

Large-scale mining and the right to a clean, health and safe environment in Tanzania

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Abstract

The last two decades witnessed growth in Foreign Direct Investment (FDI) in Tanzania's mining sector, resulting from the government's opening up the doors for foreign capital. This paper sought to investigate the extent to which large-scale mining impacts on the rights to a clean, safe and healthy environment for people who live near the mines. The study was conducted in Barrick Bulyanhulu and North Mara Gold Mines in Bulyanhulu, Shinyanga region and North Mara in Mara region. Empirical evidence collected through document review, interviews, observation, informal consultation, pair-wise ranking and Focus Group Discussions (FGDs) suggest that large-scale mining has short and long terms harmful impacts on the right to a clean and health environment. Local communities in North Mara claimed that water pollution by Barrick Gold has caused the deaths of about 20 people and 700 to 1000 heads of cattle. In contrast, neither the government nor Barrick Gold admits the claims by local communities. Discontents over environmental pollution and eviction with little or without compensation generated a very hostile relationship between local communities and Barrick Gold, especially in North Mara where groups of youth have frequently mobilized to intrude on the mine.

Introduction

In the mid-1980s, Tanzania began to reform its legal and fiscal framework to attract and retain investors (Madete 2000; Akarrow 2002). The government enacted the National Investment Promotion and Protection Act in 1990. The Act established the Tanzania Investment Center (TIC) as a government agency mandated to manage and promote investment matters (Msambichaka *et al* 1994; Madete 2000; Akarrow 2002). Indeed, legal and fiscal reforms have permitted growth in Foreign Direct Investment (FDI) in Tanzania. A 2000

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survey by the United Nations Conference on Trade and Development (UNCTAD) named Tanzania as an attractive country for FDI in Sub-Saharan Africa. FDI inflows in Tanzania increased from USD 552 million in 2006 to USD 600 million in 2008, ranking the country among the top recipients of FDI in Africa (Tanzania Investment Center, 2008). The mining sector has attracted considerable FDI. In 2005, 43 percent of all FDI in Tanzania was in mining (Tanzania Investment Center 2006). Gold exports in 2009 brought in USD 1,076 million compared to USD 932.4 million in 2008, an increase of 15 percent (Bank of Tanzania 2010). Gold production increased from 39.8 tones in 2008 to 50 tones in 2009, an increase of over 10 percent. Tanzania was as of 2010 the fourth largest gold producer in Africa (Naluyaga 2010; Kamndanya 2010).

The growth of FDI in Tanzania is not only important economically but it impacts the lives of Tanzanians in different aspects, including human rights. However, the exact nature of the relationship between FDI on mining and human rights, in particular, and the right to a clean environment, is a matter of intense theoretical and empirical debate. Proponents of FDI, in particular, Liberals argue that FDI generates resources that enhance the protection and promotion of human rights in the recipient countries (Blanton and Lindsey 2005). With respect to FDI on mining, proponents maintain that activities of foreign mining companies in the developing countries protect and promote environmental sustainability by transferring environmentally friendly technology and modern environmental management techniques to the South. According to this view, the arrival of foreign mining companies allows local small-scale mining companies to copy the environmentally friendly technology and management techniques brought by foreign companies (Global Forum on International Investment 1999). Also, it is argued that multinationals bring highly-trained experts who can assist in conserving the environment in the recipient countries. Large-scale foreign mining companies provide the resources required for addressing environmental problems in developing countries (York *et. al* 2009; Global Forum on International Investment 1999).

Moreover, proponents posit that multinational mining companies are less likely to degrade the environment because they are more exposed to the environmental regulations of governments, shareholders, the International Chamber of Commerce and the International Organization of Employers (Quinlivan 2009; Mobey and McNally 1998; Borregaard and Dufey 2002). The International Chamber of Commerce and the International Organization of

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Employers have established environmental standards to guide the operation of multinationals throughout the world (Quinlivan 2009). In effect, foreign mining companies raise environmental standards in developing countries. An example, according to the Global Forum on International Investment (1999), is Mexico that has in recent years improved its environmental standards as a result of opening up her economy to foreign capital.

The argument that FDI improves environmental standards and promotes the right to a clean, safe and healthy environment in the South has nonetheless one major shortfall – it is not supported by sufficient empirical evidence from developing countries that have in recent years become major recipients of investors from the North. Accordingly, a contrasting view is skeptical about the Liberal view linking FDI and the promotion of human rights. According to this view, since developing countries suffer from economic hardships, FDI remains an important source of foreign exchange. As a result, developing countries often lower their environmental standards through soft regulations in order to attract and retain investors (Melin 2009; Nwete 2007). Environmental degradation by mining companies is a common phenomenon in the developing countries because these countries lack the capacity to hold investors accountable. In effect, mining companies in the developing countries self-regulate by choosing to follow the local regulations, adopt their standards or follow the international standards (World Wide Fund for Nature 2003). For example, in Indonesia, mining is carried out under the Special Contracts of Work (COW) that does not subject the mining companies to environmental regulations and paying royalties to the local communities (Mobey and MacNally 1998; Ballard 2001). Similarly, the privatization of copper mines in Zambia in the 1990s was accompanied by the government's attempts to lower the environmental standards in order to attract investors. For instance, in 2000 the Zambian government exempted the Anglo American Company from full compliance with environmental regulations (Friends of the Earth International 2005).

Opponents also maintain that since FDI operates under the liberal market principles that allow competition for profit-making and increasing production, the environment is often ignored. Likewise, because actors, such as mining companies have no property rights over the environment (for instance, air and water), they scarcely invest in environmental conservation (Mikler 2003; Ajwang 2009; York *et. al* 2009; Clark and York 2005). Given the fact that mining companies are only in rare cases the direct victims of environmental degradation caused by their activities, they often pay little

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attention to the environment from which they extract minerals. Also, since mineral resources extraction is an activity that ends after the exhaustion of minerals, mining companies do not always invest in the conservation of the environment (Ajwang 2009).

