

Assessment of Compliance to Sustainable Development on Mining Activities in Tanzania: A Case Study of Kahama District

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ABSTRACT---- *This paper is based on the findings of a study undertaken to assess the compliance to sustainable development on mining activities in Kahama District. The study aimed at investigating how Buzwagi and Bulyanhulu mining companies contribute to environmental conservation, economic growth and social empowerment and stability to the community's around and how this is implicated to attaining sustainable development to Kahama communities in Tanzania. The study findings show that most of the mining activities were not complying with sustainable development to meet the needs of the communities within the mining areas. The most evident reasons for not complying were, among others, ignorance of the communities around the mining area which has resulted into failure to understand sustainable development and therefore have limited scope of analyzing and interpreting the policies, rules and by laws guiding mining activities. Other reasons are weak and ineffective policies leading to inequitable benefits sharing, deprivation of communities land rights, opportunity to become shareholders in the mining business and exposure to threats such as diseases, drought, theft etc. Apart from the policies being weak they also lack linkages and synergies thus making enforcement difficulty. The study concludes that marked sustainable development can be attained through community capacity building, economic and social empowerment. Subsequently, it is recommended that the government, mining companies and NGOS should build capacity of the communities around Buzwagi and Bulyanhulu and minimize environmental impacts through effective environmental management. Also the Government should review mining policy, investment policy and land policy effects.*

Keywords--- Sustainable development, social economic and environmental factors community empowerment

1. INTRODUCTION

The concept of sustainability has and continues to be widely recognized and discussed because sustainable development is a pressing prerequisite for 21st Century. The world has three basic issues to address; what it takes, what it makes and what it waste (Humphreys, D. 2001). Brundtland Commission defines Sustainable development as development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. In 1987, the Commission set out the parameters for sustainable development namely; economic, environment and social objectives that has become a guiding principle for businesses, organizations and governments (Kumah, A. 2006).

The economic facet emphasizes on maximizing income while maintaining constant or increasing stock of capital hence improving human welfare primarily through increasing consumption of goods and services (Hilson,G. et al 2000). Therefore, economic growth, efficiency and stability are important for sustainable economy (Jenkins, H. et al 2006). Environment is geared to maintaining resilience and robustness of biological and physical systems and social cultural underscores the enrichment of human relationships and achievements of individuals and groups desires by maintaining stability of social and cultural systems. Community empowerment, inclusiveness and good governance are central to attaining a sustainable social status

Sustainable development requires a balanced and integrated analysis from all three aspects because each viewpoint

represents a domain and system that has its own distinct and driving forces and objectives. The interactions among the domain are also important to safeguard balanced assessment of trade –offs and synergies that might exist among the three spans. (Kumah, A. 2006)

Hilson [2002] reports that all mining activities/operations whether small or large –scale have a disruptive effects on the environment and thus affects the natural capital severely. Tanzania is endowed with abundant deposits of mineral resources of high international value such as gemstones, nickel, cobalt, coal, gas, phosphates, kaolin and tin (Hamdani, K. et al 2001) Additionally, Tanzania is expected to become the third uranium producer in Africa and amongst the top ten producers in the world (Reuters 2012).

Records indicate that mineral exploration and exploitation in Tanzania commenced in 1880's following the German administration. However local people started mining activities using their traditional methods centuries before the colonial rule (Kitula, A. 2006). Tanzania is currently ranked at a third position in production of gold in the continent after Ghana and South Africa (Gomezulu, E. et al 2013).

Exploration activities increased in Tanzania than in any other country in Africa including traditional mining countries such as South Africa and Ghana. This was a result of Tanzania instituting a new Mining Act April 1998 that was conducive to foreign investment. It incorporated the mining legal and regulatory, fiscal and environment framework (Mutagwaba, W.2006). As indicated by Mwalyosi (2004) since 1998 Tanzania has been opening one gold mine every year. The production of gold facilitates investors to pay taxes to the government to the tune of 47billion Tanzania shillings compared to only 2.7b Tanzania shillings in 1997. This is a notable increment.

