.3 Kyrgyz civil society

Kyrgyz civil society is still developing, with constant political instability making progress difficult; this can be seen from global freedom evaluations. According to the Freedom House (2010) rating, Kyrgyzstan's political rights and civil liberties decreased in 2010 because of a concentration of power and faulty presidential elections. The interim leader of Kyrgyzstan after the April revolution, Roza Otunbaeva, was elected to the presidency in 2010 to normalize the political situation and restore the faith of the citizens in state management. Her period of ascendancy as President soon came to an end, as new presidential elections were held in October 2011.

Before the 2011 presidential elections, the first candidate for the position was considered to be Felix Kulov, the leader of the Ar-Namys Party. Competing with him was Kamchibek Tashiev, the co-leader of the Ata-Jurt Party. Tashiev was thought to be likely to propose a more powerful position for president, and promote that control of security issues and international relations be attached to the president's sphere of responsibilities. The elections were likely to replicate patterns of previous elections in Kyrgyzstan, with public interests to be overshadowed by personal interests (Alymbaeva 2011, 15). The problem with Kyrgyz institutions has been that they are not so much controlled by the civil society, but by the elite, which prevents them from developing into civil society: this has been reflected in the elections, with personality being a key factor in the political space (ibid.).

The presidential elections of October 2011 raised controversy among the international community, as the integrity of the elections was questioned (OSCE 2011). Prime Minister Almazbek Atambajev was declared the new president (BBC 2011). The number of registered voters was estimated at 3 million, with the population being around 5.6 million (CEPPS 2011). The presidential elections were considered to hold special importance for the future, since domestic policy has been somewhat confused (OSCE 2011). Although the presidential elections were considered important, Prime Minister Omurbek Babanov, who was elected in December 2011 (UPI 2011), holds even greater power with respect to future development and stabilizing the overall socio-political atmosphere, than President Atambajev (Fiacconi 2011).

The political turmoil of recent years impacted on the economic and social sphere of Kyrgyzstan. The winter of 2010-2011 in Kyrgyzstan was rough, characterized by violence in the North and increased ethnic tension in the South (Bannier 2011). Kyrgyzstan did not have the capacity to address the new, problematic situation, where terrorist groups were also increasingly threatening the security of the country. The Government was unable to rule, especially the southern part of the country where authorities lacked resources to control the riots. Furthermore, border disputes with Tajikistan have led to an uncertainty in cooperation between the countries. The circumstances were described as being especially difficult in the

North, as there was increasing pressure for economic growth in the South to stop the situation from developing to a severe economic crisis (ibid.).

The incidents in the summer of 2010 caused destruction of infrastructure; lack of trust in the private sector; and were predicted to have a negative impact on the investment, trade, security, and the overall fragility of the economy. The events also had an impact on the general social atmosphere of the country, increasing social tensions, creating new social problems, and resulting in the displacement of about 75,000 people, who lost their homes and livelihoods. After the conflicts, the general social atmosphere of the country remained unstable and insecure (World Bank 2010.), social safety net services in Kyrgyzstan are still impaired, with poverty and unemployment increasing thus further frustrating the Kyrgyz people (Alymbaeva 2011, 14).

The development of political rights and civil liberties has not been up to par in the last years, but from a wider perspective, civil society in Kyrgyzstan has strengthened after the collapse of Soviet Union; professional NGOs and activists are emerging and developing the country's civil society (Paasiaro 2009, 65). It has been professed that the existence of international actors in Kyrgyzstan has enabled a civil society with new opportunities for individuals to express their political and social opinions, and advocate them in the public arena through NGOs, but the realization of citizen empowerment in Kyrgyz society is not foreseeable and has failed to introduce grassroots interest at higher levels of decision-making. (ibid., 59). The dependence of Kyrgyz NGOs on donors makes their viability and agenda questionable, thus there is criticism about the possibility of achieving citizen empowerment through the current system (ibid.). The progression of civil society has been said to have shaped the NGO sector less towards ordinary citizens and their empowerment, thus this sector is less capable of building a bridge between citizens and state (ibid., 62).

With respect to the mining industry, NGO's have not played a significant role in Kyrgyzstan. Their presence on the local level is quite minor, where they have acted as mediators in disputes between local communities and mining companies only in certain locations. It has been noted that changing political atmospheres can often create new opportunities for action in the civil society (Paasiaro 2009, 65). The local NGOs have not taken an active role in working out the social problems associated with the mining industry; instead it is the local citizens who have taken up the task of pushing for a more equal distribution of the benefits of mining. In general, Kyrgyz civil society has recently taken a more active role with respect to the minerals industry of the country, but the opportunities for local communities to influence the future development of the industry in general, remain weak. Public participation in the mining-related licensing procedure is not defined in the Law on Subsoil (Honkonen 2011a). There are recommendations for increasing openness, but the mining permit process has not been open to direct participation by civil society. Nonetheless, there are signs of

improvement, since participation by civil society in the licensing commission has been allowed and an advisory board has been established. Unfortunately, these improvements are sometimes more visible on paper than in reality. The Ministry of Natural Resources has held the ultimate power for making decisions about licensing (currently the responsible agency is the State Agency for Subsoil and Mineral Resources), (ibid.) with local communities having very limited ways of influencing this procedure. Locals often feel that they are not being heard in the decision-making process, and the frustration contributes to public opposition, which is directed towards individual companies and mining operations, usually those located near the communities. The situation is problematic, as at the moment, the most powerful way for the locals to have their voice heard or to bring unwanted mining activities to a stop is through public demonstrations, general resistance, and in the most heated situations, road blocks or other forms of direct action.

2.2 The Kyrgyz economy and the role of the mining industry

2.2.1 Building the economy after Soviet collapse

Before gaining independence, Kyrgyzstan was part of the Soviet Union with all political and economic decisions influencing the country coming from Moscow. Local initiatives were not allowed in Soviet centralism, which kept the republics from improving their economic situation. (Bogdetsky, Stavinskiy, Shukurov & Suyunbaev 2001, 16) In 1991, Kyrgyzstan became independent, and the constitution of the country was based on promoting a revival of the Kyrgyz nation, the principle of democracy, and protecting the interests of different ethnic groups. Kyrgyzstan quickly built bridges with worldwide international organizations so that in 1992 it became a member of the United Nations, and later other international organizations, like Organization for Security and Co-operation in Europe (OSCE) and Commonwealth of Independent States (CIS), also accepted it for membership. It is also involved with Asian regional organizations such as the Shanghai Cooperation Organisation and the Asian Development Bank, in this respect, Kyrgyzstan has been characterised as being integrated into both Europe and Asia (Bogdetsky et al. 2001, 17).

Kyrgyzstan can be considered a typical post-Soviet country since it quickly sought integration into world markets and adaption of a market-economy, while strengthening democratic reforms and increasing socio-economic welfare. Similar efforts at transformation to liberal markets have been experienced by most of the former republics. As a result of Kyrgyzstan's aims for a liberal market, privatisation of state enterprises has played out in the country since 1993. The peculiarity of the privatisation process was that the mining sector was nearly barred from the process (Bogdetsky et al. 2001, 17). On a larger scale, this is not exceptional and similarities can be found for example with the oil and gas sector of Russia. In general, national policies have typically treated mining industries differently; this is also true of other

industries of strategic importance. A protectionist approach was applied to those industries with significant importance to the economic situation of the country, or the country's position in international politics (World Bank & International Finance Corporation 2002, 2).

A price liberalization was conducted in 1992 and a year later Kyrgyzstan adopted its national currency the Kyrgyzstani Som (KGS). The National Bank managed to stabilise the national currency by adopting a policy of currency rate control, backed by accumulation of hard currency and gold reserves, thus Kyrgyzstan has been a member of the World Trade Organization (WTO) since 1998. Power structures needed to be reformed after independence, and in 1996 decentralization occurred, which meant making villages, towns, and urban centres self-governing, and the establishment of new land ownership-rights began. During the Soviet era, all land was owned by the state. After independence, re-distribution of land has been slowly conducted in conjunction with agrarian reform. Since 1996, the Constitution has allowed many types of ownership, including communal, state, and private. The 1999 amendment (July 21, 1999) to the 'Subsoil law' made private ownership of small deposits of common minerals on private allotments legal (Bogdetsky et al. 2001, 17). In spite of the efforts and reforms since gaining independence, the country has faced many difficulties and the economic performance has not met expectations. Increased tension between the former Soviet republics worsened Kyrgyzstan's economic situation with the decline in economic development and production leading to severe problems, already in 1991, 500,000 people had emigrated from the country (Bogdetsky et al. 2001, 17–18).

During the Soviet period, a considerable part of Kyrgyzstan's industry was grounded in military production. The agrarian-industrial structure of production originating from the Soviet era persisted after independence. Reliable statistics for the Kyrgyz economy during the Soviet period are hard to find because of the complex relationship between the defence industry and the mining industry, but machine construction, metal working, light industry, and food production are listed as the most significant industries (*ibid.*, 19). After the collapse of the Soviet Union, the military purchase orders, direct central subsidies, and supplies of materials stopped, thus aggravating the situation of the former republics (*ibid.*, 19-20). The country was forced to depend on external holdings, since between 1990 and 1995 the GDP of Kyrgyzstan fell by 50%. During the same five-year period, industrial production decreased by 65% and the capital investments by 66%. Although, according to macro-economic indicators, the situation improved after the mid 1990s, since between 1996 and 2000 the average economic growth rate has been 5.5% per year. Yet at the beginning of the 21st century, the overall economic situation of Kyrgyzstan remained unstable and the country had vast amounts of external debt. In 2001, the national debt was already USD 1.4 billion (Bogdetsky et al. *ibid.*, 20-21). There has not been any improvement in the situation in recent years, as in 2009 the debt reached USD 2.9 billion (World Bank 2011a).

The economic situation of the early 21st century is reflected also in social indicators like unemployment and poverty rates. In 2001, as much as 76% of the population lived below the poverty line. Kyrgyzstan's situation is partly explained by its poor external trade relations, which are reflected in its low export shares (Bogdetsky et al. 2001, 21). Despite the difficult years at the beginning of the 21st century, poverty in Kyrgyzstan has decreased, in 2005, only 43.1% of the population lived below the poverty line. The income level in the country remains low (World Bank 2011b), and the annual growth of the GDP has been declining from a high of 8.5% in 2007 to -1.4% in 2010 (World Bank 2011c). Taking into consideration the rocky road of the Kyrgyz economy during the early 21st century, it is clear that much remains to be done before this economy can be considered stable.

2.2.2 Towards free market relations

Kyrgyzstan recognized the potential of its mining industry and in recent years has started to develop its operational environment. To increase income from mining, Kyrgyzstan has sought to create favorable conditions for the industry, the focus being on attracting foreign investments (Country development strategy 52-53). Lack of capital investment to this day has been explained by shortcomings in legislation (Bogdetsky, Ibraev & Abdyrakhmanova 2005, 6) and through administrative improvements the Government is looking to develop the operational preconditions for the mining industry (Country development strategy, 53). However, corruption remains a problem. After the 2005 revolution, the licensing processes have become more transparent (Zozylynsky 2007) and in recent years there have been changes to several spheres of the state regulation system (Madykov 2010). The development of a more honest mining industry is in progress (ibid.), but there are still many obstacles to be overcome, especially concerning the implementation of administrative changes.

During the last decade, Kyrgyzstan has had trouble implementing large-scale mining projects due to financial difficulties. These projects are capital-intensive, characterised by long-term loans, and the profitability of the projects are uncertain because of unpredictable world mineral prices and growing costs of labour and electricity among others. The goal to develop the mining industry and to integrate it into the global economy was set in the Country Development Strategy. Improving legislation and state regulation were stated to be vital tasks, in order to achieve this goal, since the regulatory framework for subsurface use was found to be complicated and imperfect. One of the general problems of the legislation has been broad state intervention, which gave immoderate power to officials that decreased the profitability of the sector for foreign investors. The problems with the operational conditions in the mining sector are further related to a lack of financial and technical capacity, as most of the geological data is not in a digital format. There is no single agency holding with all the

infrastructure maps, they are dispersed over various agencies, this makes them difficult to access. Poor operational conditions are not only affecting cooperation between companies and the state, but also deteriorate the relationship between communities and companies, since there is no adequate mechanism for companies to take into consideration the needs of local communities (Country Development Strategy 2009-2011, 52–53).

Acknowledging the existing problems of the mining industry, the priorities for future development included the creation of a favourable environment and strengthening private investment in the industry. Additional objectives stated include the creation of jobs, development of new mineral deposits, improvement of working conditions for the industry's workers, and establishing incentives to encourage the introduction of modern technology and to prevent wasteful mining methods. Mainly through better employment rate, the set goals were trusted to also promote well-being and prevent in-migration. The government has sought to liberalize the mining industry and launch criteria with clear, detailed, and formatted norms that are based on a market-based approach instead of relying control solely from state administration (ibid.).

At the end of the first decade of the 21st century, the future of private investments in the mining sector seemed optimistic. In 2007 the amount of private investments in exploration work had doubled in comparison with 2005 (ibid., 51), so further growth was expected. However, even with previous growth rates in mind, the expectations of the private sector development of the Kyrgyz mining sector were significant, to say the least, this is clear from the following notation in the Country Development Strategy (2009, 53): “*The Government entrust completely the private sector with a mission of the mining industry development*”. Although it was stated that legal reform was vital to improve the operational conditions for mining, the financial risks were to shift to private investors (ibid., 53). Privatization is a part of the transformation to a liberal market economy, but expectations for foreign investors might be unrealistic. There is no guarantee that the gained profits of the industry will, directly or indirectly benefit Kyrgyz citizens or lead up to any acceleration in the development of the country. Furthermore, the government had been subsidising state-owned companies while at the same time acting as a regulator of the mining industry (ibid., 52). In addition, administrative control over the mining industry has been extensive with government being a key player in the industry. This situation has not been seen as unbiased, thus it has require a change, but as the economy of Kyrgyzstan leans heavily on the mining industry, a total change of cannot be expected to happen overnight and without risks.

The Country Development Strategy covers technical details and specifies priorities, goals, and tasks for industry development quite well. A problem with the Strategy is that it focuses on legal and regulatory changes to ensure an attractive environment for investors and mining companies. It has given very limited attention to the social and environmental aspects of the

industry. One of the starting-points of the Strategy is that development of the mining industry contributes to the prosperity of the whole country, thus, the negative side-effects are not covered in the Strategy. There are only a few suggestions for reforms with respect to local communities and social issues and those cited are subordinate to the economic aspects. Introduction of a progressive payment for holding a license, and in that way directing royalty proceeds to local communities (ibid., 53), is the only proposed measure to try to secure the rights and interests of local communities. The social and security aspects are limited to improving the working conditions of the miners. Environmental issues are bypassed with a notation to bring mining companies to account for the reclamation of mining sites (ibid.). Altogether, local communities are not fully acknowledged as stakeholders and their impact on the development of the mining sector in Kyrgyzstan is trivialised.

The transformation of operational conditions today raises many questions, though it appears that the Country Development Strategy is a proponent of the process. The Strategy concluded that the shift from administrative and legal management to civil regulation has to be gradual (ibid., 53), but possible difficulties with the process were not discussed. Instead, the strategy seemed to rely on the success of the proposed policy measures, despite the weaknesses of state institutions. These weak institutions are a risky factor, since they are the principal connection to social issues. The market economy approach is more likely to ensure the most financially beneficial outcome than to integrate social and ecological costs into the operating costs of the mining sector. Relying on the private sector to account for the social issues is an unsure road to choose, since corporate social responsibility has been found to work best in countries where the civil society, governance capacity and institutions are strong and well developed (Bigg & Ward 2007, 4).

Kyrgyzstan is still struggling with its development of state institutions, while public governance can be considered as being quite poor. Additionally, the political situation of has been unstable for the past decade, including political revolutions together with a general tense national atmosphere, which has caused concern among foreign investors. The ambitious goals of the Kyrgyz government to rapidly reform the operational conditions for the mining industry to catalyze the construction of a strong and dynamic sector may be unattainable until the public sector is better developed. It has been professed that weak public governance can handicap the realization of even the most well-thought business programs (ibid.). Likewise, business can further improve the conditions of a well-developed state, but a weak state cannot rely solely on business to take on the basic responsibilities of government (ibid.). Today, the growth of the Kyrgyz mining industry is hampered by not only by poor operational conditions, but by many social problems. The Kyrgyz people are frustrated with the government and seek to increase their influence by direct action. In many areas, local people would prefer state-owned mining companies over foreign companies, but the Government plan to increase private sector involvement is aimed in the opposite direction. This situation

has led to tension and increased local resistance, especially towards foreign companies. In the 2010s, the objectives of the Country Development Strategy seem to be unobtainable, while and integration of Kyrgyzstan into the world economy, as well as successfully carrying out the application of free market principles to the mining industries are still in progress.

2.2.3 Mining in the Soviet era

Mining has long traditions in Kyrgyzstan, with artisanal gold mining has been practiced in the country since ancient times, (Appel, Dyikanova, Esengulova & Tagaeva 2004, 4) and it is still providing a livelihood for many in the rural areas. Industrial mining has also has played an important role in Kyrgyzstan's development throughout the country's history. Small-scale mining of lead, mercury, coal, blue stone, antimony, oil, and ozokerite has occurred in Southern Kyrgyzstan during the 20th century (Bogdetsky et al. 2001, 23) with the roots of industrial mining dating back to the beginning of the 20th century (Zozulinsky 2007, 1). In this beginning, the primary products were coal, oil, lead, mercury and copper. Kyrgyzstan also was a notable contributor to the Soviet Union's production of uranium and mercury. At its peak, over 60 thousand people were involved in the mining industry in Kyrgyzstan (ibid.). The production of antimony was also extensive during the Soviet era, with some 17,608 tons of antimony produced in the country in 1990, making Kyrgyzstan the world's third largest producer at the time.

The resource-base of many primary raw materials were nearly exhausted in the 1980s, forcing the country to start processing imported concentrates from Tajikistan and the Russian Federation (Bogdetsky et al. 2001, 24), this describes well the intensity of the Soviet mining industry. Mainly due to intensive coal mining, the minerals sector grew rapidly during the late 1980s and mining towns were grew around the country (ibid., 56). The mining industry contributed to the development of infrastructure and social services for the rural areas, while other industries were becoming stronger than before. Since there was now more purchasing power in the villages, small service enterprises developed including those that supported the larger industries, such as sewing and printing. The local population's possibilities for education and health-care were improved due to the growth of the mining industry, with cultural services like theaters and clubs also sprouting (ibid., 56–57.). Overall, in the 1980s the minerals industry in the country was blooming, and because of a number of notable investments, from 1987 onwards the industry was growing faster than the economy as a whole. By the end of the decade, Kyrgyzstan was a significant producer of minerals in the Soviet Union; it was the only producer of antimony and produced over 64% of the total mercury and 15% of the total uranium for the Soviets. This was despite the fact that all deposits in Kyrgyzstan were not exploited because similar mineral reserves were found in other regions of the Soviet Union (Bogdetsky et al. 2001, 27–28).