Bebbington (2008) argues that mining is a pollution-intense industry. The industry contributes less than 2 percent of the global Gross Domestic Product (GDP). However, it uses about 7 to 10 percent of the global energy. The industry is responsible for 13 percent sulfur dioxide emissions. The mining industry is also responsible for deforestation and loss of biodiversity. For instance, in the preparation of extraction sites, bulldozers remove the vegetation cover and layers of soil (The Environmental Law Alliance World Wide 2001). Large-scale gold mining uses cyanide, a very toxic metal that poses a threat to human life and wildlife, is used to free gold from the rock ores (The Environmental Law Alliance World Wide 2001; Bitala *et al* 2009). This makes environmental degradation inevitable. After the exhaustion of minerals, mining companies often abandon their wastes and pits, leaving a threat to human life and wildlife (The Environmental Law Alliance World Wide 2001; Ajwang 2009).

Traditionally, local communities establish themselves around rivers and streams. Rivers and streams are important for food production, recreation, cultural activities and spiritual practices. Mining companies pollute local communities' rivers and streams from cyanide spillage and acids. In a similar vein, mining activities divert or lead to the disappearance of rivers and streams, depriving local people of access to clean, safe and healthy water (Owusu 2005; Choma 2009). For example, mining activities at Wassa district, Ghana polluted the environment from cyanide spillages and diversion of rivers and streams (Wassa Association of Communities Affected by Mining 2004). In 2007, the Konkola Copper Mine (KCM) in Zambia polluted the Kafue River by its acidic effluents. People who were affected by the poisoned water and fish were neither compensated nor given medical attention by the mining company (Zambia Human Rights Network 2008). In 1995, August, a tailing dam of the Omai Gold Mine in Guyana broke because of heavy rain. About 3.2 liters of effluents were discharged into the Omai and Essequibo Rivers. The Omai Gold Mine did not provide any compensation to the people who were affected by the polluted water (Environmental Law Alliance World Wide 2001).

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Further, Owusu (2005) maintains that some mining companies have established their extraction sites near local communities' residents and welfare services, like hospitals. This has caused problems, such as the destruction of buildings and noise pollution. The extraction site of the Bogoso Gold Limited (BGL) in Ghana, for example, is very close to Prestea town. The mine is located a few meters from the Prestea Government Hospital; as a result, blasts from the mine traumatize the patients. Blasts from the mine also damage local people's properties like houses and television sets. Ghana does not have a law establishing the allowable distance between the mines and residences.

In connection to the second view criticizing the connection between FDI and human rights promotion, the current the paper argues that FDI in mining has short and long terms harmful impacts on the right to a clean and health environment for local communities residing near the mines. According to local communities in North Mara, water pollution by Barrick Gold has caused the deaths of about 20 people and 700 to 1000 head of cattle. Discontents over environmental pollution and eviction with little or without compensation generated a very hostile relationship between local communities and Barrick Gold, especially in North Mara. Barrick North Mara Gold Mine is currently guarded by the Tanzanian police because the mine's private security failed to prevent the frequent intrusion of local people who steal gold rocks. In contrast, neither the government nor Barrick Gold admits the claims of local communities.

The paper is divided into five sections. Following the introduction is section two that provides a description of the study areas together with the research methods. Section three explores the evolution of the right to a clean and health environment. In this section, I make a case that growing concerns about environmental change and environmental degradation has allowed the right to a clean environment to gain recognition and legal status in several international conventions and declarations as well as in the constitutions of several countries. The fourth section is an analysis of the impact of large-scale mining on the right to a clean environment. In this section, it is argued that large-scale gold mining in Bulyanhulu and North Mara has adverse impacts on water, air, land and forests. In the last section, concluding remarks are provided.

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Study areas and methods

Data collection was conducted for the period of three months between March and June 2010 at Bulyanhulu and North Mara Gold Mines. Bulyanhulu is the largest gold mine in Tanzania, which together with North Mara, is owned by Barrick Gold Corporation, the world's largest gold mining company. Apart from Bulyanhulu and North Mara, Barrick also owns two other gold mines in Tanzania, namely; Buzwagi and Truwaka. Bulyanhulu Gold Mine is located in the northwestern part of Tanzania, Kahama district, Shinyanga Region, about 55 kilometers south of Lake Victoria. It is an underground mine that uses long hole and drift to extract minerals. Bulyanhulu Gold Mine is closely surrounded by the following villages: Kakola, Bushimwe, and Namba Tisa. On the other hand, North Mara Gold Mine is found in the northwestern part of Tanzania, Mara region, Tarime district, some 100 kilometers East of Lake Victoria and just South of the Kenya border. It is an open pit mine consisting of three pits: Nyabirama, Nyabigena and Gokona (URT 2005; Barrick 2009b). The mine is surrounded by the following villages: Kewanja, Nyangoto, Matongo, Genkuru, and Kerende.

Five qualitative methods of data collection were employed. The first method involved interviews with officials of non-governmental, governmental organizations, local community leaders, teachers, employees of mining companies and people living near the mines, a total 35 participants were interviewed. Interviews were first held in Bulyanhulu and later in North Mara. At Bulyanhulu, I visited Kakola, Namba Tisa and Bushimwe villages and at North Mara, I visited Kewanja, Matongo and Nyangoto villages. Prior to and after visiting Bulyanhulu and North Mara, interviews were conducted in Dar es Salaam and at least one official from each of the following governmental and non-governmental organizations was interviewed: Lawyers Environmental Action Team (LEAT), Legal and the Human Rights Center (LHRC), Christian Council of Tanzania (CCT), National Council of Muslims of Tanzania (BAKWATA), Revenue Watch, National Environmental Management Council (NEMC) and the Ministry of Energy and Mineral Resources. These organizations were selected because they are directly or indirectly involved with FDI in mining and human rights. For example, the Ministry of Energy and Mineral Resources manages mineral resources and issues mining licenses to mining companies. BAKWATA, LEAT, CCT and LHRC are non-governmental organizations advocating for the rights of people living near the mines, and they do research and provide legal assistance. NEMC is a government institution responsible for managing

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environmental issues, such as reviewing Environmental Impact Assessment (EIA) reports.