Rises in mineral production has increased the contribution of mining sector to the National Gross Product, which rose from 1.1% in 1989 to 2.3% in 2000. However, overall mining contributes relatively small share to GDP compared to the mining activities during the period (Kiltula, A. 2006).

Mining activities are now considered to have impacted negatively to the community's livelihoods, economic, environment and social cultural as a result of poorly managed mineral resources exploration. There is a growing realization that mining activities in Tanzania can be undertaken while ensuring sustainability and integrated economical, environmental and social concerns (Mwalyosi, R. 2004).

2. STUDY AREA DESCRIPTION

Kahama is one of the administrative districts in Shinyanga region. The district is located in northwest Tanzania, between Latitudes 3⁰15'S and 4⁰30'S and between Longitudes 31⁰00'E and 33⁰00'E and boarded by Shinyanga and Nzega districts to the East, Geita district to the north, Bukombe district to the west and Tabora district to the south. (ELCT 2012)

According to 2002 population census, kahama district had a population of 596,456 people (300,878 female and 295,578 male) with an annual growth rate of 3.7%. However, only 497,734 people are active and potential for economic growth as they provide labour force while the rest people are dependants. Land is mainly used for crop and livestock production.

3. STUDY METHODOLOGY

The study population was the community members in Kahama district. A sample of 300 households was interviewed out of 5561 households in the four villages under study. Stratified sampling technique was used to select four villages situated around Buzwagi and Bulyanhulu mining areas. These villages are Mwendakulima, Mwime, Kakola and Bugalama. A systematic sampling method was then employed to identify households for data collection,

Primary data were collected through the use of Household Questionnaire while secondary data were collected using District profile, Checklists for information from natural resource, environment and development sectors. Descriptive statistics were applied in data analysis depending on variables. Bar charts, pie charts and histogram were used to display the varying degree of the impact on socio-economic livelihood and environment degradation as well

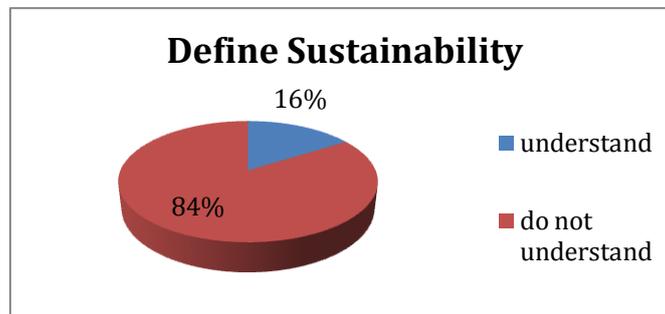
4. RESULTS AND DISCUSSION

4.1 Community understanding about sustainable development

Figure 1 indicates that majority (84%) of the respondents do not understand the term sustainable development while only 16% of the sample population fairly understand. It implies that the community's capacity to analyze issues is limited due

to educational gap and limited scope of thinking as shown in table1. Therefore, they are disadvantaged when negotiating with the mining multinational companies that are better placed in negotiating skills.

Figure 1: level of understanding sustainable development



Source: Field data (2013)

Table 1: Education Level of respondents

Education level	Frequency	Percent
Standard seven	208.00	69.33
Secondary education	30.00	10.00
Diploma	2.00	0.67
Never attended school	60.00	20.00
Total	300	100

Source: Field data 2013

4.2. Environmental impact

Results shows that land clearing, exaction and forced migration are the major environmental effects of mining in Buzwagi/Bulyanhulu areas. A few respondents (3%) indicated that water and air pollution were caused by mining activities

Table1: Root Cause of Natural Capital Depletion as a result of Buzwagi/Bulyanhulu Mining

Causes	Frequency	Percent
Large land clearing	26	8.67
Excavation	19	6.33
Air and water pollution	53	17.67
Chemical pollution on land	29	9.67
Excavation & water + air pollution	9	3.00
Large land clearing, chemical pollution on land and forced migration	31	10.33
Land clearing, excavation, air and water pollution and soil pollution	33	11.00
Land clearing, excavation and forced migration	59	19.67
Large land clearing, excavation and air +water pollution	37	12.33
Not aware of any root cause	4	1.33
Total	300	100

