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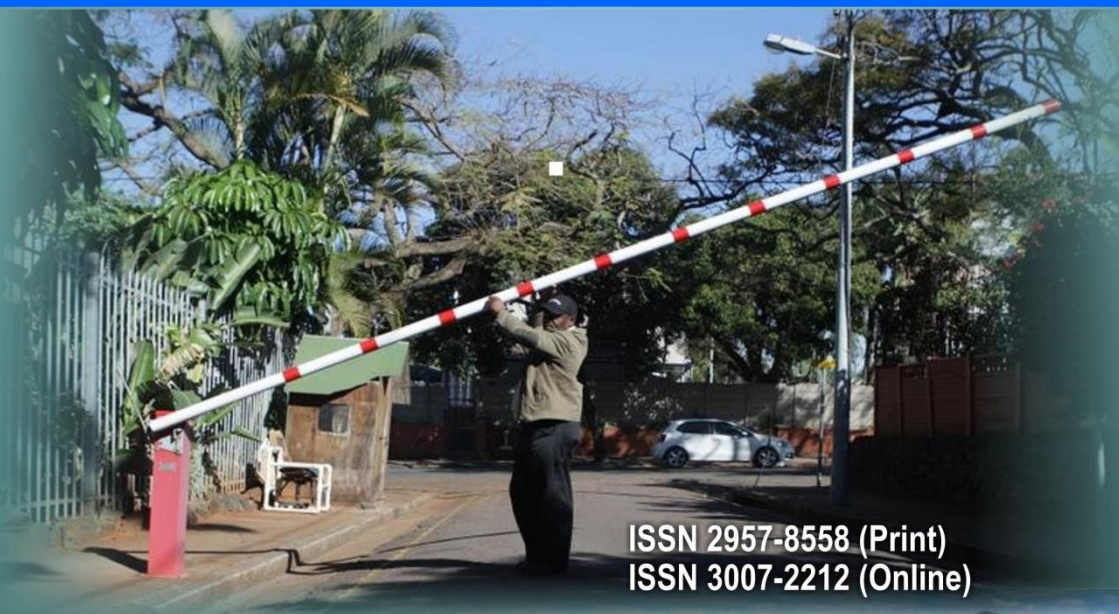

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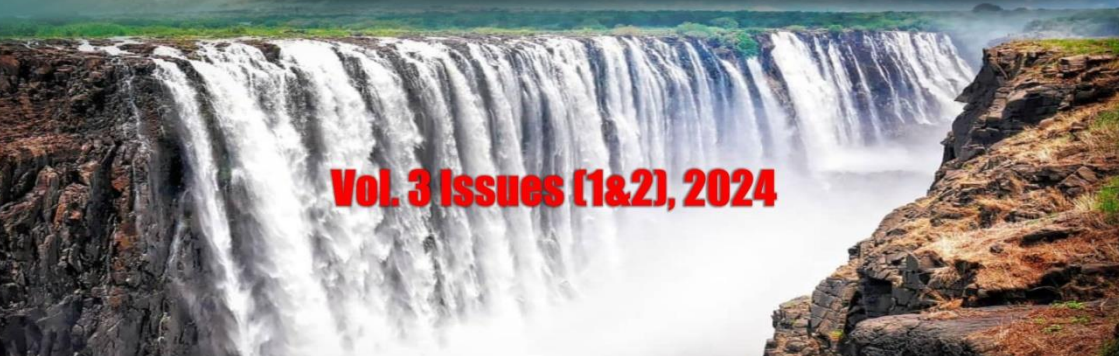

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# About the Journal

## JOURNAL PURPOSE

The purpose of the *Ngenani - Zimbabwe Ezekiel Guti University Journal of Community Engagement and Societal Transformation Review and Advancement,* is to provide a forum for community engagement and outreach.

## CONTRIBUTION AND READERSHIP

Sociologists, demographers, psychologists, development experts, planners, social workers, social engineers and economists, among others whose focus is on community development.

## JOURNAL SPECIFICATIONS

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## SCOPE AND FOCUS

The journal is a forum for the discussion of ideas, scholarly opinions and case studies of community outreach and engagement. Communities are both defined in terms of people found in a given locale and defined cohorts, like the children, the youth, the elderly and those living with a disability. The strongest view is that getting to know each community or sub-community is a function of their deliberate participation in matters affecting them by the community itself. The journal is produced bi-annually.