The collapse of the Soviet Union caused dramatic changes for the mining sector of Kyrgyzstan, with the operational conditions going through a significant transformation (ibid., 40). Mining towns suffered from the removal of demand and supply, with only a few managing to maintain their operations (OSCE-UNDP-UNEP-NATO 2005, 29). The state-run mining industry was almost shut down because of the outdated technologies, lack of management-skills, and social stabilization of the country; the economy was in crisis (CEE 2002, 15-17). Taxation and the administrative system with its high custom fees and royalties impeded development of the mining industry. Many raw materials that had been traditionally sourced from other regions to be processed in Kyrgyz facilities were now outside the borders of the country and had to be imported. Former supply channels and industrial ties disappeared or ended, while transportation costs grew, as did the price of fuel and electricity. The breakup of supply channels and industrial ties forced mining companies to adapt to the new situation where all outputs of production were to be exported and the companies were suddenly responsible for making all arrangements related to the sale and purchase of materials. Previously, the industry had relied on Soviet assistance for practical arrangements. Most of the companies faced an absence of support and especially of experience with respect to organizing many practical arrangements of their business, which made it difficult to survive. As a result, most subsidised plants went bankrupt soon after independence, because of the loss of financial support (ibid., 40). The only bright spot for the minerals industry at the time was the gold sector. After the collapse of the Soviet Union, gold became the most important product of the minerals sector. Recovery required going through some massive changes, but the sector proved it had the necessary adaptability to survive in the new circumstances. Foreign investors came after 1993, while up to the mid-90s; gold mines were the only enterprises capable of maintaining their activities without turning into joint-stock companies (Bogdetsky et al. 2001, 27).

The decline in the Kyrgyz mining sector after the Soviet collapse has been described as being linked to the transition from a centrally-planned system to a market-economy (ibid., 39). In the Soviet era, the operations of the mining sector were quite different than after independence. Before 1991, a distributive system made the demand from markets nearly inconsequential, since the control of the supply of all equipment and materials was centralised. The purchase prices for finished commodities, raw materials, and services were fixed, while funding to maintain the raw material base came from the state budget. The centralised system described controlled and supported the minerals industry of the Kyrgyz Republic during the Soviet era (ibid., 40). After the collapse of the Soviet Union, these controls and support were withdrawn leaving weak and undeveloped state institutions with an inadequate administrative system. This new situation was a challenging combination of a lack of support and direction for the young country's mining industry.

2.2.4 The new growth of the mining industry

After gaining independence, Kyrgyzstan had great difficulties with its economic development, or to be more precise, the difficulties were due to the establishment of an independent economy. The loss of support from the former Soviet Union left Kyrgyzstan to deal with an entirely new situation. Since Kyrgyzstan had no governance, contacts, or financing of its own, the industrial production of the country crashed quickly, leading to social and economic recession. This was particularly the case in the regions where the mining industry had been an important part of the economy. With massive external debts and a poor economic situation, Kyrgyzstan turned to foreign investors for help in re-developing the mining industry (Bogdetsky et al. 2001, 4), because the country's abundant natural resources were seen to offer a way to create economic growth (CEE 2002, 15–17).

A few years after the crisis, mining again became an important industry, as foreign investments flowed into the Kyrgyz gold-mining industry. The number of registered mining companies increased at the beginning of the 21st century, but at the same time the number of working companies decreased. Though, the minerals industry again had become a significant part of the Kyrgyz economy, this time the major contributor of this development was the gold-sector. Industrial gold production first started in Kyrgyzstan in 1986 under the enterprise KyrgyzAltyn (Zozulinsky 2007). Today, the primary attraction of foreign investors is still gold, even though Kyrgyzstan has considerable mineral resources of coal and iron among others. (Bogdetsky et al. 2005, 6–8). The gold sector of the country is dominated by the Kumtor Gold Company, but there are smaller enterprises involved in the minerals industry as well (Bogdetsky et al. 2001, 80–81). In recent years, it seems that the number of foreign companies in the country has increased. Larger companies are concentrated on gold, while smaller enterprises are producing industrial building materials, gas, coal, and tin among others. Small companies are often able to utilize the existing infrastructure (ibid.), which helps them to survive and improves their operational conditions. In addition to the growing industrial mining sector, artisanal gold mining was quite extensively practiced in Kyrgyzstan at the beginning of the 21st century; this informal sector was not concentrated in any specific area, but was practiced in every region of the country (Bogdetsky et al. 2001, 54).

In 2001, gold production was forecasted to increase notably, since there were relatively low transportation costs for refined gold bullion by air to Western markets. This combined with the projected growth in the world price made the gold sector the most stable mining activity in the following years. At the same time, the productions of mercury, uranium, antimony, and molybdenum were predicted to remain constant to compensate for an overall drop in profits of the mining sector. Kyrgyzstan has had a history as a producer of these metals, but, in the beginning of the 21st century, mercury was the only one with a projected raw material base large enough for longer term production. These forecasts for the production of mercury were

hampered by challenging mining conditions and poor quality of the ore. Kyrgyzstan did not however, rely solely on its traditional mining operations. At the beginning of the 21st century, processing started of mercury waste products imported from Russia and Europe. Government policy, and especially taxation, was to play an important role in the development of the mining sector, as world prices for metals rose. Because privileges were taken from many foreign investors, they backed away from Kyrgyzstan. The withdrawal of investors combined with decreased world prices for the metals produced by the country forced the government to take new action to improve the situation. The Government decided to take on several measures including reduction of royalty rates, simplification of the licensing procedure, a cutback in the state share of mining projects, transformation of decrees to reduce state interference in the industry, introduction of a new clause on taxing into the Tax Code on the use of subsoil, and establishment of an agency responsible for managing the mining and minerals industry (ibid., 46–48).

2.2.5 Developments in the 21st century and future perspectives

Table 1: Share of output by economic activity as percentage of total production

| | 2005 | 2006 | 2007 | 2008 | 2009 |
|----------------------------|------|------|------|------|------|
| All Industry | 100 | 100 | 100 | 100 | 100 |
| Mining | 1.9 | 2.1 | 2.2 | 2.1 | 2.4 |
| Manufacturing | 78.3 | 78.1 | 77.3 | 82.3 | 81.4 |
| Electricity, gas and water | 19.8 | 19.8 | 20.5 | 15.6 | 16.2 |

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Since 2005, the share of output of mining sector of total production in Kyrgyz industry has been increasing (Table 1). The direct as well as indirect economic value of the mining industry is massive, as can be concluded based on the following statistics;

- in 2007, the production of the mining industry corresponded to 40.1% of total exports and 9.2% of GDP,
- the industry employees over 15 thousand people,
- royalties from the mining industry amount to KGS 500 million (about USD 10.8 million) of revenues to the state budget annually, and

- 9% of all tax revenues come from the mining industry (Country Development Strategy 2009, 50).

The completion of the numerous administrative changes concerning the mining industry has been anything but perfect. Yet, gold mining has become a vital sector of the Kyrgyz mining industry in the 21st century, with this strong development progress cited as one of the achievements of the industry. Between 2006 and 2007, 10.6-10.7 tons of gold were produced. In 2008, there were 5 gold deposits being developed and the estimated gold reserves amounted to 416 tons (Country Development Strategy 2009, 51). One of the mines operating is the Kumtor Gold mine, a remarkable producer with a yearly production of 15-23 tons, in 2007, this is a 37% share of the total gold export and was 6% of GDP. From the viewpoint of ownership, the situation in the gold sector, in 2007, was interesting, as there were only two industrial gold mines operating, Kumtor Operating Company and KyrgyzAltyn in Makmal. Kumtor was only partially (16%) owned by the Kyrgyz Government, whereas Makmal was still a 100% state owned company (Zozulinsky 2007). In addition to the two operating mines, there were a few companies exploring large gold deposits at the beginning of the 21st century, but the planned projects were never actually followed through due to annulled licenses (Zozulinsky 2007). At least, Talas Gold Mining Company in Jeeroy and Kazakh Altynken in Taldybulak Levoberezhniy, both in Northwest Kyrgyzstan, were forced to cancel their plans (ibid.). During the last decade there has been constant preparation for the industrial development of new deposits, and in 2009 there were six gold deposits with field-development programs conducted or in progress, waiting for the operating permission to begin (Country Development Strategy, 51). The ownership situation of mining enterprises, during this last decade, has been interesting, since despite the privatization process that was launched just after independence, state ownership has not disappeared from the Kyrgyz mining sector, and the transformation that has occurred has been slow (ibid.). Only during recent years have foreign companies gained ground in the ownership of assets, but due to fierce local resistance, their future looks uncertain. Private ownership in the gold mining sector has been increasing during the past few years, but at the same time, there are a number of local level mining conflicts, as can be seen from Figure 2.

Figure 2. Mining conflicts in Kyrgyzstan



Map produced by Zoï Environment Network 2011.

The role of mining in the country’s development is particularly pronounced in remote mountainous regions where it is seen as the only way to raise social welfare (Bogdetsky, Ibraev & Abdyrakhmanova 2005, 6–8). Kyrgyzstan is dependent on the extraction of raw materials (OSCE-UNDP-UNEP-NATO 2005, 13) and further development this industry is seen as vital to maintaining current levels of GDP, tax revenues, and the employment rate. The raw material base is believed to be rich enough to permit further growth in minerals production and increased income is sought from the sector (Country Development Strategy 2009, 50). General prospects for the industry are currently considered good due to the strong growth in the world prices of minerals and raw materials (ibid.), but a variety of factors influence plans for development of the mining sector including projected resource reserves, world mineral prices, geographical location, and government policy. Although prospects are considered good, profitability of the sector is limited by high transportation costs (Bogdetsky et al. 2001, 46). Kyrgyzstan is land locked, its relatively isolated position makes access to sea ports difficult, (ibid., 9) and the geographical location of the country makes exporting by sea or train impossible (ibid., 46). This restricts the number of exported products since it is profitable to export only the most valuable outputs from the mining industry (Bogdetsky et al. 2001, 46). However, the most valuable mining products, such as gold, typically have a wide profit margin, thus are not so vulnerable to transportation expenses (Bogdetsky et al. 2001, 9).

At the moment the main concern for the future development of the Kyrgyz mining industry continues to centre on the state's regulation being attractive to foreign investors.

2 Theoretical approaches

2.1 Sustainability

2.1.1 Sustainable development

Sustainability has been emphasised in all policy sectors for over a decade, and the mining industry has not escaped expectation of more sustainable performance. In 1987, the World Commission on Environment and Development defined sustainable development as:

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

This definition is today widely accepted as the general definition for sustainable development. In 1992, the Rio declaration on Environment and Development expanded on this definition by recognizing three dimensions of sustainable development; environmental protection, economic growth, and social development (UNEP 1992). For sustainable development to come to fruition, the given dimensions should be in balance (ibid.). This three-dimensional arrangement is a challenge for the world's mining industry today; there are multiple stakeholders whose interests should be taken into consideration without neglecting any other group's expectations or rights.

A great amount of attention and research has been focused on sustainable development after the Rio declaration and the world's mining industry has drawn many guidelines and instructions with respect to more sustainable practices. Achieving sustainability in the mining industry requires a broad approach: the time scale of the expected influence needs to be extended (Breaking New Ground 2002, 24). Sustainable mining simultaneously looks forward to the future, ensuring that the needs of future generations can be later fulfilled, while managing the current and emerging impacts of the mining operations. Sustainability-assessments ought to include influences of the whole production chain from exploration to long after the closing of the mine. Steps towards sustainability have to be formulated to accommodate the individual characteristics of the surrounding society and the function of the mineral sector as a catalyst of economic wealth. The progression leading to increased human well-being must be proportioned with environmental and cultural aspects. Decisions to commence mining should correspondingly take into consideration ecological, environmental, economic, and social aspects, and be a result of a democratic decision-making process (ibid.,

25-27). Social factors are particularly important, because, as Barrow (2000, 24) states, sustainable development is improbable without supporting social development.

Mining, Minerals and Sustainable Development (MMSD), an international project, which reviewed the world's mining industry practices and possibilities with respect to sustainable development, (IIED 2011) has created in its report *Breaking New Ground* (2002, 24) a list of proposed acts that will aid those striving for sustainable development in the mining industry. The submission is divided into four categories, encompassing the environmental, social, economic, and governance spheres. The framework suggests following the environmental acts in order to achieve sustainability: minimizing waste and environmental damage, promoting responsible stewardship of natural resources and the environment, following the prudence principle, protecting environmental values, and respecting ecological limits in all operations (ibid., 24-25). The report has been criticised for not including NGO's and critical community representatives during its formulation. It has also been considered as being too wide and incomprehensible, and thus, difficult to clarify into a well-defined programme applicable around the world (Moody 2007, 158–159). However, the report is well-known among the actors involved in the world's mining industry; it provides an inspection of the characteristics of the industry today and identifies spheres that are in need of further development.

The MMSD report suggests that the social sphere should be taken into account by respecting all dimensions of human rights, including personal security, economic and social freedom, along with civil and political liberties. The rights of future generations should be respected by ensuring that natural resources are not overexploited, and overall, the benefits, as well as costs, of mining should be distributed justly. The report also proposes acts for the economic and governance spheres. The former includes among others; identifying and internalizing social and environmental costs, and aiming for efficiency in the use of all resources. Important acts in the governance sphere include developing cooperation and promoting democracy, accountability, and transparency in all decisions and acts (ibid., 24–25). Also included in the report are descriptions of the multiplicity of demands and expectations the mining industry as a whole and each individual company is facing. The task is great and failures of single companies can potentially hamper the image of the whole industry. Altogether, the mining industry needs to develop an increasingly holistic view in order to promote sustainable development.

2.1.2 Social sustainability

The three dimensions of sustainable development: environment, economic, and social, have long been acknowledged, but until recently, there has been less research on the social sphere (Colantonio 2009, 2). Yet, social sustainability is an equally important component as the other two, and thus, a prerequisite for achieving sustainable development (UN 1992). It has been

discovered that ignoring social issues can impede compliance with economically and environmentally sustainable practices (OECD 2001, 2), and thus, to more quickly gain sustainable development in the future, the concept of social sustainability needs more attention. The *Breaking New Ground* (2002) report included the social dimension as one of the main categories when striving for sustainable development; this suggests that the importance of the social dimension is today better acknowledged. Nonetheless, a lack of detailed practical theory has hampered application of these principles, thus there is a growing need to clarify the concept of social sustainability (Spangenberg unpublished, 1). There have been many attempts to define social sustainability (*ibid.*), and a growing amount of research concentrating specifically on social sustainability is emerging. Yet, consensus has not yet been achieved and there are no common criteria for social sustainability (Colantonio 2009, 4). The challenges of theorising on social sustainability are connected with the normative dimension of the concept, since research results concerning social sustainability can be labelled as politically-biased, thus leaving them out of the analytic and theoretical discussion (Spangenberg, 1). It has been professed that for a proper dissection of both, the analytical and normative, characteristics of social sustainability need to be emphasized and clarified (Littig & Grießler 2005, 65).

Despite the ongoing debate over a precise definition of social sustainability, some central themes of social sustainability have been identified. Recently, it has been proposed that these themes are experiencing change, with traditional themes being complemented by new, softer ones (Colantonio 2009, 2). The rise of softer themes such as happiness and social integration beside traditional themes like employment and poverty is synchronous with social sustainability becoming more and more difficult to assess, as the soft themes are considered difficult to measure (*ibid.*). Besides the themes around social sustainability, specific indicators have been sought, thus allowing a more adequately assessment of social sustainability. These indicators can be divided into three groups; quality of life and basic needs, equal opportunities with respect to education, and social coherence (Littig and Grießler 2005, 75). These indicators have, however, been criticized for their lack of leeway and impracticality concerning real settings (Spangenberg unpublished). Littig and Grießler (2005, 68–69) point out that social sustainability has gained more scientific visibility in recent years, but increased theoretical discussion around the concept has not yet been reflected in policies of the real world. They continue that linking theoretical indicators with everyday-politics is challenging, as is integrating social sustainability into society in general (*ibid.*, 75). The difficulties arise from the unreachable idea of equity in the three-pillar model overall sustainability. In principle the environmental, social, and economic matters should be in balance. In other words, sustainable development ought to be built through political decisions, which in practice and by definition of political, makes the equal treatment of anything nearly

impossible. In addition the relationship between the pillars is in many ways equivocal, with economic goals easily surpassing ecological and social ambitions (ibid., 66–68).

Work has been, and still is, given a considerably important role, when discussing social sustainability themes and indicators. Work is considered the basic interaction between society and nature, moreover, it is a constitutional basis for a society's structure (Littig & Grießler 2005, 71). On an individual level, work represents a means for supplying one's needs, and the sustainability of work is based on the idea that one should have the possibility to choose the work he or she does, where there should be more than one option available (ibid., 71–74). Littig and Grießler also include a political and governance sphere in the idea of sustainability. They have defined social sustainability as follows:

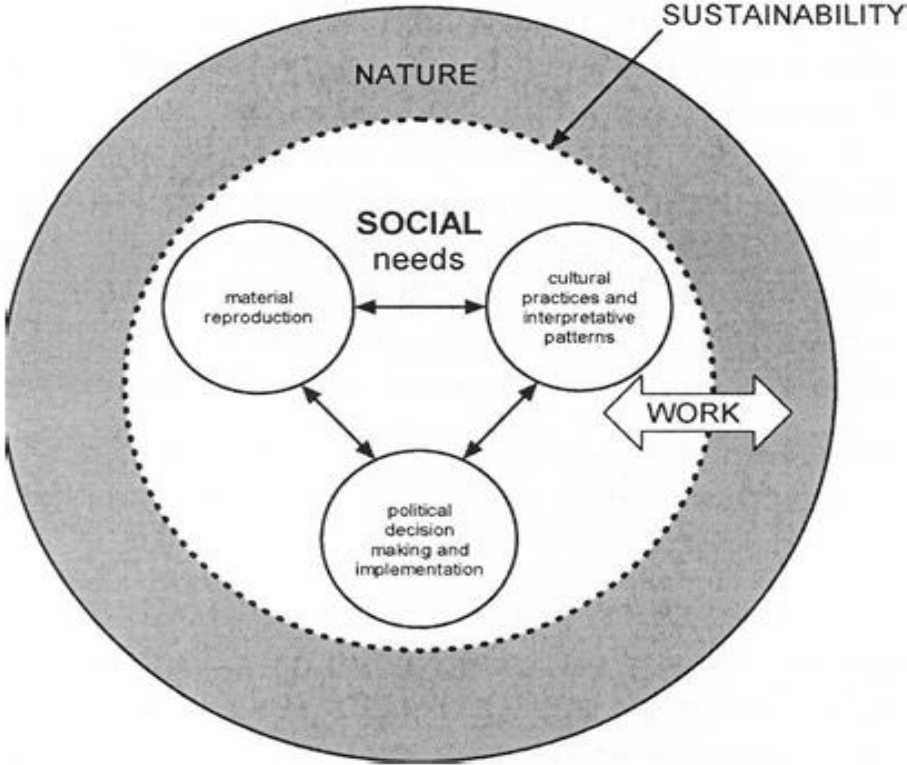
“Social sustainability is a quality of societies. It signifies the nature-society relationships, mediated by work, as well as relationships within the society. Social sustainability is given, if work within a society and the related institutional arrangements

- satisfy an extended set of human needs

- are shaped in a way that nature and its reproductive capabilities are preserved over a long period of time and the normative claims of social justice, human dignity and participation are fulfilled.” (Littig & Grießler 2005, 72).

This definition is applicable all around the world, in developing and developed countries. It emphasizes the role of work, which can be considered as having a comparatively similar meaning and value in all kinds of societies, but it also incorporates participation and justice to social sustainability. This definition is relevant also, when examining the sustainability of mining, as it reaches to the most basic questions related to the mining industry. Impacts on work, institutions, and governance, as well as impacts on the environment and social justice are all included in this definition. Figure 3 illustrates the idea of Littig and Grießler concerning the relationship between social needs, work, and nature.