The second qualitative data collection method was FGD involving people living near the mines to obtain in-depth information on local people's experience and perceptions over the impact of mining companies on the right to a clean environment. At Bulyanhulu, 4 FGDs (two composed of men between 18 and 45 years, one composed of elders above 45 years and another with a mixture of men and women), were organized, while 5 FGDs (two comprising men between 18 to 45 years, one composed of elders above 45 years and two with a mixture of men and women), were organized at North Mara. Thirdly, existing documents, such as reports, journals and books on FDI in mining and the right to a clean, safe and healthy environment were examined to assess existing literature and scholarship. Fourthly, the study employed observation method that involved visiting Bulyanhulu and North Mara and observing directly the impact of the mines on the environment and people's health and the interaction between mining companies and local communities. This method was especially useful for gathering information on sensitive issues, such as the externalities of mining companies on the physical environment and the people residing near the mines.

Lastly, the study employed a pair-wise ranking method that involved asking local communities of Bulyanhulu and North Mara to rank the environmental problems caused by mining companies. This technique allowed people to elucidate the most pressing environmental problems caused by mining companies. Data gathered through documents, FGDs, interviews, pair-wise ranking and observation were analyzed using content analysis technique helping to understand and discover what, how and why people talk about FDI in mining and human rights in Tanzania. The next section sheds light regarding the right to a clean and health environment and its foundation. The subsequent section provides an analysis regarding the evolution of the right to a clean and health environment.

Evolution of the Right to a Clean, Healthy and Safe Environment

The right to a clean, healthy and safe environment has gained recognition and legal status in several international conventions and declarations as well as in the constitutions of several countries due to rising concerns about environmental change and environmental degradation. In order to curb rising concerns about the persistence of environmental degradation as result of human activities, such as agriculture and industrialization, the United

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Nations Conference on human environment was held in Stockholm, Sweden in 1972. However, while not legally binding, the Stockholm Declaration formed the basis for “modern international environmental law” (Nijhawan 2004, p. 4; Vukasovic 2006). The first principle of the Stockholm Declaration (1972) states:

Man has the fundamental right to freedom, equality and an adequate condition of life, in an environment of a quality that permits a life of dignity and well-being, and he bears the responsibility to protect and improve the environment for present and future generations.

Attempts to link the human environment and human rights continued in the United Nations in the 1980s. For instance, in 1989, the United Nations Commission on Human Rights formed a Sub-Commission headed by Zatma Zohra Krestin to investigate the need for a right to a clean, healthy and safe environment. The Krestin Commission submitted its report in 1994. The first principle of this report concludes that “human rights and the environment are indivisible” (Nijhawan 2004, p. 6). In case the right to a clean, safe and healthy environment is violated, people have the legal right to claim for it under domestic or international courts of law (Vukasovic 2006).

The United Nations Environmental Program (2004) points out three dimensions linking the environment and human rights. First is the right to a clean, safe and healthy environment as a basis for the right to life. In effect, environmental pollution can violate people’s right to life. Second, environmental destruction can compound discrimination against vulnerable people in the society, given that vulnerable people are more likely to live in areas where environmental conditions are worst. Third, the environment is the source of people’s basic needs such as food and shelter; as such, environmental degradation creates difficulties in meeting basic human needs.

As a response to the Stockholm Declaration that obliged states to form institutions and legislation to mitigate environmental degradation and to advise governments on environmental issues, the African Charter on Human and Peoples’ Rights (1981)² recognized a right to a clean, healthy and safe environment. Article 24 of the Charter provides that “all peoples have the right to a general satisfactory environment favorable to their development.” The Charter also imposes an obligation on African states to ensure a sustainable environment and development for all peoples.

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In Tanzania, the National Environmental Management Act was created in 1983 to regulate environmental issues. The Act formed the National Environment Management Council (NEMC) as a government agency responsible for managing environmental issues (Pallangyo 2007; Lissu 1999). However, the National Environmental Management Act (1983) did not oblige project proponents (for example, mining companies) to conduct Environmental Impact Assessments (EIAs) to mitigate the negative impact of their activities on the environment. As a consequence, the National Environmental Management Act (1983, No. 19) was replaced by the National Environmental Management Act (2004, No. 20). The 2004 Act retained NEMC from the National Environmental Management Act (1983). However, it also created the National Environmental Regulatory Body (NERB) to manage environmental issues, for instance, to review EIAs at district and sectoral levels (Pallangyo 2007). Article 4 (1) of Tanzania's National Environmental Management Act (2004) concludes that "every person living in Tanzania shall have a right to a clean, safe and healthy environment."

The National Environmental Management Act (2004) and the Mining Act (1998) require all mining companies to carry out EIAs prior to the beginning of their activities. In order to control the negative impacts of mining on the environment, every applicant for a mining license is required by section 38 (4) (d) of the Mining Act (1998) to submit an "Environmental Management Plan (EMP) and a proposal to prevent pollution and the treatment of wastes." Mining companies can only be granted a permit to start their activities if they possess an EIA certificate, which is endorsed and signed by the minister responsible for environment upon the recommendations of NEMC. In addition, the Mining Act (1998) requires the involvement of local people in EIAs. NEMC reviews the approved mining projects after two years and thereafter every five years (Kitula 2006).

