Understanding small scale gold mining activities in Mazowe District in Zimbabwe through an Environmental Security lens for the period 2017-20.

Vunganai Chivore

DOI: 10.29322/IJSRP.11.02.2021.p11020
http://dx.doi.org/10.29322/IJSRP.11.02.2021.p11020

Abstract- The human security concept emerged as a result of contemporary global developments that triggered the manifestation of risks threatening the safety, survival and welfare of human beings and the environment, but which were not classified as security risks per ser. As such, there became a need to widen the scope and meaning of security by shifting attention and resources away from state protection concerns towards other emerging areas important to human survival and well being. The UNDP crafted human security concept which expanded security to include, political, food, economic, environmental, community and personal security as arms of security. This concept used other socially useful aspects in human life to identify the numerous threats to day to day survival for people and their communities.

This study identifies the environmental issues caused by the small scale gold miners in Mazowe district and assesses its impact as a human security issue for people living in that district. It attempts to assess the impact of the miner's activities, the problems and benefits on the well being or otherwise of the environment. In this research paper, a mixed method research method was adopted with qualitative research methods being prominent. The research methods that were adopted saw samples being drawn from the miners, residents, government departments which deal with mining, health, security and environmental issues, environmentalists and similar local organisations in Mazowe district. Given the gravity of the research, purposive sampling techniques were used with extreme variations in selecting the sample. Purposive sampling is useful to this research as it would enable the researcher to select unique cases that were informative. The researcher among other things conducted face to face interviews and also used observation as a tool for the research paper. The research paper established that, gold mining activities have incurably contributed to serious environmental damage such as deforestation, soil erosion, siltation, destruction of flora and fauna, buildings, exposing communities to diseases through the chemicals they use, crime and poor waste disposal methods. These activities have a huge negative impact on environmental security when looked at from a human security perspective.

I. Introduction

Security is defined as, absence of conflict, freedom from danger, or fear involving the protection of some referent object by reducing its vulnerability and by eliminating or lessening threats to its survival or well being (Von Tigerstrom 2007, p8). Traditionally, the concept of security was state centric, prioritising the instruments and agencies of the state. Security has been associated with a focus on order and stability and avoidance or management of conflict and change (Colak & Pearce 2009,p1). However, the definition of security as put above ignored the risks that threaten the safety, survival and welfare of human beings, the environment and the society, which may be brought about by other things which are not conflict. (Tow, 2000, p1). The need to widen the scope and meaning of security through the human security concept became apparent which would capture the transition from stat security to other aspects such as the environmental security. The UNDP Human Development Report, 1994, p23-24 defines human security as "freedom from fear and freedom from want characterised by safety from chronic threats such as hunger, disease, and repression as well as protection from sudden and harmful disruptions in the patterns of daily life, whether in homes, in jobs or in communities." The threats can be in non traditionally security areas such as the environment, economy, food, health community, poverty, personal and political. This transition of security from state security concerns towards other emerging areas important to human survival and well being is critical in this modern age (Von Tigerstrom 2002,p43). Consequently, this research paper seeks to utilise the modern framework of human security to analyse the impact of small scale gold mining in Mazowe on the environment and its security.

II. Background of the Problem

Mazowe district is a mineral rich district with the main mineral which is exploited there being gold. Although these activities are vital for the economic development of the country, considerable importance has been given to the gold mining activities whilst ignoring other critical aspects such as the environment. Mazowe District is arguably one of the richest gold mining districts in Mashonaland Central in general. More than forty percent (60%) of Maozowe District's population survives through small scale mining and related industries. (Zimstats, 2017). Despite the sector being lucrative, it has not been spared a fair share of challenges. Ncube 2012, states that mining claims have been allocated without following due and proper environmental impact assessments, especially to youths and other politically linked groupings primarily as a way to cultivate political patronage and support. This has had serious environmental impact on the environment, water bodies, consumers of the environment and the ordinary person in the district. According to Ajusa (2003), small scale mining activity in

Zimbabwe is highly characterized by profit motives at the expense of environmental protection. It is the impact of these profit motives which ignore environmental protection that we intend to show herein.