# Guidelines for Scholars for the Journal

Articles must be original contributions, not previously published and should not be under consideration for publishing elsewhere.

**Manuscript Submission:** Articles submitted to the *Ngenani - Zimbabwe Ezekiel Guti University Journal of Community Engagement and Societal Transformation* are reviewed using the double-blind peer review system. The author's name(s) must not be included in the main text or running heads and footers.

**A total number of words:** 5000-7000 words and set in 12-point font size width with 1.5 line spacing.
**Language:** British/UK English
**Title:** must capture the gist and scope of the article
**Names of scholars**: beginning with the first name and ending with the surname
**Affiliation of scholars**: must be footnoted, showing the department and institution or organisation.
**Abstract:** must be 200 words
**Keywords:** must be five or six containing words that are not in the title
**Body**: Where the scholars are more than three, use *et al.,*
Italicise *et al., ibid.,* words that are not English, not names of people or organisations, etc. When you use several scholars confirming the same point, state the point and bracket them in one bracket and ascending order of dates and alphabetically separated by semi-colon e.g. (Falkenmark, 1989, 1990; Reddy, 2002; Dagdeviren and Robertson, 2011; Jacobsen *et al.,* 2012).

**Referencing Style:** Please follow the Harvard referencing style in that:
— In-text, citations should state the author, date and sometimes the page numbers.
— The reference list entered alphabetically, must include all the works cited in the article.

In the reference list, use the following guidelines, religiously:

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# ARTISANAL MINING AND ITS SOCIO-ECONOMIC IMPLICATIONS IN THE RURAL DEVELOPMENT AGENDA: EVIDENCE FROM UZUMBA - MARAMBAPFUNGWE, MASHONALAND CENTRAL PROVINCE, ZIMBABWE

IRONY MAZURUSE[1] AND TAKUDZWA CHIDEMBO[2]

## Abstract

***This research focuses on the impact of artisanal mining on the socio-economic development of the selected wards from Uzumba-Marambapfungwe (UMP) in Mashonaland East Province. The study unpacks intricate issues around artisanal mining in Zimbabwe by focusing on a rural community in Mashonaland Central Province where it is rife. Thus, the study ascertains the extent to which the local communities benefit or lose when artisanal or small-scale mining is pursued in a community. The study adopted a mixed research methodology to gather data that was anchored on interviewing key informants, ordinary research participants and researcher observations. It purposefully and randomly sampled a population that included twenty artisanal miners, ten community members and five key informants. The study establishes that artisanal mining delivers more economic benefits than expenses to the rural poor despite its uncontrolled environmental degradation. Notwithstanding the economic benefits accumulated by the rural poor from artisanal mining actions in UMP through employment creation and income generation, there is loss of revenue to central government since the activities are uncontrolled and untaxed. Thus, the study argues that***

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***despite its reputation as a source of employment in the face of high unemployment levels in the formal sector, the economic hazards associated with lose of tax revenue to central government, the chaotic and illegal nature of the activities and the environmental pillage is too high.***

**Keywords:** *artisanal mining, socio-economic development and sustainable development*.

## INTRODUCTION

Artisanal mining has been most influential in the socio-economic development of communities in Zimbabwe, apart from agriculture (Chipangura (2019). Owing to the current economic instability in the country that has resulted in reduced employment opportunities in the formal sector, informal artisanal mining has taken over to become an important income-generating activity, especially in rural areas, like Uzumba-Maramba Pfungwe (UMP) that is always associated with food insecurity due too climatic conditions. The economic decline coincided with and was aggravated by the political crisis in the country's impoverished people, especially in UMP. Artisanal small-scale (ASM) mining is a production system that allows local people to earn income. It provides an accessible livelihood for poor and marginalised people, often complementing other livelihood activities such as agriculture, animal husbandry and hunting. In Zimbabwe alone, the World Bank estimates that half of the population (7, 9 million) experience extreme poverty (The World Bank Report: Zimbabwe Economic Update 2021). The mining sector is one of those economic sectors that have seen an exponential rise in Artisanal mining and illegal panning as many people flock to this industry that remains largely unregulated. Not only does the ASM sector create jobs, but it also generates cash for the fiscus, that is a major boost to Zimbabwe's economy. However, those who are impacted by artisanal mining have to take some things into account. Therefore, to reduce the

negative effects on the community, this study must examine both the good and bad effects of ASM.