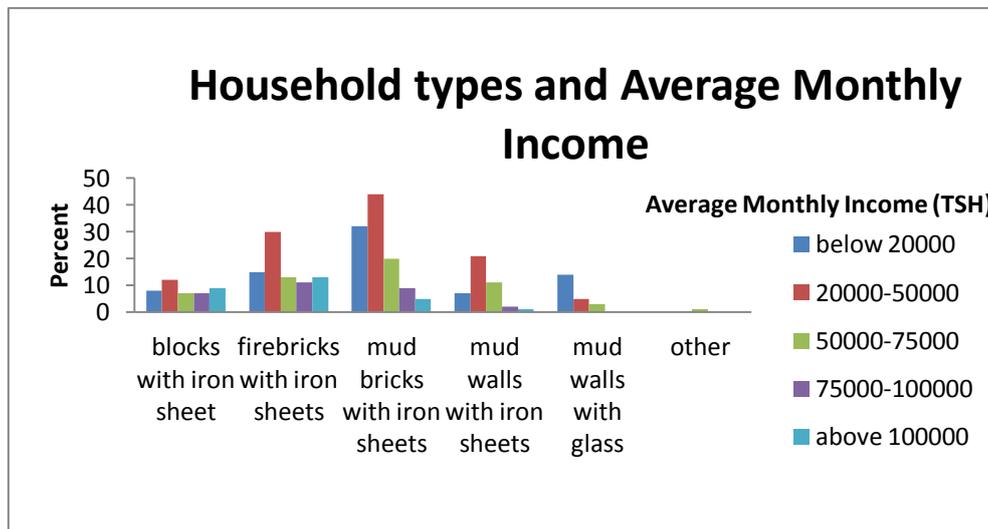
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Generally, land clearing and excavation, air, water and soil pollution and forced migration are the main root causes for natural and social depletion as a result of mining activities in Kahama district. This implies that majority of the respondents are informed of the root causes for natural and social depletion in their areas as a result of mining activities. Nevertheless, findings indicate that 61% of the respondents are not aware of the ways applied by the mining to conserve the environment and therefore it shows that the mining companies are doing less effort to conserve the environment in comparison to the degradation caused by the mining activities (Appendix 1)

4.2 Economic impact

The evidence from Fig 2 indicates that there have been no economic empowerments to the communities around mining areas because majority owned houses made of mud walls/ bricks roofed with either grasses or iron sheets, a sign of low economic status

Figure 2: household income and house type



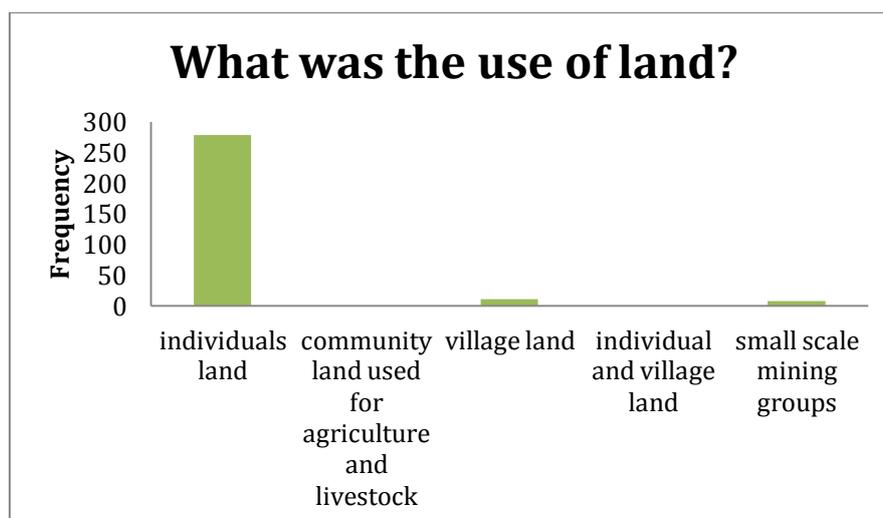
Source: Field data 2013

Houses built with concrete and roofed with iron sheets indicate higher economic status than those constructed with mud and roofed with grasses. This is evidenced by income level for the households where majority have monthly income below TZS 50,000/= (equivalent to 32 US dollars). The perception of the respondents concerning whether the existence of Buzwagi and Bulyanhulu mines contributes to the economic growth and stability of the communities showed that 118 (39.00%) disagree, while those who strongly disagree were 38 (12.66%). Those who agree were 91 (30.33%), strongly agree were 28 (9.33%) while 25 (8.33%) were not sure (*Appendix 2*). The implication is that the existence of the two mines in the respective areas contribute insignificantly to the economic growth and stability of the surrounding communities