Figure 3. The relationship between nature, work, and social needs



Littig & Griebler 2005, 73

2.1.3 Social sustainability and mining at the community level

The relationship between mining companies and local communities in general, is problematic to say the least, and there is a long history of distrust. Communities have just recently begun to more forcefully demand their rights, and both governments and mining companies have not been fully able or prepared to react, despite the relevance of the demands. Mining companies often face the most extensive demands in the areas where state institutions are weak. Some companies even are compelled to take on new responsibilities to preserve locals’ social acceptance of mining. This assumption by companies of responsibilities of government is changing, with movement being made towards an understanding of the importance of local institutions. Community participation and the rights of communities have also been better recognized, this has been claimed to have transformed the relationship between communities and companies. For a better understanding of the needs of communities, the MMSD suggests multi-stakeholder forums that are arranged by individual parties and use NGOs as conciliators for disputes. The distribution of benefits from mining should be settled upon through a cooperative process and considered to be an accord between governments and mining companies. All along the line, planning should be in proportion with the capacity to

implement the suggested acts, which should be decided by taking into account the characteristics of the specific area, community, government, and services (Breaking New Ground 2002, xix–xx). This is an extremely difficult task and especially demanding with respect to government structures, as sustainable development is cross-sectoral by nature (OECD 2004,7), while political decisions are typically unable to take the social, economic, and ecological spheres equally into consideration (Littig & Gireßler 2005, 66–68).

Participatory rights and equity are currently considered vital to community-development (Breaking New Ground 2002, 26). At the same time, these are the areas, where the world mining industry requires new practices. Information production and access to information are closely linked to social justice and the capacity of individuals to defend their rights to resources. Improved cooperation and closer understanding between all participants during the decision-making process can be better achieved by paying attention to the process of information generation. Information should be easily accessed but also understandable for all involved, it should not create inequality, but should smooth the distinctions between the participants. In conclusion, communication and information should be such that all actors are able to take part in discussion of the processes of decision making so as to become more equal: the resulting resolutions will be more sustainable (Breaking New Ground 2002, xxii). Equal access to information is mostly based on improving the communication between companies and communities. Arguing for a more active role from the companies, Esteves and Vanclay (2009) have presented a model to integrate the needs of a community with the interests of a mining company. Based on the notions of companies becoming active players in local level development and also participating in voluntary programs, the model is designed to create better business values and contribute to a more equal distribution of benefits (ibid. 137–145).

When considering the natural and environmental impacts of mining, the MMSD report argues that the environmental dimension has been reasonably well covered, in comparison to economic and social dimensions, which have not yet received a similar level of attention. Political discussion general concerns regulation centred on environmental aspects, for example closer observation of material throughputs has been a widely quoted concern put forth by environmentalists. Waste disposal is one of the major challenges of the mining industry, since significant amounts are produced. A sustainable efficient long-term disposal option like every other operation in the mining sector requires accurate planning (Breaking New Ground 2002, xx–xxi).

Current and prospective mining operations arouse concern about the environment, but problems rising from past mining should also be kept in mind. Long-term impacts from the mining industry are a reality, and sometimes historical mining pits can be more degrading for the environment than those of current, operating mines. Society is obliged to pay the costs of

acts done by past generations (Breaking New Ground 2002, xxi), which makes the legacy of the past mining activities especially oppressive from the perspectives of social justice and sustainability.

Constructing this all into a holistic approach, McKenzie (2004, 13) introduced a new type of approach to social sustainability, where the concept is not understood as something stable or as an end-state, but rather a task of maintaining and developing societal resources. McKenzie's approach together with the one presented by the Breaking New Ground (2002, 24) report, offer a good starting-point for encouraging sustainability in the mining industry by suggesting that the time-scale for possible influences needs to be extended. Planning in advance is a key task, but often it does not meet the needs of a specific case and bring sustainable benefits to the local community, particularly after the closure of the mine. Extending the concept to include distributing benefits also during the time after the actual mining operations have ceased is crucial, and acts supporting this concept should be designed beforehand in order to make them efficient. Mine closure planning is currently focuses on only environmental aspects, but social and economic impacts need be attached to this planning (Breaking New Ground 2002, xvii–xxi).

2.1.4 Issues in the Kyrgyz mining industry

The previous sub-chapter reflects the recommendations and guidelines for the industry and companies, but in the reality local people have difficulties getting access to the mining sector, even though any actor arguing successfully that he or she will potentially be influenced by mining activities is supposed to be considered a stakeholder. The reorganization of any pre-existing land and subsoil rights given to villagers by the government is often problematic, but mining companies have recently sought to include locals in their consultations and other acts, in an effort to avoid potential resistance to the projects by communities. Participation is understood to be a tool for preventing possible negative reactions from the local community that could delay the development of a project (Moody 2007, 172–173). Promotion of transparency on the national level has been sought through the Extractive Industries Transparency Initiative (EITI). This initiative seeks to strengthen governance by increasing transparency and accountability in the extractive sector (EITI 2012). Part of the EITI concentrates on verification and publication of company payments, as well as government revenues. The EITI was launched in Kyrgyzstan in 2004, the number of state agencies and mining companies conducting EITI-reporting has been constantly increasing since 2004. In 2010, forty-six companies were involved in the EITI, but not all companies provide reports (EITI 2009). However, the Kyrgyz country-reports have been criticized, among other things, for not being helpful to the Kyrgyz public as they are only available in English and do not provide data separating the different revenue streams (Jacobs 2011).

Despite participatory issues getting more attention, and progress being made by some actors, shortcomings in the communication with the local community and lack of available information are still major issues in local mining politics (Socio-economic status...2011, 10–11;24–25). According to a recent survey, the local population of Chatkal is dissatisfied with the amount of information the companies are providing and feels that the companies are not transparent in their actions (ibid., 11). Similar issues were identified by local authorities, who have calling for closer cooperation between companies and themselves (ibid., 28). Political and participatory problems are becoming evident as local level issues, to the extent that they lead to conflicts (ibid., 26–27; Tynan 2011) The origin of these issues can be found in the poor participatory rights, inadequate regulation, and poorly developed civil society (Honkonen 2011a; Paasiaro 2009, 65). There is a growing trend for locals to seek more power in the decision-making processes. Legal changes have already been submitted to improve the distribution of benefits. This Parliamentary initiative on the allocation of taxes suggested that mining companies would direct 2% of their sales tax payments to local budgets (Honkonen 2011b; Mazykina 2011). At the time, mining was not contributing to local budgets, since tax payments were mainly allocated to the state budget (Honkonen 2011c).The impacts of the initiative remain to be seen, but despite the government’s attempts to develop Kyrgyz mining legislation, the political sphere’s influence on social sustainability still requires a lot of work.

With the view of work as the combining factor between nature and society (Littig & Grießler 2005, 73), and with the request for mining to promote sustainable development and positive impacts on community (Breaking New Ground 2002, 26), employment becomes an issue in the mining industry’s development towards social sustainability. In reality, social sustainability, perceived as Littig and Grießler (2005) define it, is in many cases not fulfilled by the mining industry. This is especially evident in the opportunity to choose one’s work, which is not often possible in a mining-community. In Kyrgyzstan, like in many other countries, the mining industry is mainly located in remote areas, where unemployment is common. In these types of settings mining is often treated as the single opportunity for employment and development. Furthermore, the Kyrgyz government has been stressing the importance of the mining industry for the country (Country Development Strategy 2009-2011, 52–53), and encouraging reliance on it. Some regions of Kyrgyzstan, such as Chatkal, have already professed to be economically dependent on the development of gold mining (Socio-economic status... 2011, 12), even though alternative development paths ought to be at least considered. In Chatkal, employment is considered as one of the most important positive impacts of mining, but negative impacts of the industry are thought to exceed the positive (ibid., 7–9). Environmental problems are stated as the most negative impacts of mining, but a considerable part of the dissatisfaction is towards employment. The impact of mining on the local employment-situation has proved to be somewhat smaller than expected or wished, with short-term contracts increasing the level of discontent with the companies (ibid.). For

sustainable development of the industry and socio-economic conditions of the Kyrgyz people, then more permanent employment together with alternative job opportunities would be necessary preconditions.

From a community-perspective, social sustainability and mining are most commonly approached through their impacts on employment, as indicated earlier. Also in Kyrgyzstan, especially in local level discussions, employment issues are getting a great amount of attention. Nevertheless, political and cultural matters are as equally important (Littig & Griebler 2005, 73; Sachs 1999). Sachs (1999, 32–33) highlights the role of equity to social sustainability, by stating that social sustainability embraces social homogeneity and equal income distribution. In addition, he points out the need of a society for self-confidence and respect of traditions (ibid.). These aspects are often neglected, as the focus has turned to work, but in order to promote community development, they are still important.

Finally, contemplating nature and environment as a part of social sustainability, environmental issues related to the Kyrgyz mining industry need to be discussed. Pollution and inadequate land reclamation are perhaps the most visible and urgent themes that also coming up in local level discussions (Socio-economic status...2011: 8, 10, 25–26). There are many unfortunate examples of past mistakes related to waste disposal in the mining industry, and this is especially true for Kyrgyzstan. The Soviet legacy left the country to deal with numerous mismanaged tailing dumps that are still posing a threat to environment and human beings. Maybe the most lamentable is the case of Mailuu-Suu, a heavily polluted uranium-town in Kyrgyzstan. There are thirteen waste rock dumps, twenty-three tailing dumps, 1.96 million cubic meters of radioactive mining waste, and about 23,000 people potentially affected in the area of Mailuu-Suu (Moody 2007, 141). The pollutants are uranium mine tailings, heavy metals, and cyanides. This uranium plant produced over 10,000 metric tons of uranium ore between 1946 and 1968, to meet the needs of the Soviet Union (ibid.). At present, the area has been identified as one the most polluted areas in the world. The situation is especially hazardous, as the surrounding Ferghana Valley area, is seismically active, with land-slides, earthquakes, and mudflows conceivable. The poorly managed tailing dumps could cause massive destruction in the event of a natural hazard (Moody 2007, 142).

Mailuu-Suu is an extreme example, but inadequate or no land reclamation of mining sites is a real problem (Socio-economic status... 2011, 25–26). A secure and stable environmental state can be perceived as a precondition for social sustainability, as well as environmental security. Brown (2005, 3) has linked society's transition to a market economy with environmental conflicts. He considers the use and control over natural resources as potential sources of conflict. The conflict-potential is especially high in places where environmental stress, political tensions, and inequitable access to natural resources occur. Geographically, remote and mountainous areas are typical such places. Characteristic conflicts are those in which

communities oppose the expropriation of natural resources or projects leading to environmental degradation (ibid.). This perspective is extremely applicable when dissecting Kyrgyz mining issues, as conflicts between local communities and mining companies of this type are common (Socio-economic status...2011, 26–27).

Today, the natural environment has been recognized to play an important part in the relations among states, communities, and individuals (Lowi and Shaw 2000, 1). A sustainable mining industry therefore needs up-to-date environmental legislation and the mining companies' commitment to respect environmental standards. It has been stated that abandoned sites make cooperation and mutual trust between communities and companies difficult (Breaking New Ground 2002, xxiv). In general, old pollution issues have been easily neglected by current actors in the mining industry, making locals feel abandoned. To proceed these old issues have to be dealt with. The problem of bearing the costs is not just local or regional, since throughout history the minerals industry has failed to internalize all costs of mining into the price of the final outputs that have been enjoyed by consumers around the world (ibid.). These historic issues are visible in Kyrgyzstan, affecting reconstruction of the industry, and above all, hampering the relationship between companies and local communities.

2.2 Social impacts and Corporate Social Responsibility

2.2.1 What are social impacts?

Social impacts refer to a multifaceted group of matters, influencing the everyday lives of people. Health, security, economic, and cultural changes all fall under the umbrella concept of social impacts (IAIA 2003). Social impact assessment (SIA) is an instrument used in policymaking that can analyze, monitor, and manage the presumable social consequences of planned projects and policies. Together with Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA), SIA exemplifies one of today's most vital devices for policy making, by seeking to provide information about the impacts of different types of development projects (IAIA 2003). One of the objectives of SIA is to improve the situation of local communities near development projects and to promote social development (Vanclay 2005, 1).

By examining social impacts, it is possible to get information about the possible and expected impacts of development projects (IAIA 2003), which is one of the major reasons for the increased popularity of researching social impacts. Since social impacts include a variety of different changes experienced by an individual or a society, it is essential to acknowledge the different categories affecting the evaluation when examining social impacts (Sairinen & Kohl 2004, 22). Furthermore, distinguishing the difference between change and impact is vital; a proposed action can lead to social change, but the change itself is not an impact, only a

generator of the social impact (ibid., 22–24). Immediate impacts, the first extent of social impacts, are concentrated on things like people, jobs, income, and general security. The second extent of impact is on the social structure of the society, it is described by the level of organization in the society and the interdependence of different actors in it. These second extents have an impact on peoples' well being. Changes in networks are second extent impacts, therefore understanding the institutions and actors, as well as their relationships, are vital. The resources of the society, representing the third extent of impact, are central characteristics of the region or society that influence the ability of the society to adapt to the changes originating from a proposed action, as well as to exploit existing or new resources. The fourth extent of impact are the factors of well being, which is actually a construction of the second and third extents, from the perspectives of well being and quality of life (ibid., 22–24). For the fourth extent, social sustainability is an important concept. Together with social impacts, social sustainability has been more widely discussed in recent years, and this social dimension of sustainability has been raised to the agenda alongside the ecological and economic dimensions (ibid., 11). Social sustainability is often described by using the concepts of equality and justice, because environmental problems may treat people differently, some persons may have a healthier and more welcoming living environment compared to others. For locals, the social dimension is often linked with the ecological dimension in that the living environment consists of the physical environment, as well as social problems. Overall, the concept of 'well being' holds a central position in SIA, since it is interested in the broad meaning of quality of life for people (ibid., 11–14).

Social impacts encompass a variety of things from different spheres of life. Impacts can be direct or indirect; temporary, short-term, or long-term; positive or negative; may arise on a micro or macro level (Juslén 1995, 42); and may be intended or unintended (IAIA 2003, 2) so impacts need to be assessed from different viewpoints. Further, social impacts result in different effects for different groups, and points of impact also vary in time; not all impacts occur in tandem. Although defining social groups in general is problematic, it has been found that age, ethnic, and gender groups' experiences of impacts are individual and that a given impact may at the same time be beneficial for one group, but harmful for another (Barrow 2000, 5). Generally speaking, weak social groups like the poor, elderly, and under-employed are considered the most vulnerable to impacts (Barrow 2000, 104). Likewise, the social dynamics of small communities and their possible dependence on a single resource for their livelihood make them more prone to impacts than larger communities. Often SIA is focused on small communities to investigate their social viability, the local economy, and specific social impacts. Company towns and boomtowns have their own specific problems, differing through time. The term 'company town' refers to a town, community, or an area upheld by single organization, like a company or state body. The organization provides the majority of the jobs, welfare facilities, and other key functions (Barrow 2000, 124). Fast growth of these

towns is followed by possible decline or “bust” of the industry or production in the area, and finally of adaptation to this situation in the form of discovering new opportunities and work-possibilities to support the people. Consequently, boomtown SIA is typically expected to particularly forecast changes in employment-situations and togetherness of the community (Barrow 2000, 121–124).

2.2.2 Social impact assessment – theory

SIA can be simply defined as “*analysing, monitoring and managing the social consequences of development*” (IAIA2003, 1). It can be conducted for several purposes in different contexts; therefore it has proven difficult to define clear guidelines or explicit instruction for performing an SIA (IAIA 2003). Despite this, the way an SIA is conducted is vital, as the process either can be helpful for the people involved, or vice versa. An SIA can have a soothing impact on people and inform them, making the possible resistance to future development less likely. Through enforcement of participation and empowerment, local fears may be diminished (Barrow 2000, 72), but if an SIA is carried out poorly, negative impacts, such as land speculation and resistance, are also possible (Barrow 2000, 25).

The context importance of proper conduct for an SIA cannot be overemphasized, as it is a vital part of the model of social organization that states that all impacts must be proportioned to the surrounding civil environment and society; a similar project can lead to dissimilar impacts on different societies (Sairinen & Kohl 2004, 24). Compared with SEA and EIA, SIA in general has a broader approach and the social impacts are examined thru a wide perspective, including both direct and indirect impacts, not defining any specific group of relevant impacts, but taking into consideration all complications from health to aesthetic issues (IAIA 2003).

There are no clearly defined principles or guidelines for conducting an SIA, but two distinct approaches have been emphasized. The technocratic approach was dominant at the beginning of the 1970s, while the participatory approach became increasingly popular from the 1980s onwards. Besides these two, quite rigid approaches, there is a third, more moderate approach, that combines the two. It is an integrated approach and has been stated to be able to achieve a more strategic overview by uniting the different impact assessment fields, thus getting around the issue of methodological weaknesses of the other two approaches. Because of its advantages, the integrated approach became increasingly popular at the beginning of the 21st century (Barrow 2000, 29). Today, an SIA is perceived as an inclusive and versatile tool, as the following description given by the International Association for Impact Assessment (IAIA) indicates:

”Social impact assessment includes the processes of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.”(IAIA 2003, 2).

The previous quotation is from a document on the international principles of SIA; it describes well the characteristics and the true meaning of social impact assessment. Other auditing systems, like the environmental impact assessment (EIA) and eco-audit have not been able to include social impacts in their assessments as effectively as the SIA (Barrow 2000, 26). One of the greatest challenges for SIA to become true support for sustainable development is to surmount institutional resistance that enables decision-makers and other actors to ignore the principles of SIA (ibid., 27). Through a successful SIA-process more information on social institutions, social change, and social capital can be produced and can have a significant role in taking the measure of whether sustainable development is really taking place in practice, (ibid., 5).

The purpose of SIA is not to be the single basis for deciding whether to proceed with a development project, but rather to forecast the possible risks and benefits, as well as to show other development options that may be available (Barrow 2000, 22). In this way, SIA can be used as supporting information in the decision-making process. From the community-perspective, SIA sheds light on possible changes in the quality of life in the community after the proposed action, by systematically analysing the presumable impacts beforehand (ibid., 4). Though, SIA is not, nor should it be, the only a tool for predicting the undesirable impacts; embodying community empowerment and supporting locals aiming for self-sufficiency and equality are integral parts of the SIA process (IAIA 2003). Social impact assessment should be understood more deeply as a two-way process, since business reacts to rules defined by society during SIA, but business is often also capable of manipulating public opinion, public relations, and lobbying government. Through SIA there ought to be a proactive view provided for both society and business, supporting also institutions to allow for the timely development of regulations (Barrow 2000, 175).

2.2.3 The social dimension of the mining industry

Mining has been experiencing a boom in recent years and governments of various countries have been trying to gain from the situation by establishing up to date legislation and developing tax systems to draw investors (Quiroga 2002, 127). Environmental and social aspects of mining have received more attention among researchers, companies, and communities influenced by mining activities; changes associated with dealing with the social

and cultural issues surrounding mineral development have been professed to have undergone the largest change (Clark & Cook Clark 1999, 189). The level of corporate-commitment to solve these issues has been controversial; while some researchers argue that the companies have not yet fully accepted their responsibilities (Esteves 2008, 39), others point out that the priorities given to social and cultural issues are strongly divided. The issue may be given a high priority in mineral development programs, primarily in the more developed market economies. In other cases the social and cultural issues may only be at the beginning of being addressed, like in the emerging economies of Central Asia and South America. But in many locations these issues are still a secondary priority to overall national economic development, especially in Indo-China and portions of Central Asia and Southeast Asia (Clark & Cook Clark 1999, 192).

A prevalent argument in favor of mining is that economic benefits gained from it enable the wellbeing of local communities. This applies especially in remote areas, where mining is easily considered the only possible development option. However, in the past few years mining companies have been facing growing societal demands, as it has been argued, that to compensate the negative social impacts the local community experiences, a greater part of the benefits from mining should flow into the local society. Currently, local communities are being left to deal with a significant part of environmental and social costs, while they are receiving only a minor part of the benefits. The situation is imbalanced and should be resolved to promote social development of the communities (Esteves & Vanclay 2009, 137–139). It has been stated that the minerals sector is facing a new reality and all actors involved ought to be working within the broader context of international treaties and norms to ensure that the exploitation of a nation's resources contributes to sustainable development. Accordingly, it is essential for all participants to be equal and to form a new partner alliance among all stakeholders, thus replacing the old industry-government partnership (Clark & Cook Clark 1999, 189–190).