Many countries now recognise artisanal mining as an economically viable and significant industry on par with large-scale, conventional mining (Mwandiringana and Ye, 2023). As observed by the studies by Chipangura (2019), PACT (2017), Nhlengetwa and Hein (2019) and Hilson *et al.* (2018), artisanal mining has become a major factor in rural development and poverty alleviation. Approximately 100 million people are employed as artisanal miners globally, with 16 million of those jobs being in developing nations and over two million in Zimbabwe. Chipangura (2019), PACT (2017), Nhlengetwa and Hein (2019) and Hilson *et al.* (2018) in their appraisals focused on the importance of artisanal mining as an economic livelihood option meant for poverty alleviation and its contributions to economic development. Mpofu and Mpofu (2017) further argue that some have even viewed artisanal mining as the sole feasible livelihood option for the rural poor and jobless, particularly in dry places where agriculture is a high-risk, low-return venture. Artisanal mining should not only be viewed as a trade undertaken solely by the poor as businesspeople, senior politicians and public officials are involved in capital accumulation and rent-seeking in the artisanal mining sector (Mwandiringana and Ye, 2023). This study addresses the lack of reliable information on artisanal mining, even though it is crucial to many people's socioeconomic livelihood. Few accounts tell the stories of individual artisanal miners and there is a dearth of data regarding the age, status, wealth and health of men and women in the rural and dry communities in Zimbabwe.

The Artisanal Small Miners (ASM) sector represents an important livelihood and income source for the poverty-affected local population and also ensures the existence for millions of families in rural areas of developing countries (Ofosu, Dittmann, Sarpong and Botchie, 2020).

This study evaluates whether ASM serves as a support operation in times of environmental and economic stress or as an antecedent since a series of droughts and a shortage of investment have driven many Zimbabweans into artisanal mining, including a major rush to alluvial gold mining. Various policies such as Environmental Impact Assessment (EIA), Environmental Management Agency (EMA) Act, Mines and Mineral Policy, Indigenization and Economic Empowerment were introduced in a bid to improve artisanal and small-scale mining (ASM) in the country as there was a huge loss in the economy and on the environment (Zimbabwe Environmental Law Association, 2016). These policies have attracted widespread criticism in terms of their impact on the wider socio-economic situation in Zimbabwe. Dhliwayo (2016) paper 'The Mines and Minerals Amendment Bill: Its Promises and Pitfalls' argues that the legalization of ASM activities in Zimbabwe has brought the ideas of sustainable mining and the taxation system in which the country's economy would benefit. The benefits of such processes to rural communities have generated polarized debates across the country.

The current economic uncertainty in Zimbabwe that has led to fewer job prospects in the formal sector, along with the unfavourable drought circumstances that are not conducive to farming, have encouraged the unrelenting rise in artisanal gold mining (Makombe, Kufakurinani and Chimhete, 2023). People have been influenced by these circumstances to focus on illicit artisanal mining as a substitute means of subsistence. Although creating jobs and income through artisanal mining is seen as a resilient livelihood option for those who are economically vulnerable, operating under risky, labour-intensive, highly disorganised and illegal conditions put the communities involved at risk (Makombe *et al.*, 2023). Among these risks are the usage of cyanide that calls for extra health precautions, land degradation and the establishment of situations that encourage moral decay, such as drug addiction, prostitution and high school dropout

rates. To uncover the realities from a community perspective the study was inspired to assess the contribution of artisanal mining to the socioeconomic growth in Mashonaland East with the case of selected wards in UMP. This study sought to address the following: (a) to evaluate the socio-economic impacts of small-scale artisanal mining in selected wards under UMP community; (b) to ascertain the extent to which the community was able to cope with the challenges associated with Artisanal Small-scale Mining and; (c) to ascertain the community perception of the activities of artisanal miners.