3.2.3 Social impact

Regarding social impact, land grabbing was rated top at 92.67% by the respondents. The land where Buzwagi and Bulyanhulu mining companies are operating were individual land as shown in Figure 2. Field data indicates that people were relocated to another land (72.67%) while 24.67% said they were not relocated to another land

Figure 3: Land ownership



Source: Field data 2013

The results show that a big chunk of land has been grabbed from individual households land ownership system. These people had been living there in time memorial. Compensation status was low as indicated by 50% respondents who said it was inadequate. On examining whether the communities participate in decision-making regarding benefits sharing

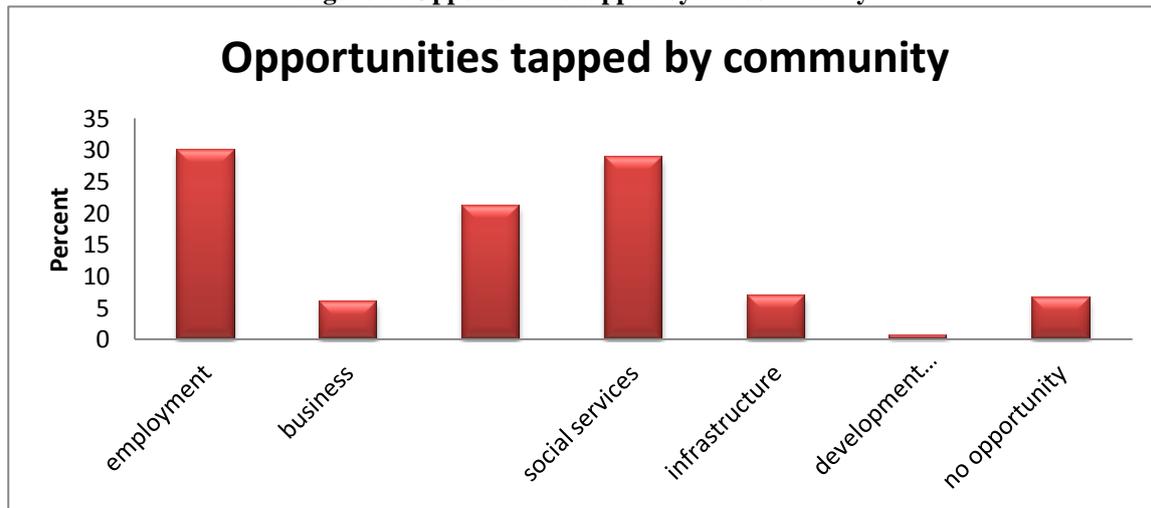
obtained from mining, 43.33% strongly disagree to the statement and 34.00% disagree while those not sure were 37 (12.33%). Those who agreed that they are part of decision making when it comes to benefits sharing were 20 (6.66%) while those strongly agree were 11 (3.66%). The combination of those who strongly disagree with those who disagree that they are involved in decision making pertaining profit sharing was 232 (77.33%). From this data one could conclude that inclusiveness and good governance is lacking.

