

Closure of Livelihood Sources on Access to Healthcare among Households: A Case of Keiyo South Sub County, Kenya

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ABSTRACT

The operations of Mining Companies, sugar industries, and manufacturing companies among others created direct and indirect employment opportunities for the local population. However, the closure of activities within the companies may have led to social and economic challenges for the local communities. These were widespread unemployment, poor access to health and nutrition, high crime rates and increased dependency. The study objective was to assess closure of livelihood sources on access to healthcare among households in Keiyo South Sub- County Kenya. The study was informed by the theory of Redefinition of situation. Survey research design guided the study. The target population was all the households' heads in the study area. The sample size was 254 respondents. A multistage sampling technique was used. Data collection methods included questionnaires, interviews, and observation and focus group discussions as the main data collection tools. Quantitative data collected was analyzed in form of frequencies and percentages and presented in form of matrix tables, charts and graphs. On the other hand, qualitative data was analyzed thematically based on the specific research objectives. The results of the study show that mining is a major propellant of economic activities in most mining areas by creating wealth, better access to quality healthcare, providing jobs, and stimulating business ventures for community members.

Key words: adaptive livelihood, strategies, households' closure of fluorspar mining company

Date of Submission: 08-01-2023

Date of Acceptance: 23-01-2023

I. Introduction

Globally, assurances of livelihood and sustainability are critical to human survival. However, any loss of livelihood is likely to cause severe psychological, social, and physical suffering, as well as death. It worsens when policy intervention is not implemented on time. Despite the mining sector's significant contribution to national government revenue, foreign reserves, and other infrastructure development, many stakeholders argue that the negative effects of mining outweigh the benefits (Assan & Muhammed, 2018).

Rural households' livelihoods differ across regions and countries, as well as within countries. While some rural households rely solely on one type of activity, most people now seek to diversify their source of income in order to mitigate risk. The value of raw mineral production in North America is estimated to be around US\$ 70 billion. Approximately 1 million people are employed in the industry (Plumpton, 2017). The mining industry in Peru accounts for 50% of the country's annual export earnings. The mining industry contributed \$240 million in taxes, \$400 million in local purchases, and \$280 million in imported goods to the Peruvian economy, accounting for more than 11% of GDP (Pierola, Fernandes & Farole, 2015). Mining companies and surrounding mining communities in Sweden face a wide range of practical challenges that provide both opportunities and barriers to socially sustainable development (Abrahamsson et al., 2016). To varying degrees, mining companies and communities in Sweden share these challenges with mining companies and communities in Australia, Canada, and several other similar countries. Mining, for example, is frequently carried out in rural areas where regional growth is dependent on mining (as well as forestry and steel) (Fleming & Measham, 2015).

Mining is a major economic activity in many Sub-Saharan African countries (Andriamasinoro & Angel, 2012). However, mining as an industrial activity has an impact on the natural environment, causing disturbance in the areas where it occurs (Tom-Dery et al., 2012). According to Assan and Muhammed (2018), the livelihoods of mining communities in developing countries are structured around a variety of agrarian activities and complementary subsistence occupations whose environmental impact is negligible when compared to mining operations. However, when mining companies displace these companies, they attempt to diversify the local economy, which is frequently unsuccessful due to a lack of capacity among indigenous

people to take advantage of the formal employment opportunities created by mining operations. Despite the fact that mining sector reforms have contributed significantly to macroeconomic gains, the associated growth has had negative consequences for indigenous communities, including land degradation, contamination, and chemical pollution (Quarshie, 2015).

A variety of factors or contexts affect or even control the livelihoods and quality of life of rural dwellers in Sub-Saharan Africa, making life almost a survival struggle for them (Mensah, 2014). These variables include economic policies, agro-climate, the environment, socio-culture, demography, infrastructure, services, and governance, among others. Gold mining alone accounts for 27.4% of mineral revenues in South Africa, where gold is the most valuable mineral.