## CONTEXTUALISATION THROUGH LITERATURE ON ARTISANAL MINING

Artisanal Small-scale mining has attracted much research and generated debate across the globe over its socio-economic, political and environmental implications (Engels and Dietz, 2017). Engels and Dietz (2017) have further observed that in the last two decades, economic and political crises in Zimbabwe have led to growing constraints on livelihoods in rural areas and urban settings and shifting patterns of resource access and control. Economic instability left limited employment opportunities in the formal sector and informal artisanal and small-scale mining became increasingly important as an alternative viable source of income and livelihood for both men and women in Zimbabwe. In many developing countries, artisanal and small-scale mining (ASM) is largely a poverty-driven activity that plays an important economic role (Engels and Dietz, 2017). Engels and Dietz (2017) put forward the argument that 80 to 100 million people across the developing world could depend on small-scale mining for some aspects of their livelihoods. Small-scale mining can be extremely environmentally damaging and often has serious health and safety consequences for workers and surrounding communities. This is generally due to poor practices in mining and processing target minerals (Engels and Dietz 2017). Governments in many countries regard ASM as an illegal activity.

André and Gavin (2013) from their research in Ghana submitted that Small-scale gold mining operations have contributed significantly to the economic and social structure of catchment areas of the mines. Most often, its negative impacts on communities and the nation at large overshadow its positive contributions. It has improved people's livelihoods within mining communities diversely that needs acknowledgment. Such positive contributions include the generation of employment, income and foreign exchange. Serwajja and Mukwaya (2020) in their findings in Mozambique note the negative impacts associated with ASM. They further observe how the miners camp in shelters where health and sanitation are far from desirable.

It was further observed how at such mines, the miners worked where safety measures were very poor with deep mining shafts and galleries that are particularly dangerous (Serwajja and Mukwaya, 2020). Serwajja and Mukwaya (2020) contend that the processing of ore occurs in the river, resulting in high sediment loads. The direct contact with water used for washing can expose women and children to diseases as evidenced by most women complaining of the impact of gold washing on their health resulting to reports of constant cracking of hands and feet and irritation of their bodies (Serwajja and Mukwaya, 2020). Geenen *et al*. (2020) aver that in Congo, the majority consider mining as the only source of household income. In income earnings, pit managers have the highest standard of living on average, while farmers have the lowest. The insecurity in Eastern DRC led to some people changing from agriculture to focusing on mining. Mining is considered to be less economically and physically challenging than agriculture that requires long-distance travel through areas under militia occupation (Bashwira and van der Haar, 2020).

In the context of Zimbabwe, Spiegel (2015) has observed that Zimbabwe had approximately 500,000 artisanal miners, of which about 400,000 mine gold. ASM sustains the livelihood of at least two million

people in Zimbabwe directly and indirectly through ancillary services and secondary economic activities (Spiegel (2015). Koroma (2017) opines that artisanal mining can provide important income and livelihood opportunities for impoverished individuals and communities who have few other economic options. The work is labor-intensive and can generate quick cash, making it an attractive source of income. However, the informal and often unregulated nature of artisanal mining can also lead to economic instability, as income tends to be irregular and miners lack the protections and benefits associated with formal employment (Koroma, 2017). Koroma (2017) further buttress the fact that, socially, artisanal mining can have mixed effects. It can empower marginalised groups by providing work, but the influx of transient miners can also disrupt local communities, increase crime and degrade the environment.

ASM activities are concentrated in gold panning, chromite and tantalite mining although Zimbabwe is richly endowed with other resources such diamonds, iron ore, copper, coal among others. Poverty and lack of employment alternatives due to prevailing economic hardships; low productivity resulting in low income from farming activities and lack of other viable non-farm activities are some of the major drivers of ASM in Zimbabwe (ACT (2015). These developments, place ASM at the heart the rural communities where there is mineral occurrence that is amenable to exploitation by ASM. In these rural communities ASM activities have become an increasingly important source of income and livelihood options (Spiegel 2015). Crop failures during drought years have also contributed to increased ASM activities as households look for alternative sources of livelihood.

## CONCEPTUAL FRAMING

A conceptual framework is a synthetisation of interrelated components and variables that help in solving a real-world problem. It is the final lens used for viewing the deductive resolution of an identified issue

(Imenda, 2014). The development of a conceptual framework begins with a deductive assumption that a problem exists and the application of processes, procedures, functional approaches, models, or theories may be used for problem resolution (Zackoff *et al.,* 2019). This section provides a brief description and defines the key concepts used in the study.