However, Tanzania's EIAs are surrounded by problems. To be effective and sustainable, EIAs require committed leadership and the involvement of all stakeholders, like local people and CSOs. Even so, Tanzania's EIAs lack these elements (Katima 2000; Sosovele, 2011). Stakeholders interviewed and those involved in FGDs claimed that they neither accessed the EIA reports nor were they involved in their production. Neither local people nor officials of CCT, BAKWATA, LEAT and Revenue Watch had seen a copy of an EIA report. Local communities said that they do not know if they are entitled to access the EIA reports, as required by the Mining Act (1998) and the National

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Environmental Management Act (2004),³ which requires the EIA reports to have inputs from stakeholders (for instance, local communities, CBOs and FBOs).

The New Mining Policy (2009) acknowledges that Tanzania lacks enough trained personnel and sufficient funds to enforce environmental regulations. Katima (2000) and Lissu (1999) maintain that because of economic considerations and collusion of political leaders with foreign investors, some projects have been approved despite a negative assessment and public opposition. The African Fishing Company (AFC) prawn farm in the Rufiji River Delta, for example, was opposed by both NEMC and the public. NEMC's EIA review found that the project was likely to degrade the Rufiji Delta from poisonous effluents and clearing mangroves. However, in 1997, the government approved the proposed AFC prawn farming in the Rufiji Delta (Katima 2000; Lissu 1999). According to Lissu (1999), the decision was not made public.

In addition, the outcomes of EIAs are likely to be influenced by the investors. Since mining companies hire and pay the experts to conduct EIAs, for example, they expect positive evaluations of their projects. Similarly, EIAs are likely to be inaccurate since they are often done by foreign experts who do not understand the local environments as well as Tanzanian experts do (Katima 2000). EIAs in Tanzania do not involve the communities affected by projects, like mining; this creates a loophole for the fabrication of results (Mhinda 2009). In a similar vein, multinationals willing to invest in the exploitation of natural resources in Tanzania collude with political leaders; as a result, the environment is sacrificed in favor of investors (Lissu 1999). Though the Mining Act (1998) requires an EIA to be done prior to the approval of any mining project, in practice this has not always been the case. For example, the EIA for the Bulyanhulu Gold Mine was concluded in 1999, though the government had granted a mining license to Sutton Resources in 1994 and the small-scale miners were evicted in 1996 (LEAT 2003c).⁴ Similarly, the EMP and the Social Impact Assessment (SIA) for North Mara Gold Mine were concluded in 2004 and 2005, respectively, though the mine started operation in 2000 (Placer Dome 2005). The subsequent section presents and analyses the impact of FDI in mining on the right to a clean, healthy and safe environment for local communities living near the mines in Bulyanhulu and North Mara Gold Mines.

Impact of Barrick Gold Mines on the Right to a Clean Environment

In this section, I present and analyze empirical evidence regarding the impact of Barrick Bulyanhulu and North Mara Gold Mines on the right to a clean, healthy and safe environment for local people residing near the mines. The section addresses the following - the impact of large-scale gold mining on water, air, land, forests and buildings of people residing near the mines. Further, the section presents and analyses finding regarding mining and noise pollution. Below I start by examining the impact of large-scale mining on water.

Water Pollution

According to the interviewees and those involved in FGDs at North Mara, water pollution is the most pressing environmental problem caused by Barrick North Mara Gold Mine. This is summarized in table 1 which indicates participant's pairwise ranking of environmental problems in North Mara and Bulyanhulu. According to these participants, from 2005, the mine's tailing dams started to spill chemicals in the villagers' farms, settlements and water sources, especially the Tigithe River, which is the main source of water for local communities and livestock.⁵ The Ward Chancellor and the Ward Executive Officer of Matongo claimed that water pollution by Barrick's tailing dams caused the deaths of more than 20 people and more than 1000 livestock.⁶ One of the residents of Matongo village, whose family lives about 40 meters from a mine's tailing dam and the rock wastes, asserted that he lost six cattle and four goats as a result of water pollution by Barrick Gold. According to this villager, during the rainy season the tailing dams are filled by rain, resulting in a spillage of chemicals into the farms and residences.⁷ In line with the villagers' position, Boylan (2009) argues that water pollution by Barrick North Mara caused the deaths of about 20 people and 700 to 1000 cattle. Similarly, *Mwanahalisi newspaper* (2010) reported that 43 people, 401 head of cattle, 523 goats, 185 sheep and 227 dogs in Nyakunguru, Nyarwana, Waigita and Nyangoto villages died as a result of water pollution by Barrick Gold. Table 3 summarizes interviewee's pairwise ranking of environmental problems caused by large-scale mining in North Mara and Bulyanhulu.

Table 1: Interviewees’ Pair-wise Ranking of Environmental Problems⁸

Environmental Problems	Rank at Bulyanhulu	Rank at North Mara
Water pollution	3 rd	1 st
Air Pollution	1 st	3 rd
Land Pollution	2 nd	4 th
Diversion of water sources	4 th	6 th
Deforestation	6 th	7 th
Noise pollution	5 th	5 th
Collapse of buildings	-	2 nd

Source: Field research, March, 2010.

One of the participants, a 69-year old man who lives at Nyangoto village, said that his skin became irritated and later developed scratches when he took a bath in a stream along Barrick North Mara Gold Mine.⁹ According to this participant, Barrick Gold offered him 150,000/= Tanzania Shillings (about USD 75) for medical treatment and to stop revealing the information to the news media. Based on my observation, this resident’s body has developed skin burning scratches, especially around the neck. However, it remains unclear if these scratches have been caused by Barrick’s water pollution, since there is no medical proof. The said resident of North Mara thanks CCT, TEC and BAKWATA for helping him to get medical treatment at Muhimbili National Hospital in Dar es Salaam. These claims were confirmed by an official of CCT who revealed a receipt of payment issued by the Muhimbili National Hospital for the treatment of the said resident of North Mara and 7 other victims of Barrick’s alleged water pollution.¹⁰ According to this official, CCT, TEC and BAKWATA have used more than 10 million Tanzania shillings (about USD 5,000) for transport, accommodation and treatment of people who claim to be affected by Barrick’s poisoned water. Nonetheless, the receipt revealed to me by this official of CCT did not expressly indicate whether the 8 patients were affected by Barrick Gold’s water pollution.