Companies' operations in Kenya generate direct and indirect employment opportunities for the local population, as well as opportunities for starting new businesses and expanding existing ones, all of which contribute to poverty reduction and economic growth by enriching livelihoods. Furthermore, mining projects provide livelihood assurances and develop basic infrastructure facilities such as health facilities, schools, dispensaries, and recreational facilities in mining areas, thus replacing household social dimensions. However, the 2016 closure of fluorspar mining activities, which used to produce significant amounts of fluorspar mineral for export, has resulted in social and economic challenges for local communities, including widespread unemployment, poor nutrition and inadequate health care, high crime rates, and increased dependency. It worsens when policy intervention is not implemented on time. Despite the closure of a fluorspar mining company in Kenya, little, if any, work has been done on the closure of livelihood sources on household access to healthcare: a case from Kenya's Keiyo South Sub County.

In light of this, the study looked into how the closure of mining companies has affected health care provision among Kenyan households. As a result, the current study sheds light on the effects of mining closure on health care provision among households in the mining area. This information bridges the existing knowledge gap on the closure of the fluorspar mining company and health care provision among Keiyo south sub-county households. Kenya.

II. Theoretical Review

William Thomas' theory of Situation Redefinition was used in this study (1994). According to the theory, humans begin as they are and, when they are not comfortable, they change their cognition, attitude, and, finally, their behaviour. Keiyo South Sub-County communities reoriented themselves to adjust to the new situation by implementing coping strategies in access to health care and other social amenities.

III. Methodology

The study was carried out in Keiyo South Sub County, Kenya. It is endowed with arable land, waters from River Kerio and Fluorspar at Kimwarer which had been closed. Mining of fluorite by the Kenya Fluorspar Company was the largest industry in the former district before its closure. This research adopted the use of pragmatist paradigm. This was considered appropriate for this study since the research was anchored on both qualitative and quantitative techniques.

This study employed the use of mixed methods approach. The choice of mixed methods research in this study allows the triangulation. Triangulation allows one to identify aspects of a phenomenon more accurately by approaching it from different vantage points using different methods and techniques. The study targeted two wards Soy North with 479 households' heads and Soy South with 367 households' heads sparsely populated.

The study used 30% of the target population to derive the sample size of 254. The researcher purposively selected two wards from the six wards in Keiyo South Sub- County. Cluster sampling was used to select the villages from the two selected wards forming 31 clusters. Proportionate sampling was used to get the number of households to be selected from each cluster. A simple random sampling was used by researcher to select households for study from each cluster giving equal chances of being selected. Further, simple random sampling was used to select the household's heads in reference to respective number in each cluster.

The study used survey interviews key informants' interview, focus group discussion (FGDs) and direct observation as the main method of data collection. The collected data was analyzed using both quantitative and qualitative methods. Quantitative analysis entailed the use of descriptive statistics such percentages and frequency distribution tables. Qualitative analysis involved identifying major themes emerging from the data collected and relating them to the research objectives. Thematic analysis emphasizes pinpoints, examines, and records the themes within the collected data. Themes and patterns across data which sets a basis that is important to the descriptions of a phenomenon that is associated to specific research questions. Qualitative data was presented by use of themes denoted by narrations and tabulations on responses in verbal form and pictures found in the area of study.

The researcher sought permission from the respondents and the key informants just before embarking on the interview. This was achieved through informed consent to participants. The researcher also kept the

information given with confidentiality of which the respondents did not feel threatened. Consent for household members participating in the study was sought verbally during the course of data collection. The results of the study were provided to relevant authorities and to the interested participants.

IV. Findings

The objective of this study was to analyze the effects of closure of mining company on health care provision adopted by Keiyo South Sub-County communities who had benefited from fluorspar mining company after its closure. This was done in order to understand how the communities cope up with the effect of closure of the mining company.

Family Size

The participants were also asked to give their family size and the results are presented in Table 1.