**ARTISANAL MINING**

The Minamata Convention on Mercury defines artisanal and small-scale gold mining as mining carried out by lone miners or small businesses with restricted capital investment and output (United Nations Environment Programme, 2014). McDermott (2017) posits that the International Labour Organisation characterizes small-scale and artisanal mining as labour-intensive, with little and rudimentary mechanization. Artisanal and small-scale mining (ASM) activities are mainly characterized by the minimal use of machinery or technology; operation with or without legal mining title or valid contract with the title holder; low productivity; inadequate safety measures, healthcare and environmental protection; high seasonality linked to economic insecurity (Hentschel *et al*., 2002).

**SUSTAINABLE DEVELOPMENT**

Ndlovu (2023) submits, "the concept of sustainability has come to be regarded both as a goal in development programmes and as an approach to policy and programming." It was further espoused that there are many definitions of sustainability in literature and in empirical use among development workers because, the term is strongly dependent upon the context in which it is used." On this basis, Brown and Goetze (1987) as cited in the study by Ndlovu (2023) maintain that a meaningful definition must specify explicitly the context and the temporal and spatial scales being considered. Sustainable development has been defined in many ways, but the most frequently quoted definition is from "Our Common Future", also

known as the Brundtland Report: "Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987). Therefore, the concept of sustainability in sustainable development shows a balance between protecting the environment increasing employment opportunities and improving the quality of life (Serageldin, 1996). Marufu and Manyanhaire (2011: 45) added that "Sustainable development should incorporate the three principles into all public policies: (1) economic growth; (2) environmental protection; (3) Social culture".

**SOCIAL DEVELOPMENT**

There have been few attempts to define social development but most of these definitions are broad, general, descriptive and philosophical. Each researcher or policymaker implies and derives his or her definition as observed by his/her study, making operational definition difficult to attain (Colantonio, 2007). As observed by Midgley, 2014: 4), social development is the human interactions and the complex phenomena that arise from specific interactions like a large number of groups and associations including the family, neighbourhood associations, formal organisations, communities and even societies that also give rise to social networks, values, cultures and institutions. From this perspective, it can be understood that social development is essentially concerned with not only the material aspect but also the non-material aspect of society and human life. Mohamed *et al*. (2019) definition of social development includes reducing inequalities and problems, achieving human welfare and well-being, creating opportunities and empowering people, improving relationships between people and their institutions and finally, ensuring economic development. Mohamed *et al.* (2019), Baines and Morgan (2004) and Sinner et al. (2004) provided a general definition of social development that reflects its features and the key themes covered by the concept. As observed by these scholars, social development includes circumstances

based on gender and task; opportunity based on education and health; mobility based on jobs and cities and support based on social protection, taxes and transfers. Social development is defined in the broadest social terms as an upward directional movement of society from lesser to greater levels of energy, efficiency, quality, productivity, complexity, comprehension, creativity, choice, mastery, enjoyment and accomplishment. The development of individuals and societies results in increasing freedom of choice and increasing capacity to fulfil their choices by their capacity and initiative.

**THEORETICAL FRAMEWORK**

This section canvasses the theoretical premises grounding this study. Accordingly, the study connects Garrett Hardin's (1998) tragedy of the commons to the UMP mining communities, where people are taking advantage of natural resources for their gain. Nonetheless, the study looked into the connection between artisanal mining and environmental sustainability in light of the legalization of small-scale mining. Ells (2018) contends that the tragedy of the commons is often brought up when people discuss environmental issues. For example, in the case of artisanal mining, if it provides an income, then each miner would have his or her own best interest in mind and try to mine as many minerals as possible even if all the other miners are doing the same thing. As this behavior continues, the shared resource (the mineral) is eventually depleted and the group as a whole of the community population suffers (Ells, 2018). Another example often cited is the deforestation of forests as clear-cutting trees for mining or development may directly benefit those, who own and use the land, the cost of losing that forestland is more widely distributed (Ells, 2018). Ells (2018) further contends that pollution is also similar as it may be beneficial to practice artisanal mining each day using different types of chemicals such as mercury causing water pollution and other environmental problems, but because the water is common and shared

by everyone, the overall public has to deal with that pollution each person contributes.