The Public Relations Officer (PRO) of Barrick North Mara Gold Mine dismissed the allegations of local people, CCT, BAKWATA, TEC and LEAT regarding the mine’s water pollution.¹¹ According to the PRO, Barrick Gold has never received any complaint from local communities regarding water pollution by its tailing dams. He rejected allegations of a 69 years old man that he was given 150,000/= Tanzania shillings by Barrick Gold for medical treatment and to stop revealing his health condition to the media. The position of the PRO contradicts a Barrick report to the Parliamentary

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Committees on Land, Environment and Energy in July 2009. In this report, Barrick North Mara Gold Mine admitted the leakage of water from its tailing dams.

Following the alleged incident of water pollution by Barrick North Mara Gold, in July, 2009, NEMC released a report requesting the government to either close the mine or relocate local communities. According to NEMC, the government made a wrong decision to allow a gold mine to be established near residences. NEMC ordered Barrick North Mara Gold Mine authorities to prevent the leakage of contaminated water from entering the Tigithe River, farms and residences. According to NEMC, in August 2009, Barrick replaced the carpets in order to control the spillage of chemicals from the tailing dams.¹² However, interviewees and those involved in focus group discussions question whether Barrick Gold replaced the carpets since the leakage of water from the tailing dams persists.¹³ In an interview on 27th May 2010 in Dar es Salaam, an official of NEMC argued that Barrick Gold replaced the carpets in the tailing dams, but NEMC did not provide a clear position regarding compensation of villagers claiming to be affected by Barrick's water pollution. During field visit, however, at Matongo and Nyangoto villages, I observed leakage of water from the tailing dams to nearby farms and residences. This incident contradicts NEMC's position that Barrick Gold replaced the carpets to control the leakage of water from the tailing dams.¹⁴

The Explosives Act (1963) establishes 100 meters as the allowable distance of mines (buffer zone) from residences in Tanzania. Nevertheless, some residences at North Mara are situated less than 50 meters from the mine's tailing dams and the rock wastes. The Ministry of Energy and Mineral Resources admitted that about five families along the North Mara Gold Mine are in the danger zone (buffer zone) of the mine.¹⁵ In the view of the Ministry, those families rejected Barrick's compensation offer because they think it was inadequate. However, one of the residents of Matongo village, whose family is about 35 meters from the Barrick's tailing dam and rock wastes, claimed that he asked many times for Barrick Gold to provide compensation and to relocate him, but the mine was reluctant.¹⁶ As earlier noted, the spillage of water from the mine's tailing dam to residences of Matongo was observed during field visit in March 2010.

Commissioned by CCT, BAKWATA and TEC, a study by Bitala *et al* (2009) examined the alleged incident of water pollution by Barrick North Mara

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Gold Mine. The study assessed the amount of heavy metal and cyanide in the water and land along the North Mara Gold Mine. The current amount of cyanide and heavy metals were compared with the amount that was available when the North Mara Gold Mine started its operation in 2000. The study concluded that "heavy metals and cyanide in the *soil* and water are higher than the standards recommended by the World Health Organization (WHO), Tanzania and the United States Environmental Protection Agency (EPA)." At Kwinyunyi site, for instance, it was found that the level of cyanide in the soil was 0.63 to 0.84mg/kg higher than the recommended 0.1mg/kg Tanzania's standards. In this respect, there is a leakage from Barrick's tailing dams. In addition, Bitala *et al* (2009) observed a higher amount of cyanide and heavy metals in the Tigithe River suggesting that people and animals along the North Mara Gold Mine are vulnerable to the mine-induced water and land pollution.¹⁷ This is supported by Nyatwere, Mkabwa and Zachariah (2012) and Mganga (2014) maintaining that the presence of heavy metals has affected the distribution pattern of plants in areas surrounding North Mara. Further, a related study conducted in the Mara River Basin by Kihampa and Wenaty (2013, p. 15) concluded:

In most sites, heavy metals and nutrients concentrations detected were above the recommended WHO and national limits for drinking water. Mining wastes were considered to be major sources of heavy metals, while nutrients were considered to originate from agricultural runoff and weathered agricultural soils. All the parameters were measured by standard methods.

In July, 2009, Barrick North Mara Gold Mine admitted the leakage of effluents from its tailing dams. However, Barrick claimed that the leakage resulted from the villagers' stealing the carpets that prevent the outflow of chemicals from the tailing dams. However, Barrick Gold alleged that villagers used the stolen carpets for roofing their houses (Bitala *et al* 2009; NEMC 2009). However, Barrick's allegations against villagers were criticized by the Parliamentary Committees on Land, Environment, Minerals and Energy, that visited North Mara in July 2009 to investigate the alleged incident of water pollution. Members of the Parliamentary Committees on Land, Environment, Minerals and Energy alleged that villagers' complaints against the mine-induced water pollution started to be heard earlier than 2009 (NEMC 2009). Already, studies, such as Lissu (2006) had reported that Barrick North Mara Gold Mine released its chemical effluents into the villagers' land and the Tigithe River. Similarly, the report of elders and local

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leaders of North Mara (2009) revealed that the leakage of water from the Barrick's Gokana and Nyabigena pits began in 2005.¹⁸ According to villagers, this problem was reported to the PRO of Barrick Gold but the mine ignored it. Also, the report of elders and local leaders held that though a representative of the Vice President Office on the Environment visited Kewanja village on 15th September, 2005 and ordered Barrick Gold to construct a tailing dam at Gokana pit in order to prevent the leakage of poisonous water, nothing has been done. Nonetheless, in an interview on 26th March, 2010 at North Mara, the PRO of Barrick North Mara Gold Mine argued that Barrick Gold has never received any complaint from villagers regarding the leakage of tailing dams.

