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PLAUSIBLE POLICY FRAMEWORK TO PROMOTE SUSTAINABLE ARTISANAL AND SMALL-SCALE MINING

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ABSTRACT

Artisanal and small scale mining (ASM) has emerged as a possible significant contributor to economic growth and development despite its environmental and social challenges. The main aim of this paper is to highlight policy framework that nations can adopt to promote ASM. It acknowledges challenges faced by ASM that ranges from social, environmental, health and safety, marketing to finance. The paper proposes a range of policy framework that the government can adopt to ensure that there is meaningful capturing of rent for economic growth and development. The government can formalize the sector for easy accounting, monitoring and addressing of ASM challenges. The government can also ensure generation of a home grown policy involving all affected stakeholders for the stakeholders to relate to the policy and take ownership of it. Local authorities to be given powers to execute some of the ASM issues since they will be on the ground with the miners. Policy to be of an incentive nature rather than forceful for maximum returns.

Keywords: Artisanal and Small-scale Mining, Policy Framework, Sustainable Development, Stakeholders Engagement, Marketing Systems

INTRODUCTION

Artisanal and small scale mining (ASM) is a rudimentary form of mining usually done to mine ore deposits not profitable to mine using large mines (Siegel and Veiga, 2007). ASM activities have increased significantly in the recent years with the Intergovernmental Forum on Mining, Metals and Sustainable Development (IGF) (2017) estimating 40.5 million employed over 80 countries worldwide. The rise is being attributed to an increase in metal prices, decline in the viability of agriculture, increasing poverty and unemployment rates and inadequacy of revenues from other sectors (Fritz, et al., 2018). ASM production accounts for approximately 20% of the global gold, 80% global sapphire, 20% global diamond and more than 50% of the ASM employees are women and children (World Bank, 2013) (Fritz, et al., 2018).

ASM is faced with a lot of challenges which include insufficient funding, environmental health and safety and social issues and these pose a threat in the sustainability of ASM mining (Mutemeri and Ledwaba, 2018). With the right policy framework and adequate technical and financial support, ASM can significantly contribute to the economic growth and development of a nation with minimum environmental and social impact to the community. This paper acknowledges the challenges associated with ASM and the current increase in ASM activities and gives an insight of how sound policies and legal frameworks can be used to promote ASM mining. The paper briefly discusses Zimbabwean ASM and summarises possible global policy framework recommendations that can be implemented to promote ASM mining.

CHALLENGES FACED BY ASM

Environmental Challenges

ASM causes considerable environmental damage as a result of land degradation, deforestation, contaminating surface and groundwater resources and mercury toxicity (Telmer and Veiga, 2009). ASM miners are thus required to operate within limits of environmental legislations. Failure to comply with the legal requirements causes inadequate rehabilitation and long-term environmental damage. (Ministry of mines, Namibia, 1992). Some of the ASM miners are not even aware of the environmental requirements in the legal provisions.

Social Challenges

ASM activities are associated with high exploitation of child labour, high crime rates and high substance abuse (Bansah, et al., 2016). Extensive population inflow to ASM active areas can have health impacts from poor sanitation, spread of sexually transmitted diseases and HIV/AIDS (Buxton, 2013) and sexual harassment of women (Zvarivadza and Nhleko, 2018). ASM is also known for exploitation of child labour that deprives children of a bright future. There is also neglect of human rights with employees being underpaid in most instances (Siegel and Veiga, 2007).

Safety and Health

ASM is associated with safety and health risks for the employees, who sometimes for the quest of profit overlook health and safety regulations and in other instances do not have enough finances for adequate personal protective clothing (Hilson, et al., 2018). ASM activities lack monitoring and this can result in high incidences of serious accidents and fatalities (Ministry of mines, Namibia, 1992).

Economic challenges

ASM is characterised by poverty stricken people without access to loan facilities as they lack collateral security to offer to banks (Bocoum, 2000). Most of the employees in ASM are uneducated and adopting technological changes is always a challenge (Theije and Heemskerk, 2009). According to Hinton et al (2003) many ASM activities are unlicensed and this makes it difficult to capture rent resulting in retardation of economic growth in a nation. Another economic challenge results from ASM mineral products buyers who purchase ASM products at unreasonably low prices (O'Faircheallaigh and Corbett, 2016).