Table 1 Family Size

	Frequency	Percentage
1-5 members	78	38
6-10 members	92	44.9
11-15 members	35	17.1
Total	205	100

Investigation into the family sizes of the respondents shows that most 92(44.9%) of the households who participated in the study comprised of 6-10 members, 78(38%) said that they were 1-5 years while 35(17.1%) indicated that they were between 11-15 members. This is as shown in table 4.6 below. This implies that employment and even housing was not adequately provided, the families could be facing the challenge of meeting their needs.

Respondents Links to Fluorspar Mining Company

The respondent's links to the fluorspar mining company was sought to understand how the closure of mining company affected their livelihood. The results are presented in Table 2.

Table 2 Respondents Links to Fluorspar Mining Company

	Frequency	Percentage
Employment	97	47.3
Suppliers	26	12.7
Casual workers	33	16.1
Health services	49	23.9
Total	205	100

According to the results from interview schedules, 97(47.3%) of the respondents were former employees to the mining company, 26(12.7%) of the respondents were former suppliers to the mining company, 33(16.1) of the respondents were former casual workers and 49(23.9%) of the respondents provided health services. This shows that closure of the mining company acted as a major drawback to the livelihoods of the neighborhood.

Health

Majority (76%) of the respondents reported that during its operation fluorspar mining company provided health care to its employees and the community. However, after its closure the household members and former employees have suffered in terms of primary health care services for example immunization of children and maternal services among others.

The study results are in agreement with PMG (2013) noted that as a result, most of the workers at mines them lost their medical aid, unemployment insurance fund (UIF) and pension benefits, some after working 25 years for the mining industry. It is reported that even though the money for their pension and medical aids was subtracted from their salaries, the mining companies did not pay over their money to the respective funds. Further, Tempelhoff (2010) noted that payments were also not made to the UIF. Furthermore, value-added tax was never paid on any of the transactions made by Aurora (PMG, 2013). The mine owners were accused by the media of running the two mines on a Ponzi scheme. This practice involves making payments on the grounds of promises of money based on forthcoming income and funding, which was never realized in the case of Aurora (Pauw 2012).

The study further sought to determine where the household members seek for medical services. This was carried out in order to find out where the households seek medical services after the closure of mining company. The study results were presented in Table 3.

Table 3 Place of Seeking Health Services

	Frequency	Percentage
Public hospitals	194	94.6
Private hospitals	11	5.4
Total	205	100

The study results in Table 3 on the type of health facilities shows that majority 194(94.6%) of the households seek medication from public hospitals while minority 11(5.4%) seek their medication from a private hospital since majority of the public health facilities offers the services for free and therefore it is easily accessible.

The findings above gave an impression that after closure of mining company, the households experience challenges in meeting health service expenses. This was because during the operational period of fluorspar mining company, the residence was provided with free medical services at the company's health facilities. However, after the closure these health services also failed to continue and the facilities were taken over by the county government of Elgeyo Marakwet hence becoming a public facility. The residents near mining companies are prone to health-threatening conditions. These conditions manifested in tendencies of diabetes, heart conditions, miscarriages, depression, increased mental issues, substance abuse, suicides, and, for children learning difficulties that impacted negatively on their school performance.

The study findings concur with those of Constantine and Batty (2015) who found that community's benefit from the mining company health instructions. However, after the closure of the mining company health facilities ceased to operate offering health services to the community. Essential community services such as health, education, local government and emergency services are increasingly finding they are unable to retain and recruit workers due to wages incompatibility, housing affordability and lack of supply of personnel.

Health Care for the individuals in communities dependent on a mineral development is also essential. Healthy workers are necessary for the good functioning of the mine, but healthy families are also necessary for the functioning of a community. In Canada, health care is primarily a provincial or territorial responsibility, but the development of a mine in a remote area can quickly strengthen the capacity of a provincial or territorial health care system. The influx of outsiders and the presence of a development can bring about better health care in an area, and yet, some health care issues, such as increased drug and alcohol abuse, can arise due to the presence of the mine. Health care is not limited to the provision of health facilities and professionals on a site. It can include the provision of services to the individuals and families in a community.