The alleged incident of water pollution at North Mara contradicts the Barrick Responsibility Report (2009) maintaining that the mine recycles water and does not discharge its poisonous effluents into the environment. The incident also violates Barrick's commitment to the International Multi-Stakeholders Group (IMSG) that established standards for "the manufacture, uses, transport and disposal of cyanide." As a member of IMSG, Barrick is obliged to certify and audit its mines so as to regulate the human and environmental impacts of cyanide. However, according to Bitala *et al* (2009), Barrick has never audited the North Mara Gold Mine that was certified by the IMSG in May 2009.

For Bulyanhulu, participants from Mwabakikulu suburb, Kakola village, complained about water pollution by the Bulyanhulu Gold Mine's sewage. According to these villagers, sewage emanating from the mine discharges poisonous water in the nearby farms, residences and the Mwabakikulu River (a river that feeds into Lake Victoria and is a main source of water for residents of Bulyanhulu). According to these residents, when the poisonous water is released, nearby grasses dry out.¹⁹ When in the field at Bulyanhulu, I observed sewage running from Bulyanhulu Gold Mine to residences and Mwabakikulu River. Some of the grasses along this sewage had dried out. NEMC admitted that it is not aware of the mine-induced water pollution as alleged by residents of Mwabakikulu suburb, Bulyanhulu.²⁰ It is worthwhile noting here that in comparison with North Mara, water pollution was not as a severe problem at Bulyanhulu because Bulyanhulu Gold Mine is situated some distance away from villagers' farms and residences, while North Mara Gold Mine is very close to residences and farms.

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In connection to concerns about water pollution, local communities in Bulyanhulu also complained about that activities of Barrick Gold caused the diversion and afterwards the disappearance of some water sources that local people depended on. At Bulyanhulu, for instance, villagers alleged that they used to have a water source at Stamico village that supplied water throughout the year but that was encroached upon by the mine in 1996.²¹ Even though Barrick Bulyanhulu and North Mara Gold Mines get supplies of water from Lake Victoria and River Mara, respectively, this access has not been available to the villagers. Villagers were skeptical of drilling wells to get water because of fears about the leakage of poisonous chemicals from the mines' tailing dams.²²

Environmental pollution, especially water pollution by Barrick Gold and other gold mines (for instance Geita Gold Mine) in the Lake Victoria Zone, is a time-bomb whose impact will be felt by the other neighboring countries (Kenya and Uganda), whose people's livelihood also depend on Lake Victoria.²³ Already, according to Choma (2009), environmentalists from Tanzania and Uganda have warned about the possibility of the leakage of cyanide into Lake Victoria as a result of large-scale mines in the Lake Victoria Zone. The Tigithe and Mwabakikulu Rivers, for instance, which people of North Mara and Bulyanhulu claim have been polluted by Barrick Gold, flow into Lake Victoria.

Based on field observation, it is worthwhile maintaining here that the alleged incident of water pollution by mining companies in the Lake Victoria Zone and the failure of the government to act promptly could generate a pattern of conflict similar to that in the Nigeria's Niger Delta. Environmental degradation by oil companies in the Niger Delta cause conflict between the oil companies and people. This conflict can be seen in peoples' acts of kidnapping oil company workers and attacking the oil and gas infrastructure in the region (Nwete 2007). In North Mara, there is already friction between Barrick Gold and people of North Mara. According to the participants and Saunders 2008, among the root cause of this friction is environmental pollution and impoverishment arising from the activities of Barrick Gold.²⁴

The friction between Barrick Gold and local communities in North Mara manifest in terms of frequency acts of local communities to intrude in the mine to steal gold rocks and disrupt activities of the investor. Barrick North Mara Gold Mine is currently guarded by Tanzanian police officers to prevent the intrusion of local people.²⁵ According to the Ministry of Energy and

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Mineral Resources, Barrick Gold requested the government to provide security assistance since the mine's security officers failed to prevent villagers from trespassing on the mine.²⁶ Several local people of North Mara asserted that at least one villager dies or gets injured every day because of clashing with the police officers and Barrick's security guards.²⁷ At Matongo village, there is a place known as *soko la dunia* (world market), where local people assemble before and after encroaching the mine. At the market, dealers of the gold rocks stolen from the mine congregate. According to the participants, especially young men of North Mara, gold is the only 'cash crop' that local communities can depend on, but the government gave everything to the foreign investor. Respondents, especially young men of North Mara, asserted that they do not see the act of intruding on the mine as an offense since it is the mine that has intruded on the local people. Young men whom I found at the "*soko la dunia*" claimed that "we are not stealing rather we are taking what is ours."²⁸

On December 14th, 2008, for instance, Barrick North Mara Gold Mine was raided by a group of about 3,000 to 4,000 villagers. The intruders, who were carrying stones, overpowered the mine's security guards. During the confrontation, one person among the intruders died, while properties worth USD 15 million were destroyed (Saunders 2008). In essence, the relationship between North Mara Gold Mine and the local people is very hostile making operation of the investor difficult.

Air pollution

Local people interviewed and those involved in FGDs complained about the movement of vehicles in and outside the mines and blasts that introduce dust and smoke. According to these respondents, while the mining companies have constructed paved roads inside the mines, the main roads crossing the villagers' residences are in poor condition. At Namba Tisa and Kakola villages, Bulyanhulu, respondents complained that the mine's vents of dirty air pollute the atmosphere. According to these respondents, dirty air released by these vents cause skin and eye pains.²⁹ On 14th April, 2009, the Chairperson of Mwabakikulu suburb reported an incident of air pollution by Barrick's vents to the Village Land Council of Kakola. However, in its response on 16th May 2009, Barrick Bulyanhulu Gold Mine dismissed local people's allegations arguing that it has been scientifically proven that Barrick's vents of dirty air cause no harm to human health and the environment.³⁰ Air pollution is a more serious problem at North Mara than Bulyanhulu because the former is an open pit mine, whose blasts take place

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near the surface, resulting into introduction of heavy dust to the atmosphere. I observed the emission of a heavy blanket of dust during blasts by Barrick North Mara Gold Mine. This situation was not observed at Bulyanhulu where the mine is underground.

