

Original Research Article

The Social Impact of Mining Activities on Surrounding Communities in Lesotho: Case of Morija Stone Mine and Crushers in Morija

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Abstract

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The study was designed to assess the social impact of Morija stone mine and crushers activities on the surrounding communities of Morija. Primary data was collected through semi-structure questionnaires, focus group discussions and interviews from 50 local inhabitants, 1 local chief and 10 officials from both public and private sectors. Descriptive statistical techniques employing frequencies, percentages and means as statistical techniques were used. The results revealed that mining activities have not led to crime, prostitution and population growth and also has not led to employment creation, economic and business development, poverty reduction and infrastructural development. Concerning environmental impact, the mining activities have led to water, air and noise pollution which probably had health implications in the Morija community. Recommendations include adoption and implementation of corporate investment and social responsibility strategy and adherence to Global Reporting Initiative (GRI) framework.

Keywords: Morija stone mine and crushers, Environment, Socio-economic impact, Morija community

INTRODUCTION

Mining has had a considerable role in shaping human development not only from a technological perspective, but it has also significantly impacted on neighbouring and hosting communities where its operations have been carried out. When talking about social dimensions of mining, various different perspectives that create and shape social landscapes need to be considered (Opoku-Ware, 2010). The attention towards these issues increased significantly in the last 10 years with the way the mining industry impacts on local communities where it operates and how communities see these impacts being seriously challenged. Widespread community demands for relevant, direct and sustainable benefits from mineral wealth have been identified as a very recent

phenomenon (Petrova and Marinova, 2012) to which companies and governments have to respond in a suitable and satisfying fashion. The whole process of incorporating sustainability views into the development perspectives and companies' policies influenced a significant change in how the industry operates and impacts on local communities and respectively how social impacts are generated.

In recent times, the balance has shifted as ideas about corporate social responsibility and sustainable development have been largely espoused and has generated considerable interest on the impacts of mining activities if sustainable development is to be achieved. At the global and national level, leading mining companies have now formally embraced the paradigms of sustain-

able development, corporate social responsibility and „triple bottom line“ reporting, with these paradigms defining the community obligations of companies quite broadly and stressing of the need for mining companies to improve social, as well as environmental performance of their operation on the indigenous communities where they operate (Brereton and Forbes, 2004).

Major mining companies are now making strides in aligning their reporting practices to the Global Reporting Initiative (GRI) framework which requires that companies provide a description of policies to manage impacts on communities in areas affected by activities, as well as description of the measures to address this issue (Brereton and Forbes, 2004). But even in view of the many efforts by mining companies to make their activities „sustainable“, the World Rainforest Movement (2004) argues that such moves are attempts in futility since the activity is based on the extraction of non-renewable resources whose impacts go far beyond what people normally understand as unsustainable.

Social impacts are in general understood as “the consequences to human populations from any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society” (Burdge and Vanclay 1996). They can be both positive and negative. Negative impacts are those that limit or retard human development (including long and healthy life, acquiring knowledge and sufficient access to resources to ensure a basic standard of living) while positive impacts are those that further social and sustainable development (Uglow, 1998; Petrova and Marinova, 2012). Some impacts can be perceived or felt differently – they can be positive and negative at the same time, depending on which segment or aspect of the studied entity they refer to.

Social impacts occur throughout the entire lifespan of a mining project – from the time it is proposed, throughout its different phases and after its completion or the close down of any operations. Whereas ecological and physical impacts do not occur until there are any specific alterations of the environment, social impacts can be identified as soon as any new information, including very preliminary, is available (Gramling and Freudenburg, 1992). These could involve speculations about property prices, formation of various groups of interests, opposition and protest concerns, investment and economic activities as well as rising unrealistic hopes and expectations. Social impacts evolve, change and transform further throughout the duration of project and continue long after the development or the activity has ended (Petrova and Marinova, 2012). By using a specific case study, this paper reflects on the social impacts of mining carried out by Morija stone mining and crushers in the small community of Morija in the Maseru district.

METHODS AND MATERIALS

Study Area

The study was conducted in Morija which is a semi-rural area located about 40 kilometres from the Lesotho capital. The population of this area is around 2000 people and there are worrying levels of unemployment in this area. The main source of livelihoods is small-scale agriculture and the retail sector dominates the economy (Bureau of Statistics, 2016). There are mining activities taking place in this particular semi-rural area in the Matsieng electoral constituency.

Data Collection

Semi-Structured Interviews were used to elicit information from indigenous people about how the activities of the mining company have impacted on them socially and environmentally. Also, the Focus Group Discussions were used in order to investigate the views on the activities of the mining company in the area and how they perceive the impacts of mining activities on their lives since operation began, focus group discussion was a very useful method of ascertaining such general views of the local people. These discussions were held with officials from the ministries of environment, energy, water affairs, agriculture and food security, and small business development. Some chiefs were also interviewed in this study.