Health care includes access to services, access to health education and preventive measures, and access to mental health services. In specific communities, preventive measures may be aimed at potential or existing problems, such as alcohol and drug addiction, or at specific groups within the community such as the elderly, women or youth. The health of individuals and families is essential to the sustained development of a community and a development. Although some elements, such as access to medical services, may be general to all communities, communities may also be interested in ensuring specific services, geared to their own situation or problems, and may be looking to industry to offer assistance. Such assistance may include, but not be restricted to, education on preventive health care, counselling for workers and their families, and the provision of health services at the mine site open to all members of a community.

The influx of outsiders into a community and the ensuing rapid expansion of the community can be a cause for concern for individuals and families. Increases in prostitution, sexually transmitted diseases, alcoholism, drug abuse and violence are seen as the negative side of development. Such impacts are especially worrisome for women, who are concerned about the safety of children and young women and who fear the breakdown of family values. Fly-in operations seem at first glance to have resolved this issue, but it should be remembered that the employees are flown in from a given community that will experience an increase in outsiders and expansion, resulting in an increase in social problems. Goods and services are also acquired in a community that will feel the impact of a development.

Dealing with the problems that can occur from the influx of outsiders to a community can require an increase in health care delivery. Counseling for alcohol and drug abuse, and for victims of violence or sexually transmitted diseases, can help decrease the negative impact of outsiders on individuals and families. Such counseling can be made available not only to mine workers, but also to their families. Crime prevention programs may also be necessary, and the mining industry can assist communities in the development of such programs and the capacity to apply them. Furthermore, some companies have set goals of including high levels of local people within the work force or even of eventually replacing all outsiders with local people. Although it

is difficult to prevent some of the negative influences that occur from the presence of outsiders, some of the impacts can be diminished through fly-in mining and through an increase in the proportion of local workers.

With fly-in mining, larger settlements that act as service and transportation centres will see an increase in outsiders, while some of the settlements from which workers originate will see very few outsiders. In some cases, they will see a declining population as their residents relocate to larger centres after working for a while with the mine. As the local proportion of mine workers increases, the proportion of outsiders will decrease. Training, education, advancement opportunities and a policy of hiring local people can all serve to decrease the negative influence of outsiders on communities. Outsiders can also have positive impacts on a community through the provision of new or improved services, such as health services and education. Furthermore, tourists are outsiders who can put money into the economy of a region.

The study furthermore, sought to know whether the closure of the mining company changed the health facility where their members sought health services. Figure 1 presents the study results.