Land pollution

Local communities from Bulyanhulu and North Mara claimed that Barrick Bulyanhulu and North Mara Gold Mines dump waste rocks and discharge poisonous water from the tailing dams into villagers' farms and residences. At Mwabakikulu suburb, Kakola village, Bulyanhulu, local communities charged that Barrick's poor management of waste rocks causes land pollution since the waste rocks contain chemicals such as mercury and cyanide. According to these local people, rice planted in their farms has dried as a result of the spillage of chemicals contained in the waste rock dumps.³¹ During field in March and April at Bulyanhulu, I witnessed the farms of these villagers in which the rice had dried out in some parts. Along the farms, I observed dumps of waste rocks, which could be the cause of land pollution as alleged by the villagers.

Apart from land pollution, poor management of waste rock dumps poses a danger to human health since some villagers collect and process waste rocks in order to secure gold. At North Mara, villagers complained that land pollution by Barrick's waste rock dumps and chemicals affected farming in the villages near the mine (for example, Kewanja, Matongo, Kerende, Genkuru and Nyangoto villages).³² This trend was supported by Bitala *et al* (2009), who observed a high proportion of cyanide and toxic metals in the land along the North Mara Gold Mine.

The Environmental Management Act (2004) requires all the mining projects that started prior to 2004 to be audited. NEMC admitted that the audit of Barrick Bulyanhulu and North Mara Gold Mines observed good performance in some areas, but there were also areas that had deficiencies, which the mines' authorities were instructed to address. According to NEMC, the mines have addressed some of the deficiencies and continue to address the rest. Barrick Gold is preparing management plans for waste rock dumps and tailing storage facilities.³³ In this respect, since Barrick Bulyanhulu and North Mara Gold Mines have not yet submitted the management plans for waste rocks and tailing storage facilities as required by NEMC, the chance for environmental pollution and degradation, as alleged by local people, CCT, TEC, LEAT and BAKWATA, remains high. The same can be said that since

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NEMC's audit results for Barrick Bulyanhulu and North Mara Gold Mines found some deficiencies (for example, these mines have not submitted the rock waste dump management plans), it appears that the approval of these mines was against the Mining Act (1998) and the Environmental Management Act (2004). In effect, the chance for environmental pollution is high.

Deforestation

Deforestation is one of the most pressing environmental problems caused by large-scale mining, especially at North Mara. North Mara Gold Mine is an open pit mine whose operation takes place along the surface land, and therefore involves clearing vegetation. Barrick Bulyanhulu and North Mara Gold Mines have expropriated large areas for the construction of buildings, schools, tailing dams, roads, farms and waste rock dumps. At Bulyanhulu, for example, an area of 120 hectares that used to have vegetation has been expropriated and cleared by Barrick Gold for jatropha farming.³⁴ Despite the observable deforestation, especially at North Mara, very few respondents ranked it as a pressing environmental problem caused by mining. This is due to the fact that local communities are not directly affected by deforestation and that the impacts of deforestation due to mining activities are hard to tell in the short of time. I observed deforestation at both North Mara and Bulyanhulu during field research at Bulyanhulu in March and April, 2010 suggesting that mining companies invested little in planting and conserving forests in the areas of their operation. This also suggests that profit making of mining companies outpaces the quest for the promotion of the right to a clean and healthy environment for local communities living near the mines.

Collapse of Buildings and noise pollution

Collapse of buildings as a result of blasts appears to be one of the most pronounced problems at North Mara, since it is an open pit mine with blasts taking place near the surface. According to the Chairperson and the Village Executive Officer of Nyangoto village, villagers have reported more than 30 cases of house damages resulting from Barrick's explosions.³⁵ Several villagers of Nyangoto claimed that their houses developed cracks as a result of the mine blasts. According to these villagers, officials of Barrick Gold regularly inspect the houses damaged by the mine blasts but no compensation is provided.³⁶ During field visit I witnessed the cracks in the buildings of these villagers. These cracks appear to pose a threat to the residents. The destruction of local communities' houses by blasts from North

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Mara Gold Mine has been inevitable considering that the mine is located very close to residences.

Also, interviewees and those involved in FGDs at Bulyanhulu and North Mara claimed that the movement of vehicles in and out the mines, blasts, and the operation of machines cause noise pollution. Local people from Namba Tisa, Kakola and Bushimwe villages, Bulyanhulu, for instance, complained that Barrick's vents of dirty air cause noise pollution. Similarly, respondents, especially women of Matongo, Kewanja, Nyangoto and Kewanja villages, North Mara complained that noise pollution resulting from blasts cause ear problems, blood pressure and sleepless nights.³⁶ I observed noise pollution caused by Barrick's vents at Namba Tisa, Bushimwe and Kakola villages, Bulyanhulu. The vents appear to be the source of noise pollution since they are situated near the residences. At North Mara, I witnessed a vibration of land caused by Barrick's blasts.

Conclusion

During the previous two decades Tanzania reformed its legal and policy frameworks to open up door for foreign capital, marking a shift from the *Ujamaa* socialism to neo-liberal ideological economic policies. The reforms have indeed allowed growth in FDI in which a 2000 survey by the UNCTAD named Tanzania as an attractive country for FDI in Sub-Saharan Africa. The mining sector has attracted considerable FDI. The current paper unveiled, however, that the growth of FDI in mining has negative impacts on the right to a clean, healthy and safe environment for local communities living near the mines in North Mara and Bulyanhulu. North Gold Mine is located very close to residences of local communities making water, land and noise pollution inevitable. Accordingly, during field visit a leakage of water from Barrick's tailing dams was accordingly observed at Nyangoto, Kewanja and Matongo villages. The violation of the right to a clean, healthy and safe environment, coupled with claims about impoverishment by Barrick Gold, have created tension between the mines and local people, especially at North Mara where youth have severally mobilized to intrude in the mine. This leads to frequent regular deaths and injuries as a result of confrontations with police officers and Barrick's security guards. The friction between Barrick Gold and local people of North Mara has some similarities with Nigeria's Niger Delta where local people kidnap oil company workers and destroy oil company equipment.