Sampling

Simple random sampling was used for this study, whereby the households that were selected for the interviews were randomly selected because the residence pattern of Morija made it quite easy for the researchers to enter into houses and interview them easily. Of a population of about 200 households, 50 were involved in the survey. The area chief was also involved in the study. About 10 respondents were chosen randomly for participation in the Focus Groups and they included mainly officials from government ministries such as that of environment, energy, water affairs, local government, agriculture and food security, and small business development as well as the private sector.

Data analysis

Descriptive analysis was used whereby frequencies, percentages and means were used as statistical indicators. Other relevant statistical techniques such as chi-square tests were used when appropriate for the

analysis. Explanations of the analyses were done qualitatively and quantitatively.

RESULTS AND DISCUSSIONS

The section presents and discusses the empirical findings and it is divided into two sections with the first focusing on the social impacts and the second focusing on the environmental impacts of Morija stone mine and crushers mining activities on the Morija community.

Socio demographic characteristics of the respondents

Education

Forty nine (49) percent and 32% of the respondents had attained secondary and tertiary education respectively and almost half of the respondents with tertiary education had attended technical institutions implying that they included among others artisans, technicians and engineers which are mining related professions. All these imply that majority of respondents were able to observe, understand and analyse the socio-economic impact of mining activities on the Morija communities. It could be argued that these respondents were able to give a critical account of the situation in an objective manner.

Years of residence in the community

Around 75% of the respondents were above the age of 45 years and about 90% of the respondents have been residing in this place for more than 35 years. Most of the respondents indicated they were indigenes of the community implying that they were "born and bred" in the community and have grown as residents of the community. This indicates that they were familiar with and knowledgeable of the environmental and social issues in the community before and after the start of the Morija Stone mine and crushers' operation. Based on these, it could be argued that they were able to give a comparative account of the situation in an objective manner.

Social Impacts of Mining Activities on the Morija Community

Mining and employment creation in the Morija community

About two percent of the respondents indicated that some of their family members were at one point in time employed by the mining company. Nevertheless, they

indicated that the jobs were of low grades that did not require any educational qualifications. The remaining (98%) respondents indicated that none of their family members have ever been employed by the mining company despite them mostly possessing mining related qualifications and experience. In addition, there was only one person (vendor) selling food at the gate of the mining premises. These indicate that the mining activities in the Morija community have not created jobs (direct/indirect) for the people and that is against the conventional expectation that mining activities generate employment for the local communities. The explanation for the scenario was that the mining company used capital extensive methods hence low numbers of people employed. Furthermore, the respondents stated that social networks played a role as only the "socially connected" people get the available jobs.

Impact on poverty levels

Around 80% of the households indicated that none of the household members were employed while the remaining (20%) respondents indicated that family members were employed as gardeners, domestic servants, night watchmen, taxi drivers and conductors and other low paying jobs. All the respondents opined that the start of mining operations in the area has not resulted in poverty reduction among households as 60% of the respondents rarely had two meals a day while 15% and 25% had one and three meals a day respectively. The respondents indicated that the Morija community is living in abject poverty despite the mining activities in their midst. For Morija, poverty has been worsened by the increased transformation of such an agrarian community into cash-based that requires that people spend more money in order to obtain their basic needs to which most of the people do not have due to lack of employment and the degradation of the arable land observed in the area in the last 20 years (Ministry of Agriculture and Food Security, 2018).

Impact on economic and business development

According to all respondents, the presence of the Morija Stone mine and crushers has not created and generated business and economic opportunities for the people of Morija. There are no people engaging in other business ventures particularly in the renting out of residential property, selling of phone card and credits, operating mini-restaurants, selling food and water. Contrary to conventional expectation that mining operations lead to economic activity, the non-miners and many people in the community have not been able to engage in different socioeconomic activities, including sales from food crops and menial business activities. It can be argued that the

mining activities in Morija have failed to ignite economic and business growth and development. The explanation was that the scale of mining operation was low and capital intensive to trigger any activity in the non-mining sectors. In addition, the respondents indicated that almost all non-Morija employees of the mining company do not reside in the community.

Mining and crime, prostitution and population growth in Morija

Concerning crime, prostitution and population growth, all respondents indicated that the start of mining activities has not had any significant impact of the three variables in the study area. They indicated that even their children who resorted to prostitution due to unemployment did not ply their trade in the Morija community but in Maseru which is the national capital town and other big towns. The public safety officials also indicated that the start of mining activities has not led to any increase in crime statistics. This disagrees with the study's *a priori* expectation that mining activities would lead to increases in crime, prostitution and migration and population growth. Instead, the population has been gradually decreasing due to the migration to big towns in search of economic opportunities (Local chief, 2018). This can be explained by the fact that mining activities have not led to creation and generation of economic and business opportunities that usually lure people to the mining areas hence lack of social activity such as prostitution and crime as well as population growth in Morija.