POLICY AND LEGAL FRAMEWORK USE

Most ASM miners operate illegally hence the need to have it as a formal sector. This can be achieved through the use of policy and legal framework and monitoring and enforcement of the legal frameworks through relevant authorities (Fritz, et al., 2018). Formalising ASM makes it easy to account, monitor and address ASM challenges (Hilson and Maconachie, 2017). Formalising minimises corruption and crime rates and this can translate to an increase in revenue for the nation for economic growth and development (Hilson and Maponga, 2016).

Policy makers should involve all stakeholders including the miners and community people in formulating policies as this will make it easy for the miners to relate to the policy and regulations and take ownership of it. The policy has to consider all characteristics specific to ASM and have standards and regulations by level and scale of ASM activities (Hilson, 2015). Activities and responsibility for implementation for some of the regulations can be allocated to local authorities that are in direct contact with the communities and can work hand in hand with the affected miners (O'Faircheallaigh and

Corbett, 2016). According to O'Faircheallaigh and Corbett (2016), the policies should be of an incentive based nature rather than coercive for maximum returns. ASM miners are not well informed on the mining law's various requirements and there is need for awareness.

Prospecting and Mining Rights

Geological data should be readily accessible by ASM and there is need to have ASM reserve areas that the ASM miners can focus on when looking for areas for mineral exploitation (Siwale and Siwale, 2017). The Minerals (Prospecting and Mining) Acts for nations should have a simplified claim registration system for ASM sector that differentiates ASM and large-scale prospecting and mining rights (Ministry of mines, Namibia, 1992).

The simplified registration of mining claims should be decentralised and readily available to small scale miners with local government possessing powers to award licences (Fritz, et al., 2018). Having local governance in small scale reserve areas can improve the dissemination of prospecting and mining rights information from the central governance to the people on the ground and also improve on monitoring. The government should come up with incentives for miners to become licenced and the policy should provide different categories of licences with distinguished requirements (Hilson and Maconachie, 2017).

Health and Safety

According to Jennings (2000), ASM is not formalised and regulated making it difficult to account for the actual number of accidents and fatalities associated with ASM, but these do happen. The need for greater profits can push ASM miners to overlook significant health and safety standards (Verbrugge and Besmanos, 2016). The government should introduce safety regulations for this sector that is significantly contributing to national economy and monitor through local authorities. The government can also engage in the following to assist ASM miners where health and safety issues are concerned (Jennings, 2000; O'Faircheallaigh and Corbett, 2016):

- Reinforcement of mine safety requirements through local governance
- Health and safety programmes making the employees aware of the safety and health risks associated with mining and sensitising the miners to maximise profits in a safe and responsible manner
- Access to better equipment that are much safer and environmentally friendly to use
- Establishment of reporting systems for ASM in case of accidents happening
- Specifying site specific maximum depth that ASM can safely operate at and site specific safe types of explosives and mining method to be employed
- Incentivizing large scale mining to create work related learning programmes that will help ASM with occupational and environmental health and safety standards
- Conducting peer reviews

Financial Support

Mining is a capital intensive sector and due to the poverty nature of ASM miners and lack of collateral security, the miners have difficulties in accessing financial support (Koning, 2009; Siegel and Veiga, 2007). Formalisation of the ASM sector can improve on trust levels and traceability of ASM and as a result increase accessibility of financial support (Zvarivadza and Nhleko, 2018). Government to provide loans through existing and future financial structures and intervention from NGOs and international

organisations to be encouraged (Zvarivadza and Nhleko, 2018). The government can have a lending policy for ASM that can be paid back using small affordable instalments.