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Empirical evidence outlined in this paper support a contrasting view, which is skeptical about the liberal argument linking FDI and the promotion of human rights. In connection with the findings, it is worthwhile reiterating the argument that since developing countries suffer from economic hardships, they have often been lowering their environmental standards and sacrificing rights of local communities to attract and retain foreign capital. Indeed, environmental audits of NEMC unveiled deficiencies in Barrick's management of rock wastes and tailing storage facilities. This is manifesting in the complaints of local communities and CSOs regarding water and land pollution by mining companies. But the Tanzania government sides with the investors fearing to dispute its neo-Liberal economic policy and to lose the economic benefits of large-scale mining. If no actions are taken to address impending cases of environmental degradation in the extractive industry, the violation of the right to a clean, healthy and safe environment is also most likely to recur in the recently established natural gas projects and the anticipated oil industry in Tanzania.

Notes

1. The African Charter on Human and Peoples' Rights was adopted in 1981 and came into force in 1986.
2. Local communities from Bulyanhulu, North Mara, LEAT, LHRC, BAKWATA, Revenue Watch and CCT made this claim in interviews and FGDs on 15th March to 15th June 2010.
3. This claim was also made by the officials of LEAT in an interview on 30th April 2010, in Dar es Salaam.
4. This claim was made by local people of North Mara in the interviews and FGDs in March, 2010 at North Mara.
5. The Ward Chancellor and the WEO of Matongo Ward made this claim in an interview on 24th March, 2010 at Matongo Village, North Mara.
6. This claim was made by one of the villagers of Matongo villager in an interview in March, 2010, Matongo Village at North Mara.
7. The ranks of this table were obtained by asking respondents from Bulyanhulu and North Mara to rank the most pressing environmental problems caused by Barrick Gold mines.
8. Interview with a resident of North Mara on 22nd March 2010 in North Mara.

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9. An official of CCT made this statement in an interview on 28th March, 2010, in Dar es Salaam.
10. PRO of Barrick North Mara Gold Mine made this claim in an interview on 26th March, 2010 at North Mara.
11. The Director General of NEMC, handed over NEMC's report regarding water pollution by Barrick North Mara Gold Mine to the Parliamentary Committees on Land, Environment, Minerals and Energy in July 2009.
12. Interviews and FGDs with local communities in North Mara, March and April 2010.
13. Field visit in March 2010.
14. An official of the Ministry of Energy and Mineral Resources made this statement in an interview on 12th April, 2010 in Dar es Salaam.
15. Interview with a resident of Matongo village on 22nd March, 2010 at North Mara.
16. The Tigithe River is a source of water for people and animals in the vicinity of the North Mara Gold Mine.
17. The Report of elders and local leaders of North Mara was presented to the Parliamentary Committees on Land, Environment, Energy and Minerals, which visited North Mara on 6th July 2009 to investigate the alleged incident of water pollution by Barrick Gold. I got this report from the office of the Ward Chancellor of Kewanja on 25th March 2010 at North Mara.
18. Residents of Mwabakikulu suburb, Kakola village made this claim in an interview on 16 and 17th March 2010 at Bulyanhulu.
19. An official of NEMC made this claim in an interview on 27th May 2010 in Dar es Salaam.
20. Villagers from Bulyanhulu made this claim in the interviews and FGDs in March 2010 at Bulyanhulu.
21. Respondents from Bulyanhulu and North Mara made this claim in the interviews and FGDs in March 2010 at Bulyanulu and North Mara.
22. This claim was made by an official of Revenue Watch in an interview on 29th March, 2010, in Dar es Salaam. Tanzania's Lake Victoria zone comprises of Mwanza, Shinyanga and Kagera regions. The region is rich in gold, and large-scale gold mines established in this region include Geita, Buzwagi, North Mara, Bulyanhulu and Tulawaka.
23. Local people of North Mara made this claim in the interviews and FGDs from 21st to 26th March, 2010 at North Mara.

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24. Respondents of North Mara made this claim in the interviews and FGDs from 21st to 26th March, 2010 at North Mara.
25. This claim was made by one of the senior officers of the Ministry of Energy and Mineral Resources in an interview on 12th April, 2010, in Dar es Salaam.
26. This claim was made by several respondents of North Mara in the interviews and FGDs from 21st to 26th March, 2010 at North Mara.
27. These claims were made by almost every interviewee and those involved in the FGDs from 21st to 26th March 2010 at North Mara.
28. This claim was made by respondents of Mwabakikulu suburb, Kakola village, Bulyanhulu in the interviews and FGDs on 17th March 2010.
29. I got the copies of letters written by Barrick Gold from the Village Land Council of Kakola.
30. Interviews and FGDs with residents of Mwabakikulu suburb, Kakola village, Bulyanhulu, March 2010.
31. Villagers made this claim during interviews and FGDs in March, 2010 at North Mara.
32. An official of NEMC made this statement in an interview on 7th May 2010, in Dar es Salaam.
33. Local communities made these claims during interviews in March and April 2010 at Bulyanhulu and North Mara.
34. The Chairperson and the Village Executive Officers of Nyangoto village made this statement in an interview on 23rd March, 2010 at North Mara.
35. Complaints of these villagers were made in the interviews on 22nd March 2010 at North Mara.
36. Interviews and FGDs with residents of North Mara and Bulyanhulu in March and April 2010.

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