Mining and infrastructural development

Concerning infrastructural development, the responses of Morija inhabitants were mixed as 40% indicated that there has been erection of infrastructure since the start of mining operations in the area while 60% argued that there has not been any infrastructural development that came as a result of mining activities in Morija. Those who argued that infrastructural development has occurred referred to electrification and running water connections that have been taking place for some time. Nevertheless, the focus group discussions with officials from government departments including local government, public works, energy and water affairs revealed that such developments were the results of national government policies that mostly came after the establishment of the Morija stone and crushers. One official from energy and water affairs indicated that *"the infrastructural development seen here were not because of the mining operations at all and they have taken place across the country as part of government development initiatives"*. Another official from local government supported this when stating that *"schools, clinics, hospitals and roads in*

Morija were erected before the establishment of the mining company". Generally, the study argues that the presence of the Morija stone mine and crushers has not led to projects such as electricity, roads, good drinking water, schools, hospitals and clinics and the general provision of social amenities that would enhance the general living standards of people in the community.

Environmental impacts of mining activities on the Morija community

Mining and water resources in Morija

Water has been a very important resource in the lives of people in Morija because it is used for their domestic activities as well as their agricultural activities. The community can boast of a number of water bodies such as river on which bank the mining operations take place and some dams. About 85% of the respondents indicated that ever since mining activities started in Morija, these water bodies have been rendered unusable because of pollution by mining activities. During the focus group discussions some energy, water and environmental affairs officials indicated that the river can visibly be seen as polluted by some waste and dust particles because a canal has been constructed to deposit waste products from the mines into them since mining operations started. The Morija stone mine and crushers does not have its own event pond and Environmental Control Dam where chemical solutions and waste are deposited and carefully managed and controlled.

Concerning dams, one official stated that *"Though most water bodies still look as they were before mining started, the truth is that they have been polluted especially by dust particles from the blasting at the mining site"*. The contamination of river water led to some animal diseases and deaths which had negative impact on agricultural productivity in the area and that compelled the community to stop using the river water and resorted to alternative water sources that are located relatively far from the farms. This shift has been associated with time, physical and financial costs on the side of farming communities of Morija.

Mining activities and air quality

Clean air is very important because its lack thereof can have serious consequences on the health of the people. In many countries, quality air is non-existent because of the increased air pollution through the release of harmful chemical gases and dust particles as a result of a variety of human activities. Around 98% of the respondents indicated that the start of mining operations has led to massive air pollution as the atmosphere is dusty even during the night and these sentiments were echoed by all

Table 1. Distribution of responses on the knowledge of the occurrence of diseases

Disease	Frequency			Total
	High	Moderate	Low	
Coughing/cold	65	15	20	100
Flu	60	10	30	100
Respiratory	70	25	5	100
Typhoid	0	0	100	100

participants in focus groups discussions who even stated that during the blasting of the earth, dust fills the atmosphere. These expert respondents also indicated that chemicals used in the blasting process are also released into the atmosphere hence the compounding of air pollution.

In addition, ninety percent of the respondents and all participants in focus group discussions stated that air pollution also comes from the dusty untarred roads that are continually used by heavy-duty vehicles belonging to Morija stone mine and crushers for transporting machines and other equipment to the mine sites and other heavy-duty vehicles belonging to buyers of stone and crushed stone. The respondents indicated that dusty and untarred roads are never watered to reduce the impact. Based on these views, the study can argue that mining activities have led to the decline of air quality in the mining area of Morija.

Land pollution and degradation in Morija

Land is a vital resource for the people of Morija, a predominantly a farming community, land serves as the main conduit for their livelihood because they cultivate the land for their basic sustenance. Mining in any form or scale appropriates the land and can cause serious devastation and degradation of it. However, in Morija that seemed not to be the case as over 96% of the respondents indicated that very few lands were affected by mining activities while only 4% stated that they have lost their farm and arable land due to mining activities. Nevertheless, the local government, energy and water departments' officials stated that these people were compensated on relocation before the mining operations started. It is argued in this study that mining operations have not led to land degradation in the mining area of Morija and the explanation is that mining by Morija stone mine and crushers is limited to only few hectares (less than 15) even though that area has been excavated and large pits dug for mining.

Noise pollution in the Morija community

It has to be stated that majority (65%) of the respondents did not consider noise as a form of pollution but as just a factor creating nuisance or irritation. The majority of these

respondents indicated that the start of mining activities has brought noise pollution to the area. They all indicated that greatest noise comes from blasting at the mining site. In addition, 85% of the respondents stated that additional noise comes from heavy-duty trucks belonging to Morija stone mine and crushers and most respondents complain about how these heavy trucks destroy the few tarred roads and the noise they make when passing through the community. Most people in the community are mostly worried by the noise from the passing heavy duty trucks more than the noise from the blasts since to them that is only periodic unlike the trucks that keep passing through the community every passing minute, hours and days.