Social impacts of mining are complex and can vary significantly between mines and even during the lifespan of a mining operation, thus it is crucial to support the local community in a way that enables other industries also to survive within the region, particularly in areas where all aspects of life have historically been organized by the company (Esteves & Vanclay 2009, 139). Social impacts also treat different groups within the community differently, and usually it is the weak, that are the most vulnerable to impacts (Barrow 2000, 104). The MMSD report *Breaking New Ground* (2002, 200) suggests three categories of communities impacted by mining activities; occupational communities, residential communities, and indigenous communities. These categories are not exclusive, but rather in a constant transformation. Occupational communities derive all or most of their income from mining activities. Residential communities geographically live in an area affected by mining and typically suffer from pollution. Indigenous communities are characterized by people who have

prehistoric cultural ties to the land affected by mining. The nature and stage of mining operations also define the type of impacts occurring; exploration has quite different impacts than the construction phase, and the technical equipment of older mines differs from modern mining technology (ibid., 200–201).

It is impossible to discuss the social impacts of mining without enquiring into the economic impacts. Social impacts are often a result of economic factors and the two are thus hard to separate (ibid., 202). There is always certain polarity involved in mining activities, as they bring both benefits and cause negative impacts on the local community. Economic wealth is the most expected and the most obvious positive impact, and social, environmental, and cultural problems are often the likely adverse effects. These impacts are not just consequences of industrial mining, since artisanal mining has, among the other common effects, also been linked with political tension and even violence (Quiroga 2002, 132). Mining can help to resolve social problems by expanding the financial capacity of the community, but reversed development may also result, due to pollution and other social problems brought by the presence mining operations (ibid., 202). Becoming economically dependent on mining operations is a real risk for rural communities and alternative options should be facilitated. Supporting several industries makes a community less dependent on one, giving it better possibilities to survive irrespective of the future of any single industry. Many negative impacts occur only after mining has ceased. The closure of large operations can increase the internal migration due to a lack of other job-opportunities and absence or withdrawal of social services (Quiroga 2002, 132). For this reason precisely, being aware of alternative development options is important.

Esteves & Vanclay (2009, 144) have asserted that in general, a new clearer and more logical link between investment decisions, community needs, and business values would create better chances for success in the minerals industry. Social impact assessment, in practice, should be more closely linked to the extended international perspective and principles (IAIA 2003), evaluating social impacts equally from the viewpoints of community and business, and seeking to increase the benefits of the community instead of focusing on predicting the possible impacts of mining. Esteves & Vanclay name this developed approach Social Development Needs Analysis (SDNA), which ultimately aims for deeper attention from the mining companies to the life of the communities; they will actually become members of the community. They further state that mining companies are required to have a more pro-active approach to decision-making and a wider participation in voluntary programs. By using voluntary initiatives, it is possible to achieve a more equitable benefit distribution system and social impacts that have not been recognized by the mining industry can be better understood (Esteves & Vanclay 2009, 140–141). The importance of the relationship between a company and stakeholders has been more in their agenda in their discussions of mining, corporate social responsibility (CSR), the environment, and sustainability. There have been several

attempts to reshape the relationship towards closer cooperation and mutual understanding. Quiroga (2002, 132) proposes that a company's ability to carry out economically equitable mining is dependent on its capability to promote collaboration; create partnerships; and to work with government authorities, the private sector, and the community. In general, nowadays many researchers highlight the necessity for the cooperation between all stakeholders (ibid., Cook & Cook Clark 1999), and describe many current trends, such as the greater power of local communities and capacity-issues for rapid development (Cook & Cook Clark 1999), but more practical tools for building these relationships are still needed.

2.2.4 Corporate social responsibility

The rise of social and environmental issues and a deepening understanding about the linkages between economic activities and environmental degradation have been leading to the situation where companies are required to adopt a more holistic view of the impacts of their operations; CSR has been strongly developing in recent years. Companies are often unintentionally involved in creating environmental and social problems, and CSR has been increasingly considered a tool for resolving these issues (Yakovleva 2005, 9-15). Actually, it has even been professed that increased attention to CSR and sustainable development has encouraged mining companies to increase the level of spending on social initiatives (Esteves 2008, 42). Corporate social responsibility is more than making services or goods produced acceptable to market demands to maintain or improve profitability, and it likewise covers more than the economic, legal, or technical requirements of a company (Yakovleva 2005, 9–15). From the viewpoint of companies CSR has been defined as aiming for social welfare and social good (McWilliams & Siegel 2001, 117), both goals that are traditionally not automatically included in a company's business strategy. At its best CSR can be seen as a catch-all concept for managing the social impacts of the business.

The development of CSR is a result of multiple factors. These factors include the changing role of companies from solely private institutions to social institutions operating in the society, where the expectations of a company acknowledges the importance of the welfare of its society, and thus, shares benefits gained from economic activity with the surrounding society; this is acknowledged as contributing to the development of CSR (Yakovleva 2005, 9–15). Functions like poverty elimination and ensuring a secure environment that, before, would not have been seen as corporate responsibilities, are now pushed to their agenda. This initiative is based on the idea of a business bringing more than just economic benefits to its environment. In this new holistic view, a company is regarded as an integrated part of the society it is operating in, promoting human wellbeing is seen as a corporate function (Bigg & Ward 2004, 3). The previous reasons for the increased popularity of CSR are relatively optimistic, but also more critical opinions have been presented and companies' commitments

to CSR have been, at least indirectly, linked with their aspiration for economic profits (Centre for Social Responsibility in Mining 2007, 2).

Even though the idea of shared responsibilities in the business sector has been increasingly accepted in recent years, the functions of the state cannot simply be shifted to companies. Security-issues for example, are nowadays seen from a wider perspective and the state is no longer regarded as the single actor responsible for ensuring a secure environment (Häyrynen 2001, 72), but this does not mean that governments should be released from performing their basic functions. If anything, governments and businesses should cooperate more closely to achieve the best possible situation.

In the mining sector, environmental accidents played a significant role in increasing the awareness of social and environmental problems (Yakovleva 2005, 29). Reflecting upon mining companies' reasons for social responsibilities, Yakovleva refers to the legitimacy theory by Woodward (Woodward et al. 2001), this builds on the idea of a company having an obligation to the society via an oblique social license that binds the company to corporate social responsibility. If the company fails to fulfill these obligations, it is likely to face legitimacy problems. In this respect, the sustainability of a business is linked to its social acceptance in the society it operates (ibid., 11), this forces companies to take cognizance of the social impacts they are creating. This social license is not permanent, and can change or expire over time (ibid.), this can be seen as a beneficial factor for the mining community, since it necessitates companies to plan their operations and responsibilities for the long-term.

In a close connection with the legitimacy theory, is the stakeholder theory, which is based on the assumption of company policies and actions having an impact on multiple stakeholders (ibid.); government, shareholders, and particularly communities are the most central stakeholders for mining companies. From this point of view stakeholder management is crucial: if the concerns of the stakeholders are not taken into consideration, the operations of the company can be hampered (ibid., 12). The two theories are quite similar, emphasizing the social obligations of companies, but the latter can be seen being more extensive, since it includes more actors in the impact-zone. The problem of with these theories is that they best apply in countries with strong institutions and an efficient legal framework, as do CSR principles in general (Bigg&Ward 2004, 4). In countries with weaker institutions, companies often face complicated situations and awkward demands from stakeholders, because the state can be incapable of providing even basic social services. Businesses have been urged to provide services that do not belong to their actual sphere of operations and thus, the extent of corporate responsibility has been questioned by companies. This issue of increasing demand on companies pertains specifically to the extraction sector, characteristically operating in isolated areas where the presence of the state is exiguous (ibid.).

Community-company relations are a huge issue for mining companies, and they have been increasingly researched in past years (Kemp 2009; Kelly & Burkett 2008). Kemp (2009; 5) presents a model of community relations (Table 2), adapted from Kelly and Burkett (2008; 36), identifying 4 different models for interaction. Table 2 presents these models and describes the key methods and aims of each one.

Table 2. Models of work in company-community interaction in mining

| Model | | Primary driver | Dominant work 'space' | Main disciplinary orientation | Key aim | Main methods |
|--------------|---|-----------------------|---|--------------------------------------|--|---|
| Traditional | 1 | risk | within company | media and communication | target audience message consumption | information production and dissemination |
| Traditional | 2 | risk | within company | public relations | protect and promote corporate reputation and goals | control and contain issues, problem solving and positive profiling |
| Emergent | 3 | risk, rights | within and across community and company | inter-disciplinary | mutual understanding and organizational change | inclusive dialogue, relationship building and influencing within the organization |
| Emergent | 4 | risk, rights | within community | community development | benefit sharing and empowerment | developmental process, participation |

Kemp 2009, 5.

In the traditional models, the interaction is understood to be a tool for avoiding and minimizing risks, but in the newer models, especially in Model 4, the primary driver for maintaining cooperation is not seen as risk, but as the right to maintain the social license to operate and respecting the rights of the community through the promotion of an equal distribution of the benefits from mining. From the community perspective, this type of fluent and interactive collaboration would encourage the empowerment and development of the

community, preventing possible dependence on the company and encouraging also the expansion of other industries and businesses (ibid.).

2.2.5 Trends in social contributions to local communities

Currently nearly all Kyrgyz mines are located in remote areas of the country. During the Soviet era, when the mining industry was more active, mining plants operated closer to areas of settlement and agriculture (Bogdetsky et al. 2001, 77), and the effects of the Kyrgyz mining industry could be seen in the housing-structure of the country, as towns and villages were emerging and developing side by side with the mining plants. At the time, mining companies were also strongly influencing the social situation of the regions they were operating in, by taking responsibility for the whole social infrastructure of the communities (ibid., 40). The costs then for social responsibility were education, healthcare, and infrastructure development, and these were not bound to profits from the mine. Very remotely located mining pits took wide responsibilities with respect to social services and the local infrastructure (ibid., 77–78). After the collapse of the Soviet Union, these social responsibilities became totally unprofitable, the mining companies began to consider these social infrastructures a burden, (ibid., 40) and all expenses for the provision of social services and infrastructure were transferred to the municipalities (ibid., 80).

Distribution of the benefits of the mining sector, and the amount of responsibility mining companies are willing to take, diverges during and after the Soviet period. It has been professed that in Soviet times the mining industry was quite profitable for local communities, bringing both social and economic welfare. The infrastructure of mining towns was developed by the companies, increasing the amount of goods imported into the towns. Schools, healthcare, and childcare were constructed according to a companies' plans with local communities provided a reasonably good service sector. Mining projects also vivified the cultural lives of the villages, developing the intellectual atmosphere of former rural areas. Mining companies were important employers, and the status of mining workers was considerably good. Salaries from the sector were high, increasing the general income levels in the communities. As a result, the demand for many goods grew, profiting the agriculture and other sectors of the Kyrgyz economy. Therefore, the growth in the mining sector was considered advantageous for the economy of the whole country (Bogdetsky et al. 2001, 77–78).

After the collapse of the Soviet Union there was an urgent need to cut production costs, this was done mainly by decreasing the labour force. Local communities experienced a wretched situation, as people lost their livelihoods, with no other job opportunities available. The downsizing was indeed significant, since during the Soviet era, the minerals and mining sector employed 23,000 people, while by 1995 the sector only employed 10,500. During the difficult times, the Kyrgyz government subsidised the mining companies to provide support

for the local communities, but seasonal, short-term assistance did not provide for a sustainable solution in the long-term (ibid., 80). The traditions of providing extensive social contributions have changed since the Soviet times. Today, the support to local communities is not as direct as before, with companies feeling that their tax payments to national and local governments should be enough to cover their responsibilities. This has led to some traditional, necessary community services not being provided due to a disregard for responsibility between the government and mining companies, because of the disagreement and misunderstanding of which entity is now actually responsible for the execution of these undertakings (Bogdetsky et al. 2001, 80–84). Nevertheless, mining companies are taking part in local development through road reconstruction and other projects, and although their contribution is debated, it should not be ignored.

All in all, the general absence of significant conflicts with the mining industry during the Soviet period can be explained precisely because these beneficial impacts reached neighbouring towns and villages (Bogdetsky et al. 2001, 77–78), and this compensation from the mining companies combined with the restricted expropriations kept the communities satisfied (ibid., 77). Taking a more pessimistic approach, providing benefits, for employees, do not automatically have a solely positive effect on a community (Barrow 2000, 175) it can also contribute to handicapping the community and damaging its resilience to prospective risks. In the long-run, the situation can turn into one of dependency of the community on the business, and in a case of business failure, when the provided benefits end (Barrow 2000, 175) it leaves the community with less of a structure to survive. After the Soviet collapse, many remote Kyrgyz communities faced this situation, and now, due to the recent development of the Kyrgyz mining industry, the issue needs again to be put on the agenda.

2.2.6 Current practices

Because of the harsh geographical conditions of Kyrgyzstan, many still regard the mining sector as the only way to improve the infrastructure of the mountainous and remote areas of the country (Bogdetsky et al. 2001, 47). The mining industry is expected to bring wealth and well being for the whole country, but local communities sometimes regard mining companies with disinterest unless they see an opportunity to amend their own socio-economic situation (Breaking New Ground 2002, xiv). Communities are motivated especially by jobs and the general possibility to improve their economic situation and infrastructure (Bogdetsky et al. 2001, 79–80). If a community does not consider mining beneficial to its development, resistance is likely to occur (Breaking New Ground 2002, xiv). The historical roots of the Kyrgyz mining industry with respect to social responsibility and the development of infrastructure reflect in the current outlook, and can be seen as one of the reasons behind the fairly large, expectations of socio-economic benefits from the industry.

Social contributions are still an increasingly debated issue in the development of the Kyrgyz mining sector with local communities, now perhaps, pushing the problem to the agenda more. A central question in the discussion of the distribution of responsibilities is the supportive role of the government in past mining areas, where state-owned mines are no longer operating (Bogdetsky et al. 2001, 84). There are plans to increase and develop mining in every part of the country, but the aimed projects are to be executed in the long-term, and do not provide a solution for the current social problems of the abandoned mining villages. Taxation is closely connected with social issues and poverty prevention, however, low taxes attract companies and as well make lower grade areas profitable to exploit, increasing the overall capacity of the mining industry and creating more jobs. Yet, high taxes provide more reasonable compensation for the impacts of mining. In 2001, it was estimated that by reducing taxes, the state budget of Kyrgyzstan would be increased by USD 100 million yearly (ibid.). The pattern is complex, as a more prosperous state budget allows for social service and infrastructure development, as well as other support for rural areas, but these same tax revenues might not be enough to cover the costs of the rehabilitation of environmental damage caused by intense mining. The underlying question for the low taxes scenario is, will mining be beneficial enough for the local people and the government, if it is conducted by international companies tempted by low taxes and a low-cost labour force (Bogdetsky 2001, 83–84). In order to prevent an uncontrolled mining boom that would exacerbate environmental degradation, the low taxation scenario requires strong and accurate regulation of exploration and extraction together with a competent supervisory authority. At the moment, it seems that in spite of recent development-efforts by the government, contributions to local communities remain relatively small.

From the perspective of the local workers, one of the drawbacks of the mining industry today is the salary. The average salary in the mining industry is higher than in Kyrgyzstan in general, but the equality of the wage scale has been questioned by locals, since some mining companies are paying expatriate staff multifold salaries when compared with the local work force. The communication and openness of the mining companies have as well been impugned, and there have been accusations of companies trying to hide environmental damage. As a result, communities have ended up performing confrontational acts to redress unfair practices of the companies. The salient point of the issue concerning the communities is one of distribution of costs and benefits; many Kyrgyz mining communities feel that they are not receiving enough profits from the companies to compensate for the negative impacts of mining. Nevertheless, the taxation system of the country obligates the companies to direct payments to local budgets; In principle communities should therefore receive some compensation for the negative side-effects (Bogdetsky et al. 2001, 82–83). Unfortunately, the reality is that many companies are registered in the capital, Bishkek, and thus their tax payments are allocated there. Furthermore, there have been cases of misuse of the tax

payments by local leaders, suggesting that a more open and solid system for channeling the money to actually benefit the communities should be established (Bogdetsky et al. 2001, 82–83).

Regarding the positive impacts on local communities of the mining industry, the most commonly mentioned are employment and improved infrastructure. The mining industry is considered to have an important role in the development of infrastructure in rural areas. Roads constructed by the mining companies during the exploration stage of mining projects are used by local people for their own purposes (2001, 9). The negative impacts of roads is that they have been connected to environmental accidents, such as toxic spills, even though compared with the benefit of a developed infrastructure these events have been stated to be trivial (Bogdetsky et al. 2001, 10). However, these types of comparisons to only to accidents can be harmful and oversimplify the negative impacts of infrastructure development. To get a comprehensive picture of the situation, the impacts of these developments should be studied more widely, by including from the environmental and social dimensions more deeply into the analysis.

3 Methodology

3.1 Methodological choices

Qualitative methods are often used to study complex phenomena (Boyatzis 1998, 54), and as the aim of this thesis was to shed light on the multiple impacts of mining and the sociological processes connected with mining in Kyrgyzstan, qualitative research was best suited. Generally speaking, there can be a variety of aims for qualitative research, but one of the most common is “*understanding the details of peoples’ lives or frames of reference*” (Gibson & Brown 2009, 8). In view of the fact that mining is a forceful industry that has impacts on the natural and built environments, employment, and many other aspects of life (Sairinen 2011) qualitative research was methodologically a natural, justifiable, and functional approach, since quantitative research would not have been able to similarly capture and understand these aspects.

The research includes a case-study of the region of Chatkal, one of the 8 districts of the Jalal-Abad Province, (UNDP 2011) located in western Kyrgyzstan. Through this case study the social impacts of mining are dissected on the ground. This is a practical method in cases where the phenomenon researched is not separable from its context (Yin 1993, 3), since social impacts are always bonded to context (Joyce and MacFarlane 2001, 12), then including a case study into the research was functional. Case study, as a method, includes a wide range of different types of research, and it has been argued that actually all qualitative research is a

case study (Eskola & Suoranta 1998, 65-66). Case studies are not typically orientated towards generalizing outcomes or conclusions of the research (ibid.), which is also the nature of this research. This thesis aims to present the social impacts of mining in Kyrgyzstan, acknowledging that these impacts arise from their surrounding context and thus similar impacts may not occur in different locations. Nevertheless, regardless of the specific location of mining activity, there are some commonalities to these impacts; hence, through the case study of Chatkal, it is possible to learn about the dynamics and characteristics of the social impacts of mining in Kyrgyzstan.

The methodological approach of the thesis is ethnographic. The word 'ethnography' is composed of two separate words; 'ethno' designates folk and 'graph' refers to writing (Silverman 2006, 67). In short, ethnography refers to social scientific writing about specific people or folk (ibid.). Atkinson and Hammarsly (1994, 248) state, that ethnographical research is characterized by a tendency to primarily use unstructured data. Metsämuuronen (2011, 225) likewise confirms that in ethnographic research collecting empirical data is not predetermined. It is also mentioned that ethnographic research is usually more orientated towards exploring the nature of a particular social phenomena than testing a hypothesis about them (ibid.). Silverman (2006, 67–68) notes that observations made in the field are an important aspect of ethnographic research, although it is possible to use also second hand sources like written texts.

This research can be considered ethnographic by nature; the data of is unstructured and there is no particular hypothesis to be tested, but the research endeavors to study the social dimension of the mining industry in Kyrgyzstan. Though, in this research the collection of empirical data was conducted during a comparatively short period of time, in relation to traditional ethnographic studies where the time spent in the field can last for years. In addition, narrowing down the research problem was only done after disentangling different ways of defining the key concepts of the research. Ethnographic research usually does not begin by finding an extensive theoretical perspective (Silverman 2006, 79-80). On this account, despite the many features of an ethnographic study, this thesis is not strictly ethnographic research.