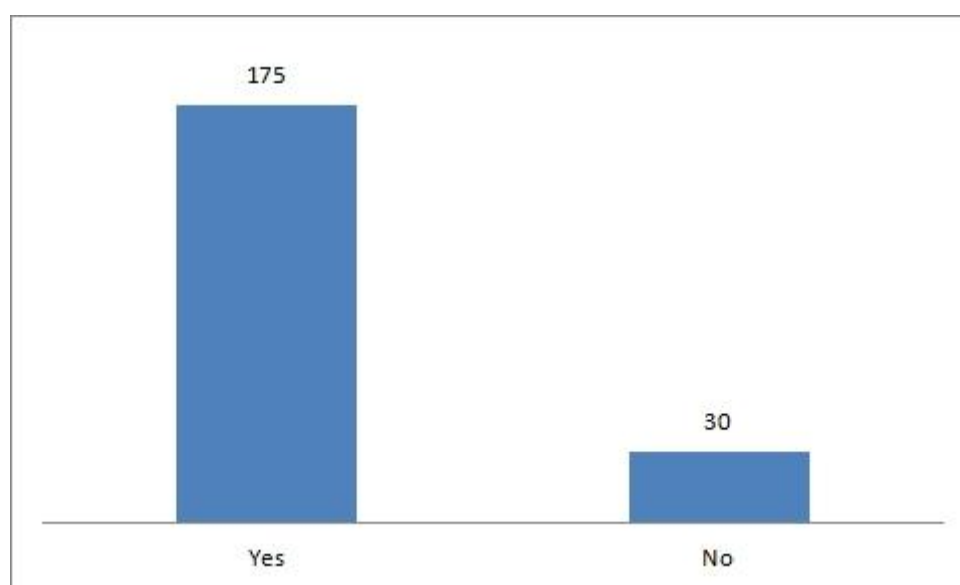


Figure 1 Closure of the Mining Company and Level of Hospital Utilized

Source: Field Data 2019

The study results are as shown in Figure 1. The findings show that majority 175(%) of the respondents reported changing of hospital, 30(%) indicated that they did not change the level of hospital. This implies that due to loss of income occasioned by unemployment, the household members opted to hospitals they could afford.

This is in agreement with World Bank (2007) who found out that mining company closure will lead resort to self-treatment, or make people ignore their ailments. They noted that unregistered women are more likely to avoid health services while men regularly seek treatment). The study results are also in agreement with PMG (2013) who asserts that as a result, most of the workers at mines them lost their medical aid, unemployment insurance fund (UIF) and pension benefits, some after working 25 years for the mining industry. It is reported that even though the money for their pension and medical aids was subtracted from their salaries, the mining companies did not pay over their money to the respective funds. Further, Tempelhoff (2010) noted that payments were also not made to the UIF. Furthermore, value-added tax was never paid on any of the transactions made by Aurora (PMG 2013). The mine owners were accused by the media of running the two mines on a Ponzi scheme. This practice involves making payments on the grounds of promises of money based on forthcoming income and funding, which was never realized in the case of Aurora (Pauw 2012).

Nutrition

Nutritional status is often considered one of the best outcome indicators for overall livelihood security. The inability of the households to provide nutrition for their children was evident from the following responses. In terms of nutrition status, the respondents noted that mineworkers are living in terrible conditions after the closure of mining company; there is no food, water or electricity.

Another respondent noted that,

“My neighbor died, I think he was depressed, there was nothing to eat. Another neighbor died of hunger”

Another respondent also stated that,

“I fell pregnant. I was under stress all the time, not having enough to eat during my pregnancy. My baby was declared dead after it was born”

Malnutrition was reported by all the participants. This condition resulted in miscarriages and bouts of depression among children and adults. Children felt ashamed of their situation at home. As a result, suicide attempts and suicidal behaviour were reported in the mining communities, the semi-structured interviews. Proper nutrition is crucial as an expression of general health and well-being of a community, of which regular access to food is only one

The study was in agreement with Shandro, Veiga, Shoveller, Scoble and Koehoorn (2011) that the health of mining communities is becoming a priority for the mining industry, governments, and researchers. Health and social service providers report on increases in pregnancies, sexually transmitted infections, and mine related injuries during booming mine activities. During bust times, mental health issues such as depression and anxiety were reported. Overarching community health issues prominent during both boom-and-bust periods include burdens to health and social services, family stress, violence towards women, and addiction issues.

Chuhan-Pole et al. (2015) also reported that infant mortality rates significantly decreased in mining communities relative to non-mining areas. The study contradicts with Aragon and Rud (2015) who reported that farmers located near mines experienced a relative reduction in total factor productivity of almost 40% between 1997 and 2005, with pollution emanating from mining as the most plausible explanation for the agricultural productivity slowdown in mining areas.

V. Conclusions and Recommendations

The study concluded that the communities dependent on an economic resource such as mining can be able to meet their health needs by resorting to other activities like diversification of farming, self-employment and seeking for employment. Motivations behind these choices can depend on households' characteristics (education, productivity, among others). There is need for mining companies to develop a contingency plan to mitigate the potential socio-economic consequences which leads to human suffering due to unexpected mine closure. This will assist in building resilience into the livelihood strategies of mineworkers and their dependents as well as surrounding communities dependent on these mining companies.

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Finson Kiprop Bargarora. "Closure of Livelihood Sources on Access to Healthcare among Households: A Case of Keiyo South Sub County, Kenya." *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 28(1), 2023, pp. 40-46.