According to about 90% of the respondents and all (100%) of the focus group participants, the noise from blasting is so intense that most building foundations in the Morija community are shaken and one can easily see cracks on most buildings in the Morija community. This agrees with Akabzaa and Darimani (2001) findings that blasting in the mines has caused considerable cracks in buildings in the neighbouring communities. It has to be indicated that Morija stone mine and crushers has not responded to the impact of the blasting on the people and the buildings in the community. For instance, the mining company has not helped households in closing the building cracks with mortar and cement. It is evident that mining operations caused a lot of noise and have negatively affected the community of Morija as they incurred costs related to forced house repairs and maintenance.

Health Implications of the environmental impacts

Respondents were furthered questioned about the implications of the environmental impacts on the health conditions of the people in the Morija community. Majority of the respondents said that health conditions cannot easily be ascertained because they cannot say whether diseases people suffer from are the results of the mining activities since that is only determined at the Medical centers or institutions and the information there is kept confidential. Most of them however indicated that people in recent times complain frequently of certain types of diseases and illnesses especially coughing, cold, flu and respiratory ailments (Table 1) but cannot say for sure if they are the result of mining activities. The general

feeling of the respondents is that in some ways, the incidences may be related to the mining especially the chemicals used in the blasting and dust created although they cannot confirm or say for sure.

Although attempts to gather data from the local clinic and the Scott hospital to confirm this proved futile, there is a growing indication that this is true and that the massive inhalation of dust may be accountable for the incidences of the health problems especially coughing, cold and flu.

CONCLUSION

Mining activities did not have a significant social impact in Morija as there has not been any improvement in the business and economic development, employment creation, infrastructural development, poverty reduction facets of the society. This has led to the frustration among the local youth which compelled them to go to big towns in search of better of living conditions and economic opportunities. Nevertheless, contrary to the conventional outcome, the mining activities did not lead to social issues including crime, prostitution and population growth. This has been attributed to the small-scale of operation by the Morija stone mine and crushers that has failed to ignite any socio-economic vibe in the area.

In terms of the environmental impacts, the mining activities have led to the destabilization of the aquatic ecosystem as fish and other living things were negatively affected by chemicals and other wastes discharged in to the river. In addition, the discharge of chemicals and wastes in to the river disturbed the livelihoods of the people as some were forced out of farming due to low productivity caused by toxic water for irrigation and livestock nourishment. These sections of the community did not have any viable livelihoods option. The mining activities negatively affected the air quality as the dust and chemicals polluted the previously clean atmosphere and this destabilized the society as people suffer from mining related diseases such as coughing, cold, flu and other respiratory ailments. This has rendered society unproductive due to poor health and the society was also rendered poor as they spent most of their limited resources on medical care. Another environmental impact is in the form of noise pollution and vibrations due to blasting which has led to the destruction of most houses/buildings within the vicinity of Morija stone mine and crushers. This has led to the increases in poverty levels as the impoverished Morija communities have to frequently repair their houses hence high financial costs.

Although there were no medical proof/records from the local medical institutions, it is concluded that the environmental impacts have negative implications on the health of the inhabitants of Morija. There has been high incidences of mining related ailments such as coughing,

cold, flu and respiratory diseases since the start of the mining operations and this has made the communities to spend their limited financial resources on medical care which further driven them in to deep poverty. This has also rendered these communities unproductive as they were unable to engage in activities that could take them out this misery of poverty and hunger.

RECOMMENDATIONS

In order to reduce negative impact on the society, the Morija stone mine and crushers should employ a Global Reporting Initiative (GRI) framework and provide a description of policies to manage impacts on communities in areas affected by activities, as well as description of the measures to address this issue. In this regard, the company should construct tarred roads and regularly water the gravel roads that link the plant to the tarred Main South One road in order to reduce dust and air pollution. In addition, the company should assist the inhabitants of Morija to repair their cracked houses/building. The working and cost sharing models should be designed and agreed upon by both parties (the company and community). Furthermore, the mining company should construct its own event pond and Environmental Control Dam in which chemical solutions and wastes are deposited and carefully managed and controlled. The company can explore the blasting of the earth activities at night when people are indoors so as to reduce the degree of inhalation of dusty and polluted air.

The Morija stone and crushers should develop and implement a Corporate Investment and Social Responsibility Strategy in order to ensure that it has an obligation to contribute towards the socio-economic as well as environmental development of the Morija communities. The participatory approach should be employed whereby community members are part of the identification and assessment of needs. The approach should be continued even in the design and implementation of interventions as well as their monitoring and evaluation.

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