Drew (2023) asserts that the Tragedy of the Commons is an economic theory that explains how individuals frequently use natural resources for their benefit without taking into account the needs of a community or society as a whole. A depletion of natural resources results when many people just think about their well-being. This has detrimental effects on everyone. Understanding this economic theory necessitates having a working concept of the commons, that includes any natural resources that are not privately held by a person or business (Prior, Giurco, Mudd, *et al*., 2012). Instead, the whole public can make use of these resources. As observed by Drew (2023), these may include minerals, open pasturelands, wood, oil, the oceans, the atmosphere, fish and wildlife and several other shared resources. People frequently misuse resources that are freely available to them, as The Tragedy of the Commons explains. Frequently, they overlook the idea that overuse of the resource will have detrimental repercussions on everyone involved, including themselves.

Drew (2023) further drives home the fact that if everyone acts in their own best interests, the resource as a whole approaches exhaustion, indicating a deficiency in stewardship of the common good. Several remedies have been put out to counteract the unfavourable effects of The Tragedy of the Commons. As individuals band together to protect resources for the benefit of all, solving this issue generally calls for cooperation and teamwork. The government's ability to regulate and tax people can limit their impact on particular resources. To prevent people from using other resources excessively, organisations or individuals may be granted statutory or informal property rights, as observed by Woznick and Buchs (2013). In addition to explaining the endogenous dynamics of ASM, the researcher expects this model to identify and evaluate potential leverage strategies to mitigate the

negative effects of ASM that are now in place and to advance ASM as a driver of sustainable development and economic growth.

## RESEARCH METHODOLOGY

This study was carried out in the selected wards of UMP in Mashonaland East Province. A mixed research method was adopted. Interviews, observations and focus group discussions were used for data collection. The total study participants were made up of thirty (30) participants. The artisanal miners were used as the key respondents in this study. To formulate a study sample, the study purposefully and randomly sampled a population who included twenty (20) artisanal miners and ten (10) community members. Since a pragmatic approach was used, the study used thematic data analysis techniques to present the data collected using qualitative methods and was coded using in vivo coding. Qualitative data were coded to protect the privacy and confidentiality of the respondents and pseudonym coding went as follows: **P** for the ASM and **C** for community members. Statistical packages were used to present quantitative data collected during the study. The study also applied several ethics during the research to build rapport with all the research respondents. This also ensured developing participants' trust thereby acquiring quality data. The researcher utilised informed consent, confidentiality and respect allowing participants the option of withdrawal from the research process.

## FINDINGS

The key respondents who are artisanal miners had different demographic characteristics ranging from age, sex, marital status, level of education and employment status. This information was important to determine the drivers to artisanal mining and the demographic group involved. The age group engaged in mining are supposed to be formerly employed. This is also coupled with the economic downturn

experienced in the country increased the number of people aged between 16 and 25 in artisanal mining activities to earn a living.

### SEX OF RESPONDENTS

The findings show that most of the participants comprised of men and few women. This therefore proves that artisanal mining activities involve more men than women simply because the job is labour intensive and it is also supported by the patriarchal system of life where men are supposed to be the providers to their families. It was however established that the women involved in mining activities play an important role in the reproduction of labour. They provide catering services, transactional sex and providing a hand in ore processing (sieving). However, artisanal mining poses some social implications as the commercial sex provided by women in this area may lead to the spread of Sexually Transmitted Infections (STIs) and HIV&AIDS. These establishments find consensus with the findings by Dzvimbo *et al*. (2019).

### EMPLOYMENT STATUS OF RESPONDENTS

Based on the findings of this study, artisanal mining activities have become more prevalent because of a lack of official employment. This suggests that for the jobless rural residents of UMP, artisanal mining serves as a source of income. These findings are in tandem with Mpofu and Mpofu (2017) and Nyavaya and Mushauri (2021) found that people were driven into transitory artisanal mining activities due to unemployment issues and the necessity for sudden work.