The conceptual framework of the thesis consists of two main concepts: social impacts and sustainability. The sustainability of the Kyrgyz mining industry is assessed through the experienced social impacts of mining at the local level. Often social impact assessment (SIA) has been employed to explore social sustainability, but the method has been criticized as being simplistic and unable to grasp the multiplicity of the concept (Colantonio 2009, 21). It needs to be highlighted that in this research social sustainability is not addressed through SIA, instead the social impacts of mining are examined without conducting an actual SIA.

Furthermore, the core of the study is to research social impacts while social sustainability serves only as an additional research-question.

Social impacts can be divided into categories, according to which dimension of life the impact is focused on. The categories, adapted from Kunnari, Niemelä, and Suikkanen (2008, 16) are:

- environment,
- economics,
- employment,
- housing and community,
- local livelihoods, and
- health.

These categories reflect the impacts of mining on a general level, but in this research they are used merely as guidelines, through which the social dimensions are contemplated. The actual scrutiny of the social impacts is conducted from the basis of themes drawn from empirical data. This is done to emphasize the characteristics of the specific case chosen. When examining a social impact, the central aim is to identify how the impact influences the social dimension of human life (Esteves & Vanclay 2009). Impacts can fall upon individuals, communities, or other groups. They can also be negative or positive by nature. In identifying the social impacts of mining, the fact that individual mines and their surroundings are different, has to be taken into account. Social impacts are complex and can vary significantly between mines, and even during the lifespan of a specific mining operation. Mining companies should see local communities as important assets that can benefit the development of the mine. The community has to be able to phrase its own development orientations to support the local community in a way that enables also other industries to survive in the region, this is particularly crucial, in areas where all aspects of life have historically been organized by the company (ibid.). As Kyrgyzstan had an extensive mining sector, that provided significant social contributions, during the Soviet period, the current situation of strong mining development together with transformation towards liberalism offers an absorbing case for research.

3.2 Empirical data and method of analysis

The empirical data of this thesis consists of results from interviews, field notes, and consultations with other project members. The field research, an integral part of this thesis, was conducted within the structure of a larger project, with the questions (see Attachment 1 for a complete list of the English version of the interview questions) for the interviews prepared by the project group. The interviews were conducted in the Chatkal Valley in Kyrgyzstan in July 2011, together with Viktor Novikov, a member of the project-group and

with the assistance of local partners. The interviews were semi-structured, thematic interviews. For practical reasons, the interviews include both group and individual interviews, making the actual number of interviewees larger than the number of interviews. The interviews were mainly conducted at mining-sites, as it provided the best way to reach the target-group and a possibility to make observations of working conditions, equipment, and the sites proper. The focus was on industrial mining, with artisanal mining only briefly touched upon.

The group of interviewees consisted of artisanal miners, representatives of the local administration, workers from industrial mining companies, mining professionals, and members of local communities. Altogether, there were sixteen (16) interviews, of which the eight (8) interviews with the industrial mining representatives compose the largest proportion. Four (4) interviews were made with local artisanal miners, one (1) with a local citizen without direct personal connection with the mining industry, one (1) with local authorities and one (1) with local environmental experts. One (1) interview was conducted in Bishkek, with a state environmental expert while the rest of the interviews were made at mining sites.

The reason for interviewing a variety of participants representing different groups was that it allowed a more holistic view of the situation. Many of the interviewed miners were local, giving their interviews an additional dimension. Further, it compensated slightly for interviewing a relatively small number of local people not directly involved in mining, compared with those interviews with mining representatives, which composed half of the interviews. In relation to representation it was important to interview people with different backgrounds, in order to support generalization of the findings. It is crucial to get the opinions of different groups involved in and influenced by mining (Gibson & Brown 2009, 57). The technique used for sampling, was snowball sampling, which is typically used to approach groups that are hard to reach (Metsämuuronen 2011, 49). In snowball sampling the subsequent interviewees are selected by recommendations and information provided by a contact person, for example a previous respondent. The sample grows, as the interviewees are guiding the researcher to the next interviewees (*ibid.*). For the research this method was functional as there were no statistics for the target group, and systematic sampling was impossible. Snowball sampling also minimized the amount of participants refusing to be interviewed, this is the case with respect to the culture of Kyrgyzstan where complaisance and connections matter.

To analyze the interviews, the method of thematic analysis was utilized. In thematic analysis, the researcher is seeking particular themes from the data (Eskola & Suoranta 1998, 174-180; Gibson & Brown 2009, 127). The focus can be either on finding commonalities, differences, or relationships, and the themes can be drawn from theory or the empirical data itself (*ibid.*). In this research, the themes are based on a theoretical approach that had been built on the

basis of different categories of impacts from mining; these categories were utilized in the interview-questions. Altogether fourteen (14) themes were identified, and organized into five (5) main categories, according to the type of impact they present. The categories are: direct economic impact, direct social impact, environment, corporate social responsibility, and society. The organization of the data is presented in Table 3.

Table 3. Organization of empirical data from interviews

| Type of the impact | Themes |
|---------------------------------|--|
| Direct economic impact | employment, local economy & welfare, taxes, and social contributions |
| Direct social impact | mining workers & their conditions, additional benefits, and mining community |
| Environment | environmental impact, authorities, and recreation values |
| Corporate social responsibility | communication, participation, and social responsibility |
| Society | conflicts and community development |

The interpretive validity of the ethnographic methodology has been criticized. Ethnographic research always produces a relativistic perspective, where solid findings are questioned. To produce valid ethnographic research, transparency in the research process, as well as acknowledgment of the researcher as part of the setting are central (Altheide & Johnson 1994, 485–487). Referring to Altheide and Johnson (1994; 494–498) the key problems with ethnography are related to objectivity in organizing, analyzing, and presenting data. One of the challenges for an ethnographer is to reach the multiplicity of the research problem and to become aware of the reflexive process while aiming for accountability for the research (ibid.).

3.3 Validity and reliability of the research

Validity and reliability of qualitative research are typically considered difficult to examine. However, selecting adequate methods to examine the chosen research question as well as transparency with respect to the research process enable a better evaluation of the validity of presented results (Altheide & Johnson 1994). In this research, sampling decisions played an especially important role; in thematic analysis sampling decisions are major factors, because they have an influence on the reliability and validity of the analysis (Boyatzis 1998, 54). The snowball-sampling, used in this research, is a very open-ended method. In snowball-sampling,

the final group of participants is difficult - even impossible to predict (Metsämuuronen 2011, 49). For this research, the method was considered practical, since at the beginning of the field research, the research-group had very limited contacts within the target group. Also, recommendations and contacts traditionally play a significant role in Kyrgyz society, so snowball sampling ensured our project-group would be welcomed by the participants, and minimized the number of people reluctant to take part. On the other hand, it is important to note that the sample (16 interviews) is comparatively small, and although a majority of the interviewed miners come from the local region, the number of interviewees directly not involved in mining as well as the number of interviewed local authorities was very limited.

In this research, the challenge of validity centres on the collection of the empirical data. Silverman (2006; 97) states that empirical research and observations are always guided by the researcher's theoretical focus. For an ethnographer it is vital to be familiar with the cultural context of the research object (Metsämuuronen 2011, 220). However, at the same time, the ability of the researcher to be open-minded and free of assumptions in the field is important. In this research, the time spent in the field was short, less than two weeks, and thus long-term observations were drawn from literature. In general, the reliability of research is influenced by the quality of the recordings, clarity of notes taken, and the conformity of categorization of collected data (Hirsjärvi & Hurme 2000, 185). According to Marshall and Rossman (2006, 154) "*Qualitative data analysis is a search for general statements about relationships and underlying themes.*" For the reliability of the analysis, as well as for the validity of the empirical data, one of the greatest challenges with respect to the interviews was the language barrier. The interviews were conducted mostly in Russian, partially in Kyrgyz and I had to rely on an interpreter. The lettering of the interviews was not conducted word for word, so finding underlying themes from the data, and explicating it reliably was challenging. The translation of the interviews from Russian into English was conducted by Kyrgyz project-partners and the quality of the translation was quite poor here and there. Even so, in general, there were no major challenges to conducting the research and the theoretical background for the research served well. Alternative theories for approaching the research-topic could have been environmental security and CSR examined more deeply, and for a further study of the Kyrgyz mining industry both would provide an interesting setting.

3.4 Evaluating the analysis: felicity of the themes

Since the interview-questions were organized according to themes, it was natural to utilize the same themes as a starting-point for formulating the final themes of the analysis. The challenges of the analysis were mainly related to equivalence of themes and the data, as the extent of the data varied notably between the themes. Some themes did not stimulate the interviewees, resulting in short or non-existent the responses. Questions concerning

environmental security proved to be especially problematic; this is clearly reflected in the data. This environmental theme was included to the questions, but it was not visible in the data. Due to this kind of challenge, I chose to draw the themes of the analysis mainly from the data, utilizing the questions only as a guiding tool. Considering the number of themes, as well as the functionality of the analysis, this reduction in the number of themes analyzed made working with the data easier, and the analysis less fragmentary.

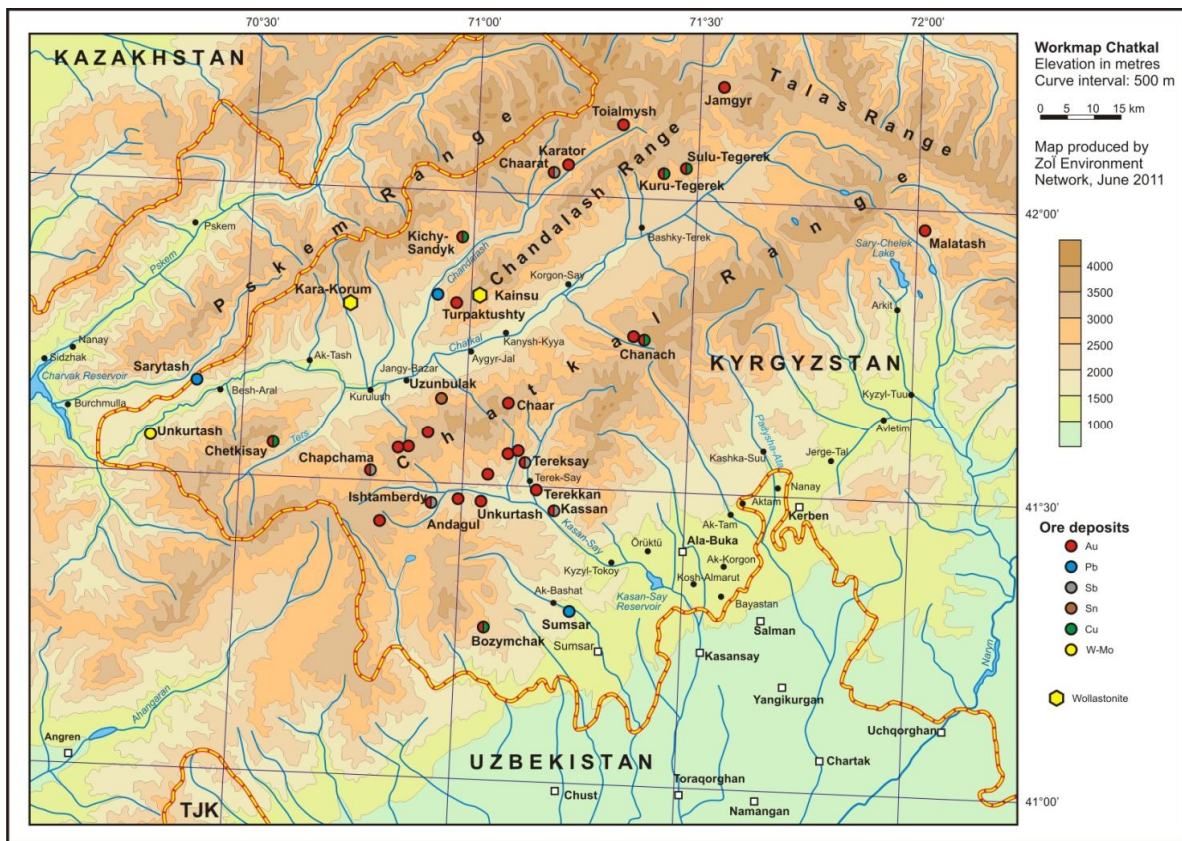
Particular themes were more difficult to clarify than others. Conditions for workers, as well as other themes that could potentially have an impact on the image of the companies were especially challenging, since the answers from the companies were framed to evidence outwardly a positive image. The importance of identifying underlying agendas was pronounced. All in all, the most difficult task was organizing the data. The interviews were conducted geographically in a relatively large area, and despite the similarity of the general setting, the situation in every village and town is unique. Moreover, the attitudes of the locals towards the companies varied according to background and ownership of the company, as well as due to many other factors. For this reason it seemed practical to search for general themes instead of building a fragmented analysis that included a number of small cases. In addition, the individual interviews were not extensive enough to enable a deeper level of analysis of a specific mining company or a site. Regional analysis was also applied because the aim of this thesis was, to drawing from different types of situations and settings, to build a view that would present the general situation of the Kyrgyz mining industry. Although, it would have been interesting to concentrate on a more specific smaller area, as it would have enabled a more detailed analysis.

4 Social impacts of industrial mining in the Chatkal region

4.1 Chatkal region

The Chatkal Valley is a mountainous region located in western Kyrgyzstan (Novikov 2011). Chatkal is a scarcely populated and remote region with notable minerals resources (Figure 4) that have been attracting a boom in the mining industry for the past decade. Chatkal is a poor region, struggling with high unemployment-rates. The region has unique ancient gold mines and current activities include both alluvial gold extraction along the rivers and the development of major deposits (ibid.). The most important local economies are agriculture and cattle rearing with other opportunities for employment very limited, making migration to Russia and the capital, Bishkek, for better educational and working possibilities common.

Figure 4. Main mineral deposits in the Chatkal region of Kyrgyzstan



Map produced by the Zoï Environment Network, June 2011

The perceptions of the local population and authorities over mining are mixed, and depend on the specific location, historical background, and environmental practices. Also some influence comes from the heated situation in the neighbouring region of Talas, which is closely followed by the Chatkal population. In general, conceptions of mining companies operating in the region vary, as some areas are experienced with working with foreign companies while others would prefer the development of state-owned companies. This is because many locals remember mining during the Soviet period, when the industry was purely a state activity, and social contributions to local communities were extensive compared with the current contributions. To bring local communities and mining companies closer together, two NGOs; Osh Aarhus Center and Chatkal Development Fund, have been active in settling the conflicts of the Chatkal Valley (Novikov 2012). The NGOs have taken part in organizing public hearings and have mediated between the local population and mining companies. They have also pushed to the forefront the environmental aspects of mining development. Just after the Soviet collapse, before new governance was established, NGOs played significant roles in rural local contexts, since foreign mining companies made their contracts in Bishkek and had only minor knowledge of the rural context (ibid. 2012).

Mining sites in the upper Talas Valley have received much political and media attention in the past 5-10 years due to the fierce resistance of the local population to all mining activities. Currently, Talas locals are extremely negative toward the mining industry. In Chatkal, local resistance to mining has recently been increasing and it is feared that the population of Chatkal will copy actions in Talas. To prevent a similar conflict from developing in Chatkal, there is a need for mechanisms of conflict management with regard to environmental and security issues, as well as tools for building closer cooperation between the local population and mining companies. In general, because local resistance in Chatkal is a relatively new phenomenon, the region offers a window of opportunity to examine the social impacts of the mining industry in conjunction with the local dynamics and relationships between local populations and mining companies.

4.2. Direct Economic impact

4.2.1 Employment

Mining activities have an obvious positive impact on the employment-situation of the Chatkal region; they can be considered significant employers in the region. According to the head of the Chatkal local authority, in 2010, some 900 people were working within the industry, and there was hope that the number would increase up to 2000 by the end of 2011. The population of Chatkal is about 23 thousand, thus if the local administration's goal is achieved, nearly 10 percentage of the population would be working in the mining industry. Kyrgyzstan has been struggling with unemployment, with youth unemployment rates being especially high. In 2004, the total unemployment rate of the country was estimated to be around 18% (CIA 2011). In recent years, reliable information concerning employment rates has not been available and estimates vary greatly. According to the head of the Bishkek Centre for Economic Analysis, Sapar Orozbekov, the unemployment rate in 2011 was near 20%, while the National Statistical Committee of the Republic estimates the rate at 2.9% (Bakutoday 2011). However, among the population of Chatkal, employment is considered a prerequisite to surviving and any job-opportunity is appreciated and welcomed. Altogether, despite the difficulty of specifying the impacts of mining on the employment-situation of the Chatkal region in detail, mining undoubtedly plays a positive role in employment.

Mining companies are hiring locals to work within mining industries, but migrant workers are also hired. According to interviewees there are no noteworthy differences in employment policies between companies. Local workers typically constitute about 30 to 50 percent of the workforce at a site. Both state- and private-owned companies similarly employ locals in addition to people from outside the region. However, Chinese companies have less of an impact on the employment-situation of the region since they usually recruit a great number of Chinese migrant workers. The total number of hired workers depends on the size of the site

and equipment used. A site can employ up to 400 people, however, the average number of workers is smaller, typically less than 100. In general, there is no specific group employed by mining companies. Some companies stated they do not recruit workers under the age of 18, typically workers are 18 to 50 years old, but in general, companies did not report having any specific requirements for their workers. Probation-periods are a common practice, aimed to ensure the quality and suitability of the workforce.

There are rarely enough professionally skilled local workers available to meet the needs of companies. This is the main reason for recruiting outside the local area. For the local population, the hiring of migrant workers is hard to accept. Overall, the employment-question is one of great concern for local communities; there are great expectations towards the companies. Companies admit acknowledging that by hiring locals the interaction between the local community and the company has a better possibility to be successful. Typical positions for local people are in work as a security guard or a truck driver, whereas for professionally more demanding positions the companies prefer to recruit migrant workers.

Representative of an industrial company:

This should be a team. Very expensive equipment, just to hire someone to work is impossible. If you have good drillers, they will be hired by a certain company. Me as a director will recruit for professional quality. Driller is a delicate thing.

Despite the obviously positive impact of the mining activities on the employment-situation of the Chatkal region, there is a certain amount of debate among the local population about the hiring-policies of mining companies. Because of the poor employment opportunities and high unemployment rates in the region, mining activities and their impact on the employment-situation receive great attention. The local population feels that the possibilities to be hired by a mining company should be equal to every villager, and that when hiring, companies ought to favor the local workforce. This situation is problematic since companies concede that with respect the workforce, mining is a demanding industry and in order for a site to work successfully, specialists are required. In practice this means that locals are rarely employed as specialists because they lack education and experience for these professions. At times, this creates tension between the companies and locals. To prevent the situation from heating up and to increase cooperation, local authorities have started to inform the companies about local professionals. The work is done in the hope that more employment opportunities will be provided to locals instead to migrant workers. Companies are also becoming increasingly aware of the issues around employment and they have taken a more active role in preventing the situation from becoming worse. There are positive signs of cooperation, as in some cases companies have agreed to train locals to work as specialists.

Mining worker (Tereksay Village):

People mainly go to Russia to work. Everything we earn goes for food and clothes, no savings.

Representative of an industrial company:

Concerning the local population, now, 18 people from nearby villages work at the site. They began in 2004, because there were no specialists, locals went through a long training of 1-2 years, who survived, still work here.

Regardless of the emerging good practices, the general employment-policies of companies are questioned by the locals. There are claims of nepotism and cronyism in the hiring of workers, increasing the mistrust. In the long-run, this speculation has the potential to decrease unity and community spirit, but currently the rivalry for jobs is between local and migrant workers.