Environmental Policy

One of the problems faced by ASM is that of expensive environmental and rehabilitation costs as many governments apply the same legislation for both ASM and large scale mining. Most of the environmental contracts are coercive in nature and face the challenge of non-compliance from ASM (Ministry of mines, Namibia, 1992). To ensure that ASM operates with minimal damage to the environment, there is need to have an incentive based environmental contracts that are site specific and derived with community consultation (O'Faircheallaigh and Corbett, 2016). The government should adopt in mineral policies and enforce mining techniques that have minimal impact to the environment (Labonne and Gilman, 1999). There should be environmental awareness programmes for ASM and governmental organisations or local authorities that implement the awareness programmes.

Child Labour and Social Support

ASM is characterised by many social challenges and some have been explained earlier in the paper. Social challenges can be decreased by increasing societal educational levels and professionalism through regular awareness trainings on drug abuse and crime to mention (Fritz, et al., 2018). To ensure that there is little or no exploitation of child labour in ASM, there is need for easy access to primary and secondary education for children, particularly in the rural community. The Mining sector in partnership with other sectors and the government can provide scholarships and most probably free primary education for the children. This will reduce the number of children available for employment in ASM and also increases literacy levels in the communities (Zvarivadza and Nhleko, 2018). People who will work for small scale mines will have an increased level of education and better understanding of the mining business. Local governance needs to ensure that there is no use of child labour in ASM.

Marketing Systems and Marketing Information

Marketing systems for ASM are not captured in standing legal frameworks of most countries. Location of ASM operations are usually far from major markets (Fritz, et al., 2018). There is need for formation of decentralized ASM cooperatives for the buying and marketing of ASM mineral products (Ministry of mines, Namibia, 1992). There is also need for a supporting organisation to educate the miners on the available buying and marketing mining cooperatives.

Research and Development

Government to utilise advancing technology and setting up of Research and Development centres that look into specific issues for ASM mining. Research for safer ways of gold processing instead of using mercury that is toxic to the environment should be done and ensure that the miners are aware of the safer practices through the use of local governance (Telmer and Veiga, 2009).

ZIMBABWE ASM

ASM is a significant income generator in Zimbabwe where there are high unemployment rates (Mudzwiti, et al., 2015). ASM provides direct employment to approximately 500 000 people and presumed to support 3 million dependants (Mukasiri and Hwengwere, 2017). According to Svatwa and Sibanda, (2000) ASM activities are significantly increasing due to deteriorating agricultural sector and worker retrenchment.

There was no much recognition of ASM in the 1980s with formalisation attempt in the 1990s and in the 2000s, Zimbabwe was characterised by deteriorating economic conditions (Mudzwiti, et al., 2015). The principal regulatory act is the Mines and Minerals Act (MMA) of 1961 which does not differentiate between large scale mining and ASM and the act is old making it difficult to match with policies meant to stimulate economic growth and development. Zimbabwe does not have a stand-alone mineral policy except for a Draft Mineral Policy (DMP) that is not yet adopted (Mukasiri and Hwengere, 2017). The DMP recognises three levels of mining that is large scale, small scale and artisanal mining and that there is need to rebuild the ASM support triangle (finance, marketing and technical assistance) for sustainability of ASM activities (Mudzwiti, et al., 2015). There is also unfinished formulation of Minerals Development Act that is meant to cater for ASM leases.

CONCLUSIONS

Artisanal and Small scale mining has been on the increase globally due to an increase in metal prices and inadequateness of other sectors to provide employment and alleviate poverty. ASM is characterised by social, environmental and financial challenges that can undermine its potential to contribute to development by providing employment, stimulating local economic growth and slowing urban migration. Formalising ASM makes it easy to account, monitor and address ASM challenges and also minimises corruption and crime rates. This can translate to an increase in revenue for the nation for economic growth and development. Having a home-grown policy that involves all stakeholders and considers specific characteristics of ASM will make it easy for the miners to relate to the policy and regulations and take ownership of it.

Generation of small scale reserve areas and simplified registration of mining claims can also help in formalising ASM. Having local governance in small scale reserve areas can improve the dissemination of information and providing necessary awareness to the people on the ground and also improve on monitoring of implanted systems. There is need for policy reforms including developing good ASM policy and legislation, providing financial assistance, integrating LSM and ASM and providing equipment in order to promote ASM mining and ensure economic growth and development for Zimbabwe and other developing countries.

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