### SOCIO-ECONOMIC IMPACTS OF ARTISANAL MINING: OPERATIONAL COSTS

Mining requires money for the extraction of gold, just like any other economic activity. This capital includes operations costs, equipment costs and other expenses required for the mining activities to continue. Findings show that in UMP mining communities' artisans start all of their mining operations with less than $100. This demonstrates that the

artisanal mining industry faces financial constraints when it comes to investment that keeps the activity basic, particularly in terms of equipment and operations. The study also established that the artisanal mining industry receives relatively little funding. As suggested by the focus group discussions, artisanal mining therefore attracts a small amount of investment, especially from the impoverished in rural areas. This might be because people don't follow the proper protocol that leaves them without investment security. Lack of funding results in poor investment in the artisanal mining sector, meaning a larger share of this sector remains illegal. This is a result of the poor income that most of these miners, who make their living from mining, are unable to pay for the license.

**INDIVIDUAL MONTHLY INCOME FROM THE MINING ACTIVITIES**

The income distribution amply demonstrates that artisanal mining is successful in bringing in enough cash to support miners' daily needs. But as Mwandiringa and Ye (2023) estimate, the cost of registering a mining claim is $1500, therefore the money made is only a small portion of what is needed. Artisanal miners revealed during the Focus Group talks that their earnings make little contribution to Corporate Social Responsibility (CSR). Based on the demographic data collected in the field, it was shown that even with the use of basic tools and minimal capital, miners may make a living through artisanal mining. The miners stated that their children's education from primary to secondary and occasionally even tertiary levels has been made possible by mining. After speaking with most artisanal miners, it was discovered that they all had decent homes and could use the money they made from their mining operations to purchase social services like health care. However, as seen by the lack of any appreciable contributions to CSR or community development initiatives, the rest of the community seldom benefits from such initiatives.

One of the main characteristics of artisanal mining is the lack or reduced degree of mechanization hence reduction in the produce. The

researcher even observe that the basic tool kit for mining includes shovels, pans, buckets and homemade sluice boxes for gold. Thus, individual miners can only process small quantities of materials each day with only a chance for small and inconsequential returns. This therefore shows that their income hinders them from acquiring sophisticated machinery and the temporary nature of the activity hinders investment in machinery. The artisanal miners wind up operating in unsafe environments because of the mining project's minimal investment. The miners stated during the FGD that their primary goal was to raise revenue by cutting operating expenses. One of the artisanal miners said;

> We cannot afford to build adequate housing at our locations of employment so as a result, we live in overcrowded shanties with no proper toilets. [P17].

Observations during the study further concrete that the artisanal miners used backyards as sanitary facilities. The research also discovered that artisanal mining caters to even the poorest group in society, as it requires machines that can be found in people's homes, hence, there is very little expenditure on machinery. One artisanal miner averred,

> …handmade tools like chisels, hammers and homemade James table replicas, shovels, ropes and buckets are some of the common tools that we use to do our work here…

In support of the current discoveries, Schwatz *et al*. (2021) observe how the basic tool kit for mining is brought from home which include shovels, pans, buckets and homemade sluice boxes for gold. Thus, individual miners can only process small quantities of materials each day with only a chance for small and inconsequential returns for purchasing machinery.

Even though artisanal mining is associated with positive socio-economic achievements there are some negatives attached to it. The respondents admitted that mining activities affect the environment.

The researcher observe and found out that the main cause of environmental degradation is the open-cast method of mining that is dominant. The respondents from the Focus Group Discussions also raised some of the major land degradation problems such as the presence of uncovered pits, the destruction of vegetation and the destruction of the natural beauty of the land. One community response echoed that,

> They are digging up leaving behind gullies and open pits that are causing people to fall into them when drunk. Our domestic animals like cattle have been falling into them leading to broken legs and death. These artisanal miners are also destroying fields and forests in search of gold.

Drew (2023) discovered a similar situation and hypothesized that ASM tend to destroy and degrade forest ecosystems through habitat destruction, the use of toxic chemicals, waterway pollution and threats to mining populations' dependencies on practices like firewood gathering, bush meat hunting and timber for construction. In addition, he suggests that it is becoming a more significant factor in internal migration and the colonization of frontier forestlands that could result in the permanent clearing of land. Small-scale gold mining is linked to actions that put environmental sustainability at risk (Mapuva and Dube, 2016). It is therefore reasonable to conclude that, aside from its negative consequences on the environment, the artisanal mining industry has hurt mining communities and has not brought them any benefits during or after mining.