From the viewpoint of stability and sustainability, the mining industry as an employer does not appear solely positive. Although mining offers employment for a considerable part of the Chatkal population, the work is characterized as being transient. Generally speaking mining is considered to offer respectable employment, and from the viewpoint of the local population, the most important is that a stable income is provided. When compared with agriculture and cattle rearing, where the weather and changes in demand play a big role, there are fewer uncertainties to employment in the mining sector. Thus, working within the mining industry is considered a stable and a financially secure life. Furthermore, Chatkal is a relatively large area with the environment and soil differing throughout the valley. In some areas, agriculture is only practiced at the subsistence level mainly for vegetables, with mining perceived as one of the very few possibilities to earn currency. While in other areas there is keen interest in investing in agricultural development. Considering this diversity of perception, an unequivocal picture cannot be presented of the importance of the mining industry for the employment situation of the Chatkal region. In areas where local industries are weak or low, the mining industry is welcomed with optimism for employment. Nevertheless, looking from a wider angle, the mining industry has many improvements to do, in order to provide secure and stable employment for the population of Chatkal. For most people, mining is seasonal work, since, due to harsh weather conditions, only a small minority of mining sites operate year around. The workers are mainly hired on a seasonal or other short-term contract; according to a recent case-study, conducted in Chatkal, a clear majority of the locals hired were working on short-term contracts (Socio-economic...2011, 9-10). A typical contract is signed for 6 months or a year, and although the contract can be extended there is no guarantee of the future employment-situation.

Even though in the short-term, mining, in comparison to other local industries, provides a stable income the shortness of the employment makes it a risky choice in the long-run. It is

complicated to predict how long a certain company will be operating, and as in some areas of the Chatkal Valley people consider themselves dependent on the industry, withdrawals of the companies can have severe consequences to the economic status of the local population.

Mining-worker (Tereksay Village):

People here are mainly dependent on wage from companies, because we do not have fields of agriculture here.

Altogether, mining is unlikely to provide long-term permanent employment for the population of the Chatkal region, as mining is always temporary by nature. Interviewed companies predict the sites of the region to be active for to 5 or 10 years, some are described as being already at the end of their life cycle. This is natural in the mining industries, but even with great mineral resources, trusting the future solely on mining would be an unsound choice for the local population. This especially true considering that the local population perceives the current benefits of employment smaller than the total negative impacts of the industry (Socio-economic... 2011, 7-8). In general, sites are operating as long as they are profitable and the workforce is recruited on the basis of the prevailing need of the companies, as the following comment indicates.

Representative of an industrial mining company:

It is an ongoing issue, drilling companies do not operate on a territorial basis. Today contract can be here, tomorrow may be in Issyk-Kul, the next day in Sary-Zhaz.

4.2.2 Taxes and social contributions

Recently, the taxation of mining companies has been an increasingly discussed issue in Kyrgyzstan. At present, the position of local areas and regions with respect to tax-revenues is quite poor, as the local budget may receive only land taxes. Mining companies are mainly paying taxes to central government (Mazykina 2011), and thus, the development of the mining industry is contributing little to local development. To improve the situation and diminish tension at the local level, the Kyrgyz Parliament introduced an initiative on tax payments. According to a tax law amendment, 2 percent of the profits from sales should be allocated to local budgets. The amendment concerns exploration and production in the field, with local bodies of self-government having the freedom to decide how to utilize the money (ibid.).

Interview question: How much income from gold mining does come to the district?

Artisanal miner (Alтынbulak Village):

There is much gold in Chatkal. Gold is taken away from here, but the percentage from gold mined does not go the local budget of Chatkal.

Recently, registration of mining companies has also received attention at the local level and there are variable interpretations of these recent developments. Some profess a notable increase in the amount of local registrations, while others consider the changes merely cosmetic. Either way, to increase their power and become more aware of the company activities, local authorities have taken a more active role in local mining politics, and there is a growing tendency to push the companies to register locally. In the Chatkal Valley, the question of registration was discussed with companies in specific meetings, arranged by local authorities and experts, and as a result, some companies executed their local registration. Besides transparency, local registration has become an increasingly important issue for companies to obtain the social acceptance of a local community, and this is named as one of the reasons for registration. However, local authorities consider registration primarily a financial issue since it provides tax payments and social funds for the local district. Currently, Kyrgyz mining legislation does not ensure proper compensations for the local regions unless a company is registered locally, otherwise nearly all tax payments are allocated to the central government in Bishkek (Mazykina 2011). Local registration does not, however, guarantee that tax-income will benefit the local community. There are rumors of corrupt misuse of tax payments for personal purposes. Yet, local registration is thought to enable better access to information about the operations of a company and its financial situation in terms of profits and wages, this is considered more transparent and tends to decrease the possibilities for tax frauds.

Representative of an industrial company:

Last year, we re-registered in the district.

Interview question: Did someone insist on it or did you decide yourselves to re-register?

Representative of an industrial company:

Insisted but for us it makes no difference.

Interview question: What does the registration provide?

Representative of an industrial company:

It provides social contributions and taxes

Representative of an industrial company:

So it is difficult to monitor and verify all the financial information. So if a company is registered with a local authority, it will be easier to control the flow of funds...

Head of local authorities:

Social fund, taxes, they report us. If they are registered in Bishkek, we can not control them in any way.

4.2.3 Local economy and welfare

The mining industry benefits the local economy primarily through employment. In the Chatkal region, like in the whole Kyrgyzstan, agriculture and livestock are dominant livelihoods. Increased mining activities do not contribute to other sectors and there are no signs of mining creating direct benefits for local industries. Likewise, mining has not created extensive new industries for the region. In some areas of the Valley wild animals, especially snakes and turtles are being collected and sold to Chinese mining workers for extra income. Chinese workers also collect animals themselves to sell them, but these activities are not widespread. According to the interviewees, the economic situation of the region has been improved during the past five years, but unemployment remains a significant problem. Farming has been increasing; most households have a garden and they are engaged in agriculture. Potatoes, beans, and garlic are grown, but mainly for subsistence. In some areas, beans or garlic is grown for sale, whereas in others only livestock provide income. Still, for most locals agriculture and livestock are ways to survive rather than main sources of income. Food prices are described as being high in comparison to income-levels, making farming a cost-effective choice. Development of agriculture is limited mainly by poor logistics and lack of demand in the region. Additionally, in some parts of the Valley, like in Tereksay Village, the soil is unsuitable for extensive agriculture.

Artisanal miner (Altybulak Village):

We grow potatoes for ourselves, because it is difficult to bring them to Bishkek, Osh.

Worker of an industrial mining company (Tereksay Village):

We deal only with cattle. We keep sheep and goats.

Mining companies do not appear to increase the sales of local agriculture or shops. Groceries are mainly bought from bigger towns and increased mining activities do not reflect in grown demand for agricultural products, as there are no business relations between the companies and farmers. Indirectly, mining has a twofold impact on agriculture. The construction of roads for mining concerns can improve the possibilities for export of vegetables outside the region, thereby stimulating an increase in agricultural production. Also, in certain parts of the Chatkal region, environmentally friendly products are considered a growing business, and both locals and local authorities regard the mining industry as a potential hindrance to the natural image of the area. Moreover, environmental pollution may decrease prospects for agriculture. Environmentally speaking, the two industries have conflicting interests, since environmental impacts, such as air-pollution and dust, present a risk to agriculture. Locals thus believe that in the long-run mining will destroy the biodiversity of the area, even though rehabilitation would be adequately conducted. In this respect, mining creates great uncertainties for the future development of agriculture in the region. It must be noted that the impacts and risks of

mining are not similar throughout the region. As previously noted, the soil and other growing conditions for agriculture vary between the villages, with not all areas of the Chatkal region seeking to increase their agricultural production. Correspondingly, the opinions of locals vary and some people have dissenting voices. But in general, mining is not perceived as the single way to develop the area, but as a part of the future's diversified industrial base alongside of agriculture and tourism.

Worker of an industrial company:

People here are mainly dependent on wage from companies, because we do not have fields of agriculture here.

Head of local authorities:

the last 5 years, our district has developed: business, agriculture, and animal husbandry. The perspective of Chatkal is big.

During the interviews, one of the most frequently mentioned possibilities for the future development of the Chatkal region was tourism. For the moment, local authorities perceive tourism as the main income source of the region, although it is stated that the number of tourist is rather small. Nevertheless, Chatkal has beautiful environment with magnificent mountainous landscapes and there is potential for further development of tourism. Some actors would prefer the development of tourism over mining because they considered it to have a less significant environmental impact but in general, tourism and mining are not perceived as mutually exclusive.

Local environmental expert:

Comparing to gold, more good will from tourism and all will remain intact.

Mining is not thought to slow the development of tourism in general, only the development of ecotourism. In nature reserves, mining is clearly considered to have a negative impact. There is a willingness to explore the possibility for eco-tourism in the nature reserve areas, but if mining activities are located near the reserves, the development can be hampered. The idea of developing tourism in the areas of nature reserves is interesting, but there are administrative obstacles to overcome before it can be practiced in these areas. Furthermore, the prime function of nature reserves –environmental protection– could severely suffer if the focus is shifted to economic issues.

Mining also poses an impending risk for the large number of nomads in the region. Nomadism is a traditional way of life in Kyrgyzstan that it is still widely practiced although an increasing amount of nomads are adopting a modern lifestyle. The nomadic lifestyle is dependent on pastures and valleys, with the mountainsides of the Chatkal Valley grazed by their sheep and cows. In some parts of Kyrgyzstan, land-use issues between mining

companies and nomads have already emerged; mining can potentially destroy pastures, hampering the nomads' lifestyle. Conversely, based on the interviews, presently there are no land-use conflicts between nomads and mining companies in the Chatkal region. Compared to the Soviet era, the number of cattle in the region has decreased, thus there is a lower grazing pressure on the pastures so they are in better condition. Nevertheless, if the mining industry continues to develop and grow at its present rate in the region, it is possible that the interests of mining companies and nomads will conflict. This depends also on the number of cattle in

Of the possible influences of mining on local industries, those impacts on the environment were most clearly presented and most often cited by the local population as the most common negative impacts (Socio-economic...2011, 8). To allow development of additional industries in the future, mining should be conducted in a way that minimizes any environmental impacts. A degraded environment was clearly considered the most negative impact that could hamper the future of the region. Nonetheless it was highlighted that these days mining is an important industry in this region that suffers from unemployment therefore the potential environmental impacts contend with economic benefits.

Representative of local authorities:

Like I said, first we must save the environment.

Representative of an industrial company:

Of course this is a violation of environment, pollution, but not deadly work, there is income.

4.3 Direct social impacts

4.3.1 Workers and their conditions

The salaries within the mining industry are currently lower than during the Soviet period, which brings on dissatisfaction among some workers. The salary of a mining worker depends on the company and the qualification of the worker; some companies do pay additional bonuses. According to the interviewees, salaries range from KGS 7000 up to KGS 17 thousand (from around USD 149 up to USD 363) per month, so the range of the scale is wide. The wide range in salaries can possibly increase lead to confrontation between migrant workers and the local workforce, as local workers generally earn less than migrant workers. The differences can be explained through higher education, thus the better positions of migrant workers, who typically work as specialists. In general, the workers are not particularly satisfied with their salaries, but as trade unions are weak, possibilities for demanding higher salaries are slim. Miners stated that their salaries were low, and that all

their income is spent buying food and clothes. Nonetheless, compared with other local industries, like agriculture and cattle rearing, mining offers a reasonable income.

Local worker of an industrial company:

Everything we earn goes for food and clothes, no savings.

Compared with artisan miners, industrial miners are described as having relatively good working conditions, but the mining work in general is demanding. Workers are exposed to dust and physically demanding work over long shifts. With respect to labor-safety, Chinese companies are described, by locals, as needing the most improvement. The biggest health risk is working with inadequate and dated infrastructure; due to a lack of funding, some companies are working with Soviet era equipment. Nevertheless, mining can even have indirect positive impacts on the health of miners, as employment often prevents alcoholism and decreases other social problems.

Representative of an industrial company:

Due to lack of funding we have to work on old equipment. [...] But getting funding for new equipment is not easy.

Due to the harsh winter weather conditions, a clear majority of the companies only operate during the summer, making the work season quite intensive. For most companies, the miners work in two shifts, with each shift worker usually working 12 hours per day. The typical work rotation for a miner is fifteen days or a month, which is fifteen or about thirty days at work then the same number of days off. Migrant workers stay in trailers at the work sites, so their free time possibilities are poor.

Representative of an industrial company:

From 15 to 15, it turns into salary/day. 2 months of work here: in 1 month working 15 consecutive days, 12 hours on two shifts, in the 2nd month in the same way.

4.3.2 Additional benefits

The level of social security and healthcare that mining companies provide to their workers is rather low in general though there is a certain amount of variation between companies. Compared with the Soviet era, the current workers demonstrated a growing feeling of insecurity about their working conditions and workers' rights. Companies do not systematically provide their workers with healthcare nor do their contracts necessarily include social security benefits. Most of the larger companies provide their workers with free meals, but sick-leaves, pensions, and other social security systems ensuring the rights of workers are

underdeveloped. Trade unions do not have the capacity to pressure the companies to improve the situation and workers are in no position to complain. However, despite the many poor practices, a number of companies are providing their workers with rather good benefits, such as healthcare with free medicine, and compared with the general health care in the area, these workers can be considered to be in a slightly better position. In general, there are some healthcare services available for locals in their villages, but the poor financial situation can create obstacles to receiving treatment. Free or supported healthcare is not axiomatic for industrial mining workers, although some companies have compensations for sick leave and hospital expenses, but the practices differ greatly between the companies.

Worker of an industrial company:

Now no one looks after workers, in the Soviet Period they did.

Interview question: Don't your employees complain about their low salary, or they need for social help?

Representative of an industrial company:

There is no reason for complaint, because they work under the contract.

Worker of an industrial company:

In the Soviet period people employed in the mining industry had a high salary. Our pension is tiny, 3,000 thousand soms per month. Necessary to change the system of pension funds.

In addition to healthcare, some companies endow their workers with additional benefits. Normally, these benefits seem to be quite small; local workers report that companies help them with the transportation of hay, firewood, and other necessities, these gestures are occasional and unsystematic, but welcomed by the locals. Yet, not all perks meet their target as real benefits. An illustration of a failed perk was when a company provided their workers free accommodation in the company's summer cottage by Lake Issyk-kul. Since this lake is located in eastern Kyrgyzstan and the workers, at the Chatkal site in the west, had no real chance to utilize this benefit, since it was financially prohibitive for them to travel across the country to enjoy this free accommodation. Instead, they wished for an affordable grocery store in their village.

Educational opportunities in the region are described as non-existent and there are no real opportunities for the young generation to educate themselves in the Chatkal region. The young thus look for better educational and work opportunities outside the region; migration to China and Russia is described as being common. According to locals, the mining industry boom has not considerably increased opportunities for lower levels of education in the region, but there are some new possibilities; branch schools have been opened to educate locals for work in the mining industry, with launches of similar new schools planned. These schools

have official status to train students to be mining professionals. Funding comes mainly from the mining companies, who will benefit, as there will be more professionals available. Companies are also attracting locals to attend training for professionally demanding positions, but these training-programs are voluntary actions of individual companies, and are available only to a small portion of the local population. In general, the most visible support that mining companies are providing for the local education system are book and computer donations for the village schools. It is to be noted that the impacts of mining on the educational possibilities in the region are not all positive. New mining activities can be given precedence over other functions and even schools can be set aside because of mining development.

Representative of an industrial company:

Then a branch schools were opened to familiarize with the mining industry. There are the first results, every year 100 professionals graduate. Schools have official status, licenses. They prepare future workers for the mining industries. Training duration is one year.

Representative of an industrial company:

Near the plant there are 2 schools, kindergartens and other infrastructure that may be thrown out.

Mining is a significant employer in the Chatkal region, but it has failed to improve the working opportunities for women. Currently, the employment-situation for women in the region is very limited, since outside of household work, there are only a few jobs available. The opportunities are mainly in schools and hospitals. Sewing provides an income for a small group of women, but the industry is not extensive. Most local women are only engaged in household work. Increased mining activities are slightly improving the employment situation for local women, as they are not usually directly involved in mining, companies only hire them to work as cooks. The number of women working within the mining sector is very limited, as most companies only have one position for a cook per site.

Representative of an industrial company:

The main problem is jobs for women.

4.3.3 Mining community

The impact of industrial mining on the community-life of nearby villages is at the moment minor. The most visible influence can be found in local level power-balances. Companies are in many ways ignoring local communities in local-level politics and decision-making, as they often are incapable of taking into consideration the interests of the local population.

In general, local communities appeared as somewhat united. However, migrant workers usually seem to form their own small community and interaction with local villagers is described as inconsequential. This is natural, considering the intensity of their work. Workers are mainly staying in trailers on the work sites during the working season, but local workers living nearby can also commute between the mining site and their village on daily basis. Chinese workers are noted to have the least interaction with local communities, while workers from the Chatkal region are more active. The Chinese miners are known in the area for being hard-working and focused on their job, so in this respect it is not unexpected that they are not engaged in the local life. On average, the relationship between the locals and especially Chinese companies appears detached, as everyday communication and interaction is missing and the interaction is primarily based on arranged meetings. Similarly, interaction between companies is minor.

Representative of an industrial company:

At present they [Western companies] are engaged in exploration work. Representatives of western companies visited our region, so they work next to us, but do not communicate with us.

Representative of an industrial company:

In terms of work these fellows [Chinese] are good, work around the clock.

Interview question: In Chatkal, namely in the valley, there was only the Tereksay mine. Now there are 2-3 large companies, foreign and state, and there are small-scale miners. These companies of different ownership, Chinese, local Kyrgyz, etc.. How do they interact?

Representative of an industrial company:

There are no interactions.

From the cultural perspective, the impacts of the mining industry are related to the identity, traditions, and lifestyle of the local population. Miners themselves do not seem to have caused major changes to the local culture. This is the most likely due to the fact that miners from outside the region have been described as having only slight interplay with the villages. Regardless of the separation between migrant miners and the local community there is no confrontation between the two groups. Cultural impacts of mining activities depend on the history of the area in question; villages with long traditions of industrial mining are considered to be less influenced by a new boom. Conversely, in areas where mining is a new industry, companies have said that the local community's adaptation to the situation takes more time because the population is not familiar with the character and practices of the industry. In Chatkal, artisanal mining was widely practiced in the 1990s, and during the Soviet period industrial mining in the area was extensive, therefore the local population has practical experience with mining. Yet, agriculture has been the dominant activity in the whole

region and the local population lacks basic knowledge of mining and its impacts. This lack of knowledge compounds speculations and rumors, ever increasing distrust and resistance, as people's lifestyles are facing growing changes on a daily basis.

Representative of an industrial company:

In Chatkal people since the Soviet-era have seen the mining companies working, they worked themselves... Here [Chatkal] people are more tolerable, because people have been involved more in mining.

4.4 Environment

4.4.1 Environmental impact

Among the locals, mining on average is perceived as an environmentally harmful industry and mining activities are accepted as long as they are considered to be respecting environmental standards. The biodiversity of the area is believed to suffer both directly and indirectly due to mining activities. The fauna of the region is being impacted by emerging illegal poaching business. Chinese miners catch exotic animals to sell them to neighboring countries, and thereby are affecting the wildlife populations of the area. Even though the locals have not presently noticed changes in the environment of the area, they believe that in the long-run there will be massive environmental degradation in the region, even after mining companies conduct rehabilitation.

Worker of an industrial company:

Then, local elders have said that we could work here, without violating the environment.

Worker of an industrial company:

probably after 10 years here will be nothing, everything [biodiversity] will be gone. We will have to live here anyway.

While the local population reckons that mining will severely impact on the environment of the region in the long-run, mining activities are not considered to have a negative impact on the landscape of the region. Currently, the locals have perceived no visible signs of degradation to the environment, in fact, the condition of forests and pastures are described as having improved over the last 10 years. Concerning the wildlife-populations of the region, the workers of a nature reserve in Chatkal warn that a growing amount of mining activities can gradually impact on the number of animals.