Mining operations in Kahama district do not comply with sustainable development as seen from the above discussions. The most evident reasons for not complying were among others; ignorance of the communities around the mining areas which has contributed to failure to understand sustainable development and subsequently, limited scope of analyzing and interpreting policies, rules, and by-laws guiding mining activities. Also weak, conflicting and ineffective policies have led to inequitable benefits sharing, deprivation of land rights, opportunities to become shareholders in the mining business and exposure to threats such as diseases, drought, theft etc

4.3 Community's perception regarding opportunities and threats

4.3.1 Opportunities

Figure 4: Opportunities tapped by the community



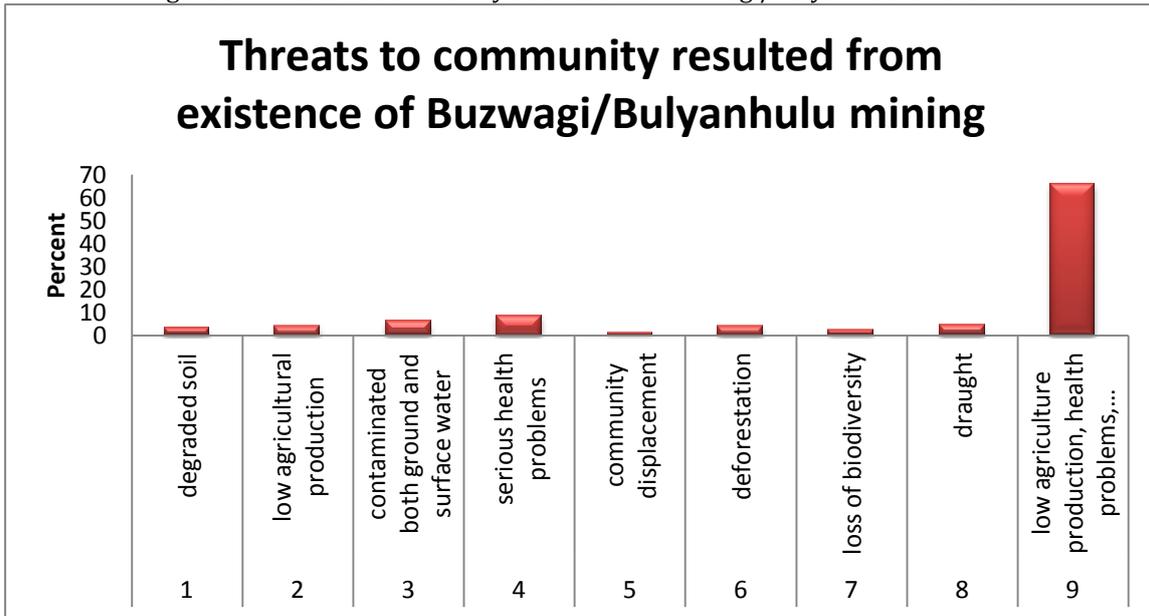
Source: Field data 2013

The respondents were asked to choose the opportunities they think have been or could be tapped from the existence of mining companies in their areas. Social services such as health and education facilities happened to be the leading ones according to 84 (28.00%) of respondents, followed by employments 70 (23.33%). Opportunities such as income generating activities, business promotion and development projects posted low percentages. This indicates that the mining companies have offered limited employment and business opportunities with minor social facilities to communities around in contrast to the precious and high valuable minerals being ripped from the area. The following were purely based on social services namely provision of social services such as water health and education 36 (12.00%), sponsorship for education 35 (11.67%), education sponsorship, social services (hospital & school) 7.6%, employment and business 7.67%. Infrastructure such as roads and power supply again indicate that the social services provided are inadequate.

4.3.2 Threats

Figure 5 shows 66% of the respondents indicated low agriculture production, health problems, deforestation and drought as major threat. The results further show that 3.33% of the respondents are affected by soil degradation leading to low. While there are natural phenomena associated to these threats, mining activity has also amplified the situation of health problems, deforestation and low agriculture production (displacement). Mineral exploitation has added to the contamination of both ground and surface water as shown by (6.00%) of the respondents, denying the communities to access clean water as well as tapping rain water harvesting. Loss of biodiversity rated at 2.3% as a result of mineral exploration thus representing a serious environmental concern to the ecosystem in the area. Community displacement looks low at 1.33% but is of serious concern because every human being has a right to life of dignity. What is required of the government is to take initiative to address the matter by introducing crops that are drought resistant, strengthening extension services and sharing the matter with the mining companies. Enhance monitoring systems of disposal of chemical.