Mining operations are linked to issues with noise, odour and dust in the air. Since rainfall neutralises dust during the rainy season, dust predominates during the dry season. Another issue with air quality resulting from chemical use and inadequate restroom facilities is odour. Another issue with air quality that was brought up by participants in focus groups and supported by individual observations was noise resulting from the use of explosives. Waste generation is part of the mining process that cannot go unmentioned. The villagers who participated in Focus Group Discussions explained that many

households obtain their drinking water from shallow wells. Consequently, the researcher observe that waste materials (sludge) deposited from the backyard of their mines have high risk of contaminating their drinking water.

A community member had the following to say:

> Cases of water contamination from mining effluent have been reported several times here. These ASM are using dangerous chemicals like cyanide and mercury with little to no proper supervision hence disposal is not controlled thereby affecting water bodies and environments. [C7]

This study has also amply demonstrated that, in UMP, ASM is viewed as a means of achieving a better living because it can lower poverty by increasing per capita income. As observed by the miners surveyed, there are ways to make money from mining and some families choose to focus on and depend entirely or partially on ASM to meet their basic necessities. Based on these findings, mining was considered relevant since it provides people a reliable source of income. An artisanal miner who was interviewed stated;

> …when buyers are available, we have competitive prices per point or grams. Mining is a stable source of income for us and depending on the lucky for the day or shit, one can make USD 10, USD 100, or even USD 1000 depending on the points or grams one has managed to acquire. [P11].

It was further gleaned from the interviews and FGDs that the positive impacts of ASM mainly included the creation of job opportunities, the development of rural areas and the improvement of the standard of living. Despite ASM activities contributing to reducing unemployment via the diverse job opportunities it provides, it is gender biased as it is often referred to as a male-dominated industry. The study observe that lucrative mining opportunities are not provided to women that despite its positive impacts has contributed to the marginalisation of women in society.

The study through FGDs and observations uncovered negative impacts of ASM mainly occurred due to operational activities. Based

on the FGDs with the community members, it was established that the mining activities posed significant harm to the environment. The community members submitted that;

> These adverse effects of ASM as established by this study included health, social and environmental impacts. Environmental effects include land degradation, pollution by mercury, loss of farmlands and soil and water contamination, severe consequences to human and specifically local farmers, the social (increased crime rate, drug abuse, physical and sexual harassment of women, prostitution and increased vulnerability to HIV&AIDS and other sexually transmitted diseases.

These findings clearly illustrate the negative impacts associated with ASM on the socio-economic development of selected wards of UMP.

## CONCLUSION AND RECOMMENDATIONS

The article has represented and discussed data that was obtained from the field by the researcher. This research study was an assessment of the impact of artisanal mining on the socio-economic development of communities using a case of UMP districts in Mashonaland East Province. Care was taken to adhere to ethical standards by reducing the information about the participants to symbols and numbers to protect their identities. The study's objectives were presented, interpreted, analysed and discussed in their sequence. An outline of the current state of the environment, society and the economy of UMP were explained. The rural poor profit economically from artisanal mining to a greater extent as compared to any other source of livelihood. Even though the rural poor in UMP have benefited financially from artisanal mining activities, the government is losing more money because these gains were obtained illegally and without paying taxes. Artisanal mining does not generate enough revenue for the nation as a whole from direct taxes, but it does increase citizens' disposable income which that helps pay for ancillary taxes like VAT. There are instances of pollution (noise, water and air) that endanger people's health. Unstable social conditions are created in the mining community by social disputes brought on by illicit mining operations.

This study concluded that the lack of formal employment and limited livelihood options in the district and the entire country are the major drivers of illegal mining activities irrespective of the efforts made by the government to formalize the activity. The following is a cursory outline of recommendations:

- There is prerequisite to educate communities on the adverse environmental impacts linked with artisanal mining;
- There is need to modify other traditional livelihoods to avoid the ones that severely cause degradation;
- It is also pertinent to allow the registration of any size of the mining claims since the poorest might not afford to register large claims.

There is also an acute need for more research on the issues relating to drivers of artisanal mining activities over a wider study on why the illegal mining operations continue though the government is making some interventions to legalize the activity. Further research should also be conducted on issues about how the mineral obtained illegally is presented on the market. The availability of the market for a particular commodity drives more people into acquiring that commodity; hence artisanal mining in UMP is pursued due to the readily available markets.

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