Local worker of an industrial company:

We have not noticed the changes in nature. There are some changes in climate, including snow, there is less or no snow at all.

The main issues concerning the environmental impacts of mining in the Chatkal region are clearly related to the road infrastructure and quality of water. These two themes often came up and were identified by all actors; representatives of industrial companies, locals, and the local authorities. Similar results were found in a study, also examining the impacts of mining in Chatkal area (Socio-economic status...2011, 14). With respect to roads, two main themes emerged, the construction of roads and air pollution. From the locals' perspectives poor air-quality is a particularly serious issue. Mining activities have increased the traffic in the region and heavy trucks are inducing a significant amount of dust to rise from the surface of the roads. The impact extends to all areas near roads, and especially of concern are houses located near the road. Attempts to prevent limit the problem include hosing the roads and some companies have made plans to asphalt crucial sections.

Local (Tereksay Village):

Because you see a dirt road, if you count, at least, at night on the road more than 100 vehicles pass. I live there, you come home and its all dusty because of the road.

The greatest environmental problem related to the mining industry is water. Water-issues around the mining industry are focused on speculations about pollution from the sites. Along with accusations about contamination of the local rivers by mining companies are demands that the companies provide clean water for villagers. Water is a significant issue in the region; there is no plumbing, and usually a whole village is dependent on the water of a single river. In placer gold mining, the impacts on water ecology are greater than for the companies dealing with underground deposits. Generally, placer mining frequently affects the clarity and color of water; local communities believe both changes to be a consequence of the use of toxic chemicals. Although there is no proof of water contamination, mining is affecting the local population's use of water from rivers, because of their unsupported conclusions that changes in the appearance of the water equate to increased toxicity. In general, all environmental impacts reported by the local population are not to be taken for granted, however it has been noted that environmental impacts can be exaggerated to raise more resistance to the industry (Bogdetsky 2011a). Whether the impacts are real or not, they are increasing locals' distrust of the companies and accurate information on the hydrologic environmental impacts of the industry need to be made better available to the local population.

Representative of an industrial company:

Another problem - water. Licenses should not be issued in water-protection zone.

Scandal begins from that. Many firms are located in the water protection zone.

People are not provided with clean water, no plumbing.

Positive impacts of increased mining activities in the Chatkal region are principally related to the constructed environment, whereas the impacts on the natural environment tend to have more of a negative character. Mining companies are constructing roads and improving the condition of the existing road network, which increases the access possibilities of the local population. From the social perspective, a better road infrastructure can prevent some social problems for a local population. During the winter there is no access to or from the Chatkal Valley because heavy snow blocks the roads. Locals have stated, that current social problems such as alcoholism, occur especially in the winter, as there are no activities for the people. Access to better options for mobility could potentially prevent these problems.

4.4.2 Environmental issues –a challenge for governance

At the local level, the environmental impacts of mining in the Chatkal region are a challenging issue, because, in addition to general concerns over water and dust, there are many unsupported rumors circulating among the local population. The influence of these rumors should not to be underestimated, they can cause fear and insecurity among the local population, further increasing resistance to mining. Access to accurate information is vital to prevent rumors, but it is not self-evident that information alone is enough to prevent unsupported fears from developing in the local population.

Representative of an industrial company:

They said that because of our exploration all the trees are dry, no frogs left, etc.

Our company carried out environmental monitoring, samples were taken, there was nothing threatening.

The problem has been identified by local authorities, who point out that there is a strong political aspect to the environmental arguments of the locals, and therefore they are not to be treated without qualification. In general, from the perspective of the local authorities the most important environmental themes are similar to those identified by local people and representatives of industrial companies. Roads were concluded to be the most essential theme with the other major concern being water-quality. The chief focus is on the more general level impacts, highlighting the importance of ecology across the board and examining ways to maintain the ecology of the area.

Interview question: Of all the issues what do you believe to be most essential for the sustainable development of the region?

Representative of local authorities:

Ecology.

On average, local authorities are contemplating environmental impacts more at a concrete level than is the local population. Reclamation and managing tailings, as well as environmental pollution were all considered the most essential themes. Inadequate technology can hinder proper reclamation, with the technology used in mining varying greatly between companies. Some companies are forced to work with equipment dating back to the Soviet period, while others work with more modern technology. In general, inadequate, or the lack of any land restoration is considered a major problem by local authorities and environmental experts (Socio-economic...2011, 25–26).

At the local level, the environmental picture appears confusing, and local authorities see shortcomings in the environmental monitoring of mining companies. The disorganization of government authorities, with its changing division of labor between the authorities, creates challenges for companies' monitoring efforts. Authorities state that their supervision is now more difficult than during the Soviet period, also due to a lack of adequate technology and sufficient funding. Nevertheless, the authorities trust that "up front-supervision," of environmental impact assessments will at least partially fulfill the gap in monitoring. Even though the local population and authorities are the ones suffering from the environmental impacts of mining, they are greatly dependent on the actions taken by state authorities and legislature. The unexpected revoking of a license by state or national government can have severe negative impacts on the environment, because in these cases, after the company has withdrawn, there is no actor to be held responsible for problems with tailings. Of all the companies interviewed, none had dealt with problems from past tailings sites. This suggests that in order to prevent situations resulting in untreated tailings in the future, administrative changes are needed to clarify the distribution of liability.

Representative of an industrial company:

Due to lack of funding we have to work on old equipment...

Representative of local authorities:

Mining and exploration companies have a draft of assessment of impact on the environment and they all have passed environmental impact assessment. For all the objects they have received a positive conclusion.

The problem of inadequate monitoring of the operations of mining companies is not to be underestimated. A lack of monitoring can lead to severe violations of environmental

regulations by companies looking for the most profitable deposits. A case supporting this point is an incident that took place in a nature reserve in the Chatkal region in March 2011. A mining company entered a reserve area and operated illegally within this protected zone. A complex chain of events involving competition over this area was behind this violation; the final result was that the violated area was allocated to the company, with the reserve being given an alternative area in compensation.

Representative of a nature reserve:

In 2004, the license of this territory by government decree was issued to ZAAV Chaarat, but in 2006 the area was transferred to the reserve. They wanted to sue, and then just justified.

The nature reserve incident illustrates the central problems with mining development in Kyrgyzstan. Local authorities do not have the capacity to supervise the activities of the mining companies. Likewise, the legal framework and its implementation with regard to environmental protection and mining are not adequate to protect the environment from harmful mining impacts. A mining company violating the area of a nature reserve is a concrete example of the extreme actions of some mining companies. The future of environmental protection in Kyrgyzstan facing powerful mining development raises many questions.

Representative of the Nature Reserve:

In the reserve there are places where you can get gold. Maybe in 5 years, this area can be withdrawn from us. The company's activities could adversely affect the environment and human health.

4.4.3 Recreation values

Concerning recreation values and tourism, the interviewees did not consider the environmental impacts of mining to play a role at the moment. At present, tourism is underdeveloped, although in Chatkal it is perceived as being a main source of income. The positive aspect of this perception is that the local authorities of the region do not perceive mining as the only way to revitalize the economy of Chatkal, and, at least in principle, they acknowledge the importance of environmental protection. When examining the future development possibilities, tourism does have huge potential, but in order to secure any of these prospects from tourism mining practices need to respect environmental values and standards. No peculiar changes in the landscape of the region due to mining activities have been reported by the locals. Mining sites are accepted as a part of the landscape and since many of the sites are located high up on slopes they cannot be seen from the villages.

Representative of local authorities:

In my opinion, our main source is tourism. But tourists are few.

Representative of local authorities:

The perspective of Chatkal is big. Like I said, first we must save the environment.

4.5 Corporate responsibility

4.5.1 Fragile community-company relationships: complex communication

Company-community relations in the region of Chatkal are characterized by instability and continuous change. Shortcomings in the communication and participation-possibilities of the local people play a significant role in the situation, where instead of moving towards mutual understanding, companies and local communities are descending into open conflict. Enough accurate information about mining in general is not available to the local population, so people are generally unaware of the real impacts of the mining industry, thus speculations are gaining ground. Companies ought to provide the locals with basic information on the different stages of mining, and inform them beforehand about upcoming activities. They should build this relationship of communication with the local community as soon as possible, since timing is essential to develop a positive company image (Joyce & MacFarlane 2002, 19). There are a growing number of planned and ongoing mining activities in the Chatkal Valley and in recent years all areas have experienced some false promises and withdrawals of companies. For this reason the trust of local communities, as well as the social license to operate is becoming increasingly difficult for the mining companies to obtain. The image of a single company is not dependent only on the actions taken by that company itself, but also on the actions taken by other companies in the same industry, especially those operating in the region. The background and ownership of a company matters also to the attitudes locals have towards it, for example, in the Tereksay Village, foreign companies are looked upon with more suspicion, while there is hope that state-owned companies will increase their presence in the area. In general, the relationships between mining companies and local communities are tense, and there are various socio-political, as well as environmental issues behind this multifaceted problem.

Local worker from an industrial company:

Investor is needed. For 10 years that I've been working here, there have been 15-20 investors, they explored something, spoke, but nobody did anything eventually.

Interview question: What happened and why they do not invest?

Local worker of an industrial company:

I do not know what is their problem. Coming both Chinese and Russians. But still no one have started investing. Maybe someone create obstacles for their job?

Mining companies are informing the local population about the effects of mining mainly through public meetings. Companies are aware of the importance of interaction with the local community and most companies have a specialist responsible for public relations. In addition to these arranged meetings, locals also have access to information about mining activities and their impacts from newspapers. Nevertheless, from the local perspective, there is not enough information available, and mining companies are expected to be more active in the promotion of their operations. According to a recent survey, fewer than 10% of the locals are satisfied with the level of information provided (Socio-economic...2011, 10–11). The younger generation is particularly unfamiliar with the industry and its practices. The problem, as such, is not only the amount of information, but companies ought to focus more on when and how the information is provided. Locals need to be better informed before operations, especially at the very early stages of a company's operation. Currently, companies are increasing their communication with the public as their operations go forward, when it would be more efficient to invest in relationship-building before and during the beginning of their work.

Representative of an industrial company:

If public hearings could be held earlier, it would be good, to hear the views of companies.

Besides access to information the reliability of the information provided is problematic. The impartiality of information provided by companies is sometimes quite strongly questioned by locals who feel betrayed and misused by the companies. Environmental impacts are one of the debated issues; the local population fears that companies are trying to cover up environmental pollution and that the actual impacts of mining are much more widespread than the companies suggest. This situation can cause insecurity and concern among the local population as previously discussed issues with water quality illustrate. Altogether, whether it is the accuracy of the information or access to it, if a local community considers that a company has been neglecting them, then repairing the situation is difficult.

The significance of open discussion is highlighted by companies and the local authorities, with public meetings being an attempt to encourage free discussion and dialogue. However, occasional meetings are not enough to ensure a sufficient level of information is provided. Further, the prejudices of the locals often hamper the work of companies, and results will more likely show only in the long-run. In addition, the turbulent situation in the neighboring Talas region is followed closely by the locals of Chatkal, which has an influence on the development of the industry and the attitudes of the Chatkal population. Regardless of the current situation, increasing the possibilities for local participation in company processes, as well as promoting open dialogue and close cooperation at the local level are vital tasks for the construction of a more stable community-company relationship.

Representative of an industrial company (concerning the Talas region situation):
The community will no longer believe the foreign companies. It was offered to the public: you compose your program that you want, we'll take it, discuss it. Then the company will consider it and give an answer what may or may not be done. And then we all will stick to this plan. In principle, we kept going that path. But then there was no dialogue. One day geologists arrived, and there was a crowd, and did not let them work.

Representative of an industrial company (concerning the Talas region situation):
Then I went to meetings with the public, they asked questions. But they did not listen to my answers.

4.5.2 Poor possibilities for participation on the local level

Members of local communities feel that they lack opportunities for participation in the decision-making of mining activities. Officially, the locals have only a few possibilities to influence mining activities and the development in their living-environment. Licenses for mining, as well as other legal instruments are handled in Bishkek by state authorities. Environmental impacts and their poor possibilities for participation in their prevention is one of the most visible issues facing locals. Environmental monitoring is inadequate, with authorities relying on companies to adopt good practices. In cases of environmental violation or pollution, since the official methods for influencing the situation are limited, the most powerful way for the local population to influence the situation is through direct action, in the form of resistance, like road blocks, that pushes the companies for better practices.

Interview question: What about road closures, it is most likely a copy of the other options?

Representative of an industrial company:
This is a tool that government can not stop.

Representative of state environmental monitoring:
The procedure is that it is virtually impossible to catch companies when they are polluting rivers. When we get permission to check an enterprise, we must warn him of our arrival.

Recently, the direct possibilities for local populations to influence the development of the mining industry have not improved. However, there are positive signs of increased power for the local authorities. This change is not a result of administrative changes, but gradual, grass roots level work conducted by local authorities. The relationship between mining companies and the local authorities has been problematic and somewhat distant, but the situation is

changing. From the company perspective interacting with the local authorities is still perceived more as an inconvenient necessity instead of as an opportunity for cooperation that will reduce their operating outlay, this is reflected in their communication and activity. Mining companies sometimes present themselves quite passively and recently, it has been the local authorities who have tended to be more active in building relationships.

Question from village leader of lowest level administrative unit [ayil okmotu (AO)]: What is the company's relationship with ayil okmotu?

Representative of an industrial company:

Tereksay and Alabuka AOs come and check."

Head of local authority:

Bishkek decides about licenses. From my experience I can say that it is necessary to communicate closely with local authorities. But we will try, moreover the Ministry of Natural Resources helps us .When the company comes here, we will hold a meeting.

With respect to environmental issues, the central authority in Kyrgyzstan until 2012 was the Ministry of Natural Resources, but currently it is the State Agency for Subsoil and Mineral Resources. This is the organization responsible for monitoring the activities of mining companies; this includes conducting inspections of the companies. The local population has influence on these inspections, through written complaints to the district administration. Locals can thus express their concerns and report environmental violations by mining companies. Nonetheless, as discussed previously, the real influence of these inspections is minor, as the procedure is long and complicated and companies must be informed beforehand. For this reason, authorities find it difficult to catch a company committing any violations; this monitoring-system should therefore be developed. The conceptions of the situation between authorities and company representatives varies, with confusion about leverage and responsibilities concerning environmental issues and access to information (Bogdetsky 2011b).

Interview question: Does the local population have the right to stop the activities of the company if the company does not provide any social support and violate the environment?

Representative of an industrial company:

People according to the law has no right to interfere. Because the company received a license, provide the documents.

4.5.3 Social responsibility – the locals’ growing expectations

The dialogue between mining companies and local communities in Chatkal are culminated in the social demands made by the locals. These demands concentrate on social contributions, including renovation of schools, reconstruction of roads, and providing clean drinking-water. The demands are emerge from a feeling that the local community is misused and even exploited. Economic contributions to the local community are poorly secured by law, and the most direct and visible benefit of employment currently does not fulfill the hopes of the population (Socio-economic status...2011, 9). Furthermore, a number of local people see the mining industry inducing more negative than positive impacts on the local economy, environment, and society (ibid., 7–8).

Although the locals do not have tenure for the land mining companies use, they do have and express a strong emotional relationship to it. Thus, any exploitation of local resources is expected to provide compensation to the local community. In addition to this premise of the commons, the demands are more and more justified by the overall social problems of the country. After two revolutions there is growing disillusionment with the government, as it is unable to provide anything but the most basic social services. Local authorities see that for any further socio-economic development of the Chatkal region, then reconstruction of roads are essential, but despite many promises, the government has not asphalted the roads of the region. The revolutions have exacerbated the situation: the promises of previous government are neglected as new government has stepped forward. The population of the Chatkal region has little trust in the government taking responsibility for solving the issues of the region; this reflects in growing demands on the mining companies, who then are expected to make the social investments the government is unable to. From the local perspective mining companies are perceived as powerful and rich actors, who have the capacity to conduct community development. Currently, the local population views mining companies as the single sector that has potential for making social development in the rural areas of Chatkal region.

Representative of an industrial company:

We held meetings last year in January, in March, with the local population, ayil okmotu. In the meetings the requirements of the population in the form of providing clean drinking water, construction of the road were discussed.

Representative of an industrial company:

Before we came, many people had worked here. 10 years ago Kyrgyzaltyn worked here. Then another Chinese company, but the people drove them away and did not let them work. They threw technique and left. Last year, when we arrived, began to communicate with the local population, conducted the meeting. They expressed their demands. We told them that we did not mind helping them.

Interview question: Who, do you think can help improve the road situation - donors or the government?

Representative of an industrial company:

If there will be many mining companies, they will do it. And if not, then nobody will.

Like the demands of the local population, the responses from companies are also diverse. In general, companies try to respond to local wishes and are willing to compromise. Companies see that by agreeing to invest in community development they are better accepted and welcomed, thus social contributions are becoming a more integral part of their sphere of operations. For companies, social contributions can be a way to prevent local resistance and build a positive image, whereas from the local viewpoint, social contributions are becoming more a requirement for extracting local resources. The most typical contribution is the construction of roads, which improve transportation possibilities and especially of the supply of groceries. Companies have also repaired bridges, assisted local communities in purchasing building materials for repairing schools and taken part in other practical projects. Even though most companies tend to cooperate, sometimes the discussion of demands is colored by misunderstanding, so there can be a great contrast between the locals' and companies' perception of the situation. It also needs to be noted that not all companies are equally willing to cooperate with the local community.

Representative of an industrial company:

Our prospect at this time is a bridge. As for less important, this year we promised to help with renovation of kindergarten, according to their calculations will take 50-60 thousand soms. This year we brought 10 computers to school, purchased toys for kindergarten.

Local citizen (Tereksay Village):

They promised to build the road in March, starting from the settlement to end, and they promised to build a road in the Kyzyl-Tokoy. 2 months have already passed.

In general, the demands from the local population towards the companies seem to be constantly increasing, and dissatisfaction towards the companies is becoming more common. In some cases companies think that these demands are exaggerated. Generally speaking each company has its own way of dealing with social demands and their limits on investments are likewise case-specific; all companies do not commit to social contributions even though the pressure is high. Despite local criticism, mining companies do improve local infrastructure and invest in local development to some extent. Furthermore, although the situation is partly a result of intense pressure from the locals, through their community development these

mining companies are currently taking on a portion of the role of the government in the rural areas of the Chatkal region.

4.6 Society

4.6.1 Upheavals in a changing society

The mining industry is currently facing increasing and deepening resistance at the local level. Local communities are taking a more active role in defending their rights and living-environment, with forms of resistance becoming more aggressive. This is despite the fact that in recent years, mining companies appear to have sought to cooperate more closely with the locals, and they are benefitting the local economy through employment. The current state of affairs is not simple, and there are various factors behind this; Kyrgyz society has experienced many rapid political changes in recent years that have had an impact on the general atmosphere of the country, especially increasing frustration with government. As well, in Chatkal, locals are disaffected with the government and the overall circumstances in the region. Increasing mining activities are raising the hopes of local people for rapid development of the region, but as the reality fails to fulfill their desire (Socio-economic status... 2011, 14–16), frustration and disappointment are turning into resistance. Conflicts have their roots not only in environmental issues, but also in the socio-political problems of the region and the entire country.

Representative of local authorities:

It is necessary to work with people. People after the revolutionary events has become more democratic, but also more aggressive, and a feeling of distrust has appeared.

Representative of local authorities:

District is politicized, there are few people, everyone knows each other, discuss all of the information.

Mining has become a largely politicized issue with multiple parties and interests. This is reflected in the discussion and atmosphere between companies and local actors, and better information and communication alone will not ensure a peaceful future for the local communities and companies of Chatkal. The locals have poor possibilities for participation in mining industry processes and development (Honkonen 2011). The negative attitude to mining is leading to a single medium of expression that locals know cannot be prevented; they are expressing their opinion through road blocks and other forms of direct action. There are various reasons for hostility to mining; some locals even admit that the actual target of their resistance is not the mining industry, but the Kyrgyz government. The current situation

exemplifies the unstable political situation of Kyrgyzstan in the dynamics of the local level politics, with the locals becoming more active and aggressive.