Figure 5: Threats to community as a result of Buzwagi/Bulyanhulu existence



Source: Field data 2013

4.4 Available policies reinforcement

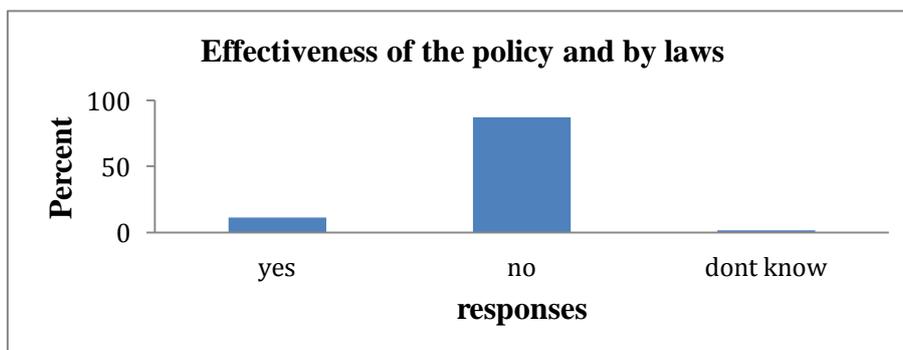
Concerning the government environmental and mining policies, 66.33% of the respondents rated the polices as “weak”, 21.00% as “Bad policies”, 10.33% as “good” and 2.34% “Very good” .It is obvious that weak policies are ineffective and may be a factor for failure to comply with sustainable development aspects for Buzwagi and Bulyanhulu mining companies

Table 2: environmental and mining policies

	Frequency	Percent
Very good	7	2.34
Good	31	10.33
Weak	199	66.33
Bad policy	63	21.00
Total	300	100

Source: Field data (2013)

Figure 6: Effectiveness of the available policy and by laws



Source: Field data (2013)

5. CONCLUSION AND RECOMMENDATION

The communities around Buzwagi & Bulyanhulu have low education levels and therefore are unable to effectively participate in the business activities since the start of the mining companies to date. Failure to understand and analyse issues concerning sustainable development has contributed to deprivation of their livelihoods while the mining companies are harvesting gold bars in ounces and minerals concentrates in million tons yearly. Ignorance has also led to land grabbing and the community failed to claim for their land rights.

Buzwagi & Bulyanhulu mining companies did not bring the surrounding communities on board or consult them during the planning stage of the mining activities, and therefore contributed to loss of business opportunities. The communities are not part of the decision making when it comes to Buzwagi & Bulyanhulu operations and benefit sharing arrangements. This situation is the same at village level and district level where village authority and community are not aware of anything while at the district level they are recipient of revenue annually amounting to USD 300,000. The reason and basis for being paid that amount is unknown to the district authorities; every decision is done at ministerial level. One could associate this with lack of transparency and good governance.

Buzwagi and Bulyanhulu have invested minimal on environment, economic and social areas compared to the benefits obtained from mining activities. Subsequently, mining operations contribute highly to environment degradation leaving the communities more prone to health hazards and poverty. No efforts have gone to social - economic empowerment to the communities

Mining policy is outdated and colonial based with biasness towards protecting the investors at the expense of the local communities. The policy is currently under review but taking too long to complete. The mining policy, environment policy and investment policy remains contradictory, conflicting and uncoordinated instead of having synergy hence ineffective.

The study recommends that the government and mining companies, authorities and NGOs should build awareness capacity among communities surrounding the mining areas on sustainable development, policies, and rules and by laws governing mining activities. Negotiation skill and governance should be instilled to the communities by the government authorities and NGOs. The government should ensure that Buzwagi and Bulyanhulu minimize environment impacts through effective environmental management. The National Environment Management Council (NEMC) should ensure environmental management standards are followed. Good governance should be promoted and encouraged with values of transparency, responsibility, accountability and ethical operations. This will facilitate harmony and open up for more opportunities and reduce threats to both parties; communities, government authorities and the investor (Buzwagi and Bulyanhulu). The government should review the mining policy and investment policy to eliminate biasness. Good policies will give the communities opportunity to become part of the contracting by being shareholders in the business rather than giving up their land. Also will enable the government authorities to take deliberate steps to revisit benefit sharing, land rights, environmental conservation measures, employments and emoluments

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