Interview question: Is your protest more against the government or mining companies?

Local citizen:

basically demands to the government.

Interview question: And when did they start to block roads, are there common dates?

Representative of an industrial company:

After the incident at Kumtor and after the revolution.

In general, the political aspects of local resistance should be acknowledged, as it seems that the politics related to mining are growing. Outwardly local resistance might look fierce, but it does not necessarily always rise solely from local dissatisfaction; there are also speculations that companies utilizing local resistance for their own purposes in intercompany competition. At the same time, environmental concerns are in some cases misused for political and other purposes by locals (Bogdetsky 2011a). Environmental problems are well established on the agenda and their importance is being better acknowledged. Unfortunately, these environmental arguments are in some cases utilized by the locals to advance socio-political interests or to gain more social contributions. The discussion around the mining industry is by no means simple and there are hidden interests behind the arguments for and against further development.

Interview question: Why do people still use environmental arguments, for example, degraded pastures. Hasn't this been agreed with the locals?

Representative of local authorities:

It's a very politicized issue. We attend public meetings too but everything is very politicized. There are also personal interests there.

4.6.2 Towards community empowerment?

Local resistance to mining in the Chatkal region has been increasing, yet it should not to be labeled a systematic. The resistance that exists is most often unorganized, with not all locals sharing the negative opinion of mining. In addition, there are also differences between villages and areas within the Chatkal region; the specific historical and economic settings of the areas in question have major impacts on the attitudes of the people. In areas with a longer mining history people on average have more knowledge about the industry, making them

more receptive to new operations. The link is not straightforward, but according to company representatives it is easier to find a common path with locals that are used to having the industry in their immediate surroundings. Yet, previous negative experiences with mining companies can increase local resistance to the point that even despite economic benefits the mining in general is not welcome. Reliable communication with the local population that provides information about companies and their operations are an essential part of the prevention of future conflicts. Insensitivity to the mining industry, its practices and impacts, can be considered one cause of resistance, but it is not to be perceived as the single source of the problem. A feeling of misuse and betrayal together with the desire to take control over their own future are impelling locals to oppose mining companies in similar ways that they used towards the government. To ensure a more stable atmosphere at the local level, it is vital that developments include participatory rights together with alternative and additional industrial options other than the mining. Fortunately, most of the areas in the Chatkal region do not regard mining as the single option for their future development and mining companies should not create an impression that they are above the wishes and power of local communities. In order to decrease conflicts and to build common ground, the local community ought to be treated as an equal actor with other stakeholders.

Representative of an industrial company:

In some aspects, local people take the decisions.

5 Conclusions and results

The purpose of this research was to study the social impacts of mining industry in Kyrgyzstan through the case-study of Chatkal Valley and examine the industry from the viewpoint of social sustainability. The thematic analysis of the interview data illustrates a multifaceted group of impacts on the local community. The analysis indicates that in Chatkal region, mining has a positive impact on employment, whereas the negative impacts of the industry are mainly related to environment and the social atmosphere of the region.

The clearest economic impact of mining in Chatkal Valley is that the industry contributes to the creation of more jobs. However, the impact on employment has remained smaller than the locals hoped and from the viewpoint of social sustainability, the seasonal character of the work is one demerit. Another one is that taxes of mining companies mostly contribute to central government, instead of local development. This has caused registration of companies to draw more attention in Chatkal Valley and the local authorities to push local registration, as it provides better tax payments for the local budget and more information about the registered company for the local authorities. The third drawback is that impacts of mining on local economy in Chatkal region are quite limited. The economic situation of the Valley has been

improving during the past few years but mining has not had a boosting effect on local industries.

Based on the case study, mining has a somewhat positive direct social impact on mining workers in Chatkal region. Stable income is considered the most redeeming feature of the work and compared with the local income level, mining provides good income. Nevertheless the local workers are not always pleased with their income levels. The extent of additional benefits the companies provide their workers with varies but in general, the workers have access to health-care. Regarding social security the situation is poorer and for example entitlement to sick leave is not axiomatic.

The interviews illustrate, that socio-cultural impact of mining industry on mining communities is insignificant for the moment. The impacts are greater in areas of Chatkal where mining is relatively new industry and the communities are not attuned to living nearby mining activities. However, if mining activities further increase they may have a negative impact on traditional, nomadic lifestyle.

The environmental impacts of mining perhaps appear the most complex sphere of this study. Water-ecology, the condition of roads and recultivation of mining sites were the most urgent and apparent issues concerning impacts on environment in Chatkal Valley. Water pollution from the sites, as well as dust from the surface of the roads due to increased traffic discomposes especially the local population whereas local authorities perceive inadequate recultivation the most alarming issue. Altogether, the interviews indicated contradictory opinions about the extent of environmental impacts as the local population considers public information on the state of the environment unsound. This sets a challenge for local authorities who are already struggling with the problems that poor environmental monitoring and lack of transparency is bringing about. On recreation values such as tourism and environmentally friendly agriculture mining has the potential to have a negative impact through environmental degradation but for the present there are no signs of this.

The analysis indicates, that much of the social impacts of mining and issues around them in Chatkal Valley are related to shortcomings in communication between local communities and mining companies. The relationships are fragile and outstandingly vulnerable to changes. On the one hand, the companies do not provide enough information for the locals and on the other hand, at certain point, the locals are not always responsive to the information available but take on direct action.

The local communities present multifaceted social demands for mining companies. These demands are rising from frustration, as contributions to local development have remained low and from the memories of the Soviet period as social contributions to local communities were extensive. In Chatkal Valley, mining companies have responded to demands and taken part in

projects such as the road construction and renovation of schools. These contributions are improving the infrastructure and of Chatkal region and at the same time they help the companies to get social acceptance among the communities. Notwithstanding the contributions, the opposing of companies has increased as local communities are striving for better status in decision-making. The empirical data of this research suggests that local communities are actually becoming more powerful in respect of mining development and companies are forced to take account of the opinion of the local population.

It is evident, that local resistance in the Chatkal Valley, as throughout Kyrgyzstan, has been growing and the results of this research demonstrate that there is an urgent need to resolve the issues that exist around the mining industry. At the same time, the complexity of the problem indicates that there is no single reason behind the conflicts, and that there is also no simple solution. There are many causes behind of the deepening local opposition to mining and although each setting is unique, but I propose that in Chatkal Valley, the following factors influence the emergence of mining tensions and conflicts:

- a poor economic situation,
- a weak state that is unable to provide extensive social services,
- a changing atmosphere with a rise in individualism combined with a transformation towards liberalism,
- poor participatory rights,
- unrealistic local expectations towards the industry,
- a struggle by local authorities and communities for a more powerful status in the decision-making processes,
- inadequate laws combined with weak governance and enforcement, and
- poor environmental monitoring that allows for rumours to develop about environment conditions.

In order to build economic and socially sustainable practices, the Kyrgyz government, mining companies, and local communities require the application of new approaches to the development of the Kyrgyz mining sector. Currently, none of the three spheres of social sustainability: environmental, social, and economic act as a mediator (Littig & Grießler 2005, 73) to reveal sustainable practices in Chatkal Valley, in addition the spheres are not treated as an ensemble that compliment each other.

Some measures have already been taken by the government to improve the distribution of benefits; an initiative on tax payments was introduced. According to this tax law amendment, two (2) percent of the profits from sales would be allocated to local budgets (Mazykina 2011). This initiative addresses the underlying problems of the industry, but alone, it is unlikely to resolve all issues, as more legal changes are required. Much will depend on the government that includes a new president, Almazbek Atambajev, and a new prime minister, Omurbek

Babanov. In question is their ability to stabilize the domestic policy to allow for the gradual development of civil society and the establishment and implementation of planned administrative changes. Until now, revolutions have aggravated the development of a working administrative framework; the work of previous government has been neglected as new government has stepped forward. In many respects, the growth of the mining industry without adequate laws and supervision has led to multiple negative impacts on society and the environment.

The mining industry has the potential to further improve the overall economic situation of Chatkal Valley, however, to increase the positive impacts of mining on local economies, the industry has to be better connected with local economies. This could be done, for example, by establishing business-relations with local agricultural concerns, which would integrate the industry more tightly into surrounding society. Now the mining industry is easily perceived as a lone wolf. Though the industry is mainly responsible for the economic development of the Chatkal region, and in spite of its social contributions, it is perceived by local communities as an actor that is neglecting their interests. Contributing to the development of local economies could also improve the situation of local communities after mine closures, making the communities less dependent on the companies, and thus, promoting social sustainability.

Resolving the social issues of the mining industry are essential to promoting stable and prosperous development of the industry, since growing local resistance is making investors withdraw from the country. Generally, the Kyrgyz government did acknowledge the need for the strengthening of government institutions in their Country Development Strategy (2009, 27). However, this Strategy totally lacked consideration of the social dimension of mining and the possible impacts of intense mining operations on the surrounding society. It also bypassed the emergence of local resistance, and it made no proposals for resolution of these social issues, or projected any consideration of the possible consequences of these social issues on the development of mining.

Policy measures to ensure equal distribution of benefits between the local and national levels, as well as to promote local communities' rights have been tangentially leading to conflicts with the local population. Moreover, based on the case study, it appears that this resistance is accumulating and developing from a situation of a few individual cases into a more common phenomenon. Thus, mining industry development today in Kyrgyzstan requires better cooperation between the state, companies, and local communities. Currently, due to many recent changes, the leverages and responsibilities of various authorities and government institutions, with respect to mining, are in many ways unclear and mixed. To enable more sufficient cooperation between not only the state and local authorities, but also local authorities and companies, responsibilities need to be clarified and regulation of issues, such as reclamation need to be established. Without adequate laws and environmental monitoring,

any intense mining development and aspirations for economic growth may be at the expense of the environment and social sustainability.

One of the key factors for the long-term success of global mining companies is the ability to reconcile their interests with the interests of the communities in which they operate (Esteves 2008, 39). On this account, the development of the mining industry in Chatkal Valley will require that community-company relationships play a central role. To stabilize the situation at the local level, mining companies should take a more proactive approach; they need to build their relationship with the local population, so as to inform the people about the company's operations throughout and beyond the lifecycle of a mine. Access to information should be improved, while also assuring the information provided is adequate in quality and quantity. Furthermore, companies need to establish a more interactive relationship with the local community, striving for dialogue and true cooperation instead of only contenting themselves with a one-sided conversation, where they are the provider of information. Successful communication, however, is not only the responsibility of companies, but also local populations should see the possible benefits of working together with the companies and seek to express their opinions through constructive criticism rather than confrontational forms of direct action. Any and all expectations of the local population towards the industry need to be discussed together with the mining companies. Moreover, frustration towards government needs to be directed to this actual target.

In conclusion, the civil society of Kyrgyzstan is getting more powerful, which is also reflected in local level mining issues; there are certain signs of community empowerment, as the locals are seeking to get more involved in decision-making processes. In this regard, the political and cultural impacts of the mining industry in Chatkal Valley can be connected with the country's wider transition towards liberalism. To enable further development of the mining industry in the country and to prevent tension on the local level, establishing up-to-date mining laws, a clear division of responsibilities for authorities, and sufficient environmental monitoring of the companies are required. Cooperation between all stakeholders together with the mapping of mutual interest should be promoted, with the local population being better informed about ongoing and upcoming mining activities. In order to attract investors in the future, actors of the Kyrgyz mining industry need to emphasize the importance of the social dimension; both government and companies ought to appreciate local communities more deeply as stakeholders, It should also be understand that social impact assessment is a tool that can provide valuable information on the impacts of the mining industry, by pointing out possible problems of future development, and therefore, aid in creating stable operational conditions for further industrial development.

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ATTACHMENTS

Attachment 1: Questions for topic interviews

1. Introduction

Few sentences as an introduction to interviewee

- to explain what the project is doing and to serve what purposes
 - who we are (the consortium)
 - how the comments will be used (full confidentiality etc)
- ⇒ these joint lines could serve all of us, and in some cases also as the interviewees will ask for the questions in writing (and translated in their own language)?

2. Background/context of interviewee

- Questions about interviewed people:
 - Instead of above question, how about:
 - Are you directly involved in mining activities in the area? Yes- no
 - If yes, are you employed /work for subcontractor/ sell produce or in other way in a financial relationship (Question needs reformulating, but this is the gist of it,
 - If no, what group do you represent: resident, local community, business, NGO, authority, politics (
 - Does the mining activities affect you in some way
 - on a daily basis /regularly/ occasionally/ no direct effect
 - How? Positive or negative effects?
 - Are there specific aspects of the mining activities that you are interested in in relation to local issues? Which ones? Why?
- What is your general opinion about the mining activities in the area?
 - is it generally speaking good or bad or both?
 - How do you see the values of mountains (cultural, environmental ...)
- What kind of benefits do you think mining brings to the area? Have you seen these already?

- What kind of problems has mining brought to the area? What kind of problems may arise?
- How do you see the relation between mining and climate change? Are there some threats?
- How do you see the future vision of mining in this region? Next 10 to 20 years?

3. Thematic and detailed questions

MINING ACTIVITY

- Is the mining company / artisanal / small-scale mining?
- If a company, is it international or domestic?
 - is this relevant to local issues if company is domestic or international? Why?

DIRECT ECONOMIC IMPACT

- **EMPLOYMENT:**
 - Has the mining activities brought employment to the area? How much?
 - Has some other employment or livelihood activity decreased/increased?
 - Are local people employed?
 - Is there a specific group of people who are employed?
 - If yes, in what type of work?
 - what type is the most important one?
 - If yes, are the jobs permanent or on short contracts only?
 - How much of the work force comes from other regions/countries?
- **LOCAL ECONOMY AND WELFARE:**
 - Do you think that mining activities help or hinder the local economy and welfare in other ways than through employment?
 - How?
 - Who benefits?
 - Who loses?
 - What type of other businesses – if any – has the mining brought to the area?
 - Are there any differences in how mining has affected various population groups or ethnic groups?

DIRECT SOCIAL IMPACT

- **WORKERS AND THEIR CONDITIONS:**

- What are working conditions for the mining workers?
 - Would you say the working conditions are good for the workers?
 - Are the working conditions for workers within the mining sector better or worse than for other employment in the area?
 - In what way?
- Has the mining brought opportunities for education?
 - To workers only or to their families also?
- Are they provided with health care? Workers of family also?
 - how does this compare with general health care in the area?
- What is their level of income when compared with other employment sectors?
 - How stable is the income?
 - Are there other benefits?
- Do women work directly for the mining company? In what role?
 - IF not, how would you describe the role of women in mining?

- **MINING COMMUNITY:**

- Do the mining workers live in the area? YES/NO
 - Do workers come long ways to work at the mining site (mobility)?
- Are the workers part of the local community or a separate mining community?
- Has housing and services have been organized for the mining workers? How?
- Do you think that the miners have changed the local culture? How?

ENVIRONMENT

- **ENVIRONMENTAL IMPACT:**

- Has there been in change in the environment since the mining started?
 - In what way?
 - If there have been any changes in the environment, how do you think this has affected the local people? Now and in the future?
- Has there been any specific problems?
 - with water? (quantity or quality)
 - with animals or plants?
 - how far way from the site?
 - Which is the biggest problem?
- Is there an environmental impact on nature /on the landscape? Good or bad?
- Has something improved? What?
 - what is the best thing?
- Do you think the technology used in the mining is good or bad? Why?

- **RECREATION VALUES AND TOURISM**

- Has the mining activities influenced local recreation values and/or tourism?
- If yes, how?
- How has the landscape changed?

- **LAND-USE**

- Has there been land use changes? Which?
- Has there been a change in the ownership patterns of the land? How?
- Has there been any issues with any changes in land-use patterns and land ownership?
- How has the land-use questions been managed?

RISK

- **ENVIRONMENTAL,**

- Do you think there are any particular risks to the environment from the mining?
- What kind of risk?
 - Water pollution /Ground pollution /air emissions
 - Is this a risk from chemicals used?
 - Is it a risk that comes from a change in the landscape?
- Has there been a discussion about such risk?
- Has any such risks already occurred?
- Are there any specific risks to the environment which local people have been worried about? Which ones? What do you think about these risks?
- Are there any environmental problems that could also be a security risk?

- **HEALTH IMPACTS AND RISKS**

- Have there been any signs of the mining affecting peoples health? How?
- Do you think there are any specific health risks to people?
 - To whom?
 - What kind of risk?
 - physical (e.g. from machinery, traffic, strains etc.)
 - chemical (e.g. from accidents from handling chemicals, long term impacts such as from inhaling chemical or dust fumes, sensitization, cancer, other chronic impacts)
 - Has there been a discussion about such risk?
 - Does the mining company tell people about potential health impacts risks?

- To workers?
 - To people living in the area?
 - What kind of information has been provided?
- **SAFETY AND SECURITY**
 - Do you know if there is a risk of something going wrong at the mining site?
(Safety level)
 - Fires? Explosions? Chemical spills?
 - How big do you think such an accident could be?
 - What would the effect on people and community be?
 - how far would such an effect occur?
 - Has anything happened?
 - Has the mining company told people about such potential risks?
 - To workers?
 - To local people?
 - About the level of risk?
 - About whom or what could be affected?
 - How do you think the authorities are making sure the safety level is good?
 - Do you think the mining company is using safe technology and methods?
 - Is there enough preparedness to handle a potential accident in the mine?
 - Has there been any discussion about whether an accident could affect the local communities?
 - Do you think that local people feel safety is a problem? Why?
 - Do you think local people feel security is a problem? Why?
 - Are there any specific concerns related to security
 - e.g guerilla, robbery, theft, terrorism etc

CORPORATE RESPONSIBILITY

- **PARTICIPATION AND COMMUNICATION**
 - Is there enough information available about the effects of mining?
 - How has this been made available? Is it accessible to the locals?
 - Has there been open and free discussion about the mining and its impacts?
 - Who has started this?
 - How does the mining company react to questions from the local communities?

- Are there any regular meetings or information sharing practices?
- What kind of good or bad practices you have seen and experienced?
- How can local people / residents / other businesses comment and influence the mining activities?
 - is this a good or bad way?

- **SOCIAL AND ENVIRONMENTAL RESPONSIBILITY:**

- How does the mining company or artisanal minors manage social and environmental questions?
- Do you think that they are responsible in their activities? Why?
- Has the mining company taken part in local social and community investments? Which ones?

SOCIETY

- **AUTHORITIES AND STATE REGULATIONS:**

- Do you think that state mining legislation is at the good level?
 - does mining require a license?
 - Is this a good or a bad thing?
- What about at the local level?
- Are the checks /inspections by authorities at a good level? What is important? What should be looked at more? Why?
- What is the role of politicians?

- **CONFLICTS**

- Have there been issues that has created bad feelings locally?
- Do you think there are any areas of the mining activities which could lead to conflict?
 - What type of conflict?
 - Why?
 - Who was involved?
 - What would help to decrease such potential?
- Has there been any actual conflicts due to the mining activities?
 - how do you know it was due to mining activities?
 - Are the health /safety or environmental concerns the more important or equally?
 - between whom?
 - about what?
 - Do you know why?
 - Where?

- Were they resolved?
 - Could these be prevented in the future?
 - How?
 - Are these conflicts local/ national /regional?
 - Are there any other conflicts in the area that could impact on the mining activities?
 - How? Why? Is this likely?
 - What do they concern?
 - Which actors / stakeholders are involved in these conflicts?
- **CONFLICT MEDIATION:**
 - IF there has been any conflicts:
 - Has there been any mediation attempts?
 - Where these successful? Why?
 - If there has been any mediations, can you tell more about what was done?
 - What type of factors / issues have had /could act to increase a conflict? Why?
 - And what can decrease them? Why?