III. Research Questions

1. What are the environmental security problems caused by the small scale gold mining in Mazowe District?
2. What effect on environmental security do the activities by small scale gold miners in Mazowe District have?

IV. Research Aims

The aim of the research paper is to use the human security concept to analyse the environmental security threats for people in Mazowe caused by small scale gold mining. The study will identify the threats to environmental security to human survival and evaluate the impact of these activities on human security in the area. The research will also proffer solutions.

V. Research Objectives

1. To assess how small scale gold mining activities in Mazowe District between 2017-2019 are affecting the environmental security in Mazowe.
2. To propose solutions which enhance environmental security in Mazowe District.

VI. Research Hypothesis

Ho- Small scale mining activities in Mazowe District between 2017-2019 negatively impacted on the environmental security of the residents of Mazowe District.

Hi-Small scale mining activities in Mazowe District between 2017-2019 positively impacted on the environmental security of residents in Mazowe District.

VII. Motivation of the study

The increase in activity mining activity had both positive and negative impact on the environment and security issues associated with the environment some areas to a point of crisis. This has given rise to severe social implications such as deforestation, soil erosion, siltation and at times collapsing of structures such as buildings. This has had multiplicity of problems which would have been in turn caused by these activities. As such, the human security concept will be utilised to have a comprehensive appreciation of interrelated threats to the environment in Zimbabwe. Furthermore, there is an extensive overlap between the areas of environmental rights from a human security perspective and other aspects of security which we shall also briefly discuss.

VIII. Methodology

The purpose of this section is to discuss the methodological design of the research paper and seek to focus on the research design while extensively reviewing issues related to instruments used to gather data, the type of data gathered and an explanation of how data was analysed, as well as the methodological problems encountered during the research period. This research paper is an opportunity to obtain a more realistic feel and elaborate explanation of the environmental security problems in Mazowe. The research strategy was to a large extent unstructured and open to allow for the investigation of unexpected ideas which could only become apparent after the study began. For this reason, the research paper utilised a mixed research methods to produce both qualitative and quantitative data. Quantitative research methods were used to produce the descriptive data, which included, a detailed description of the economic, political and social challenges encountered by people living and working in Mazowe. The key element in this paper is that one district is focused on as a case study, hence there can be a comparison with other districts with similar activity. The research will improve the understanding of the case status and will provide an in-depth analysis which can be replicated in other districts. In addition, the research paper focused on the UNDP crafted environmental security framework as a plausible concept that can be utilised to understand the small scale gold mining situation in Mazowe.

Data analysis was an ongoing process from the beginning to the end of the research work. As such, the use of scientific qualitative research methods helped determine the applicability of the environmental security framework and adds validity and authenticity that could help future researchers. (Newman & Benz, 1998, 67). The primary purpose of collecting data was to gather information that would help provide answers to the following evaluation questions:

1. What are the environmental security problems caused by the small scale gold mining in Mazowe District?
2. What effect on environmental security do the activities by small scale gold miners in Mazowe District have?

Therefore, the study relied on both primary and secondary sources of data. Primary sources are regarded as sources of information written by people directly involved at a time the investigation was conducted. Hence, these resources form the basic and original material for providing raw evidence. On the other hand, secondary sources are those that discuss the period studied but are removed from the actual events. Therefore, secondary sources copy, interpret or judge material found in primary sources (Finnegan, 2006, p142). The paper also utilised official statistics related to environmental degradation, crime rate, unemployment rate and life expectancy among other statistics from national agencies such as Zimstats.

In order to collect relevant information related to the topic, the research utilised document review and analysis as the data collection method. During the study, it became clear that qualitative data analysis was an ongoing process, from the beginning to the end of the research work because different ideas were constructed, modified, refined, reorganised and in some instances rejected as inconsistent with the research topic. In addition, the process of document review and analysis involved a broad and wide based collection of resources such as textbooks, annual and special reports, government reports, official and

unofficial records, private papers and publications as well as statistical collections related to the study. Reading, in-depth understanding, analysis and review of these documents was essential in order to compare different ideas articulated by various authors on the subject of human security. These secondary sources provided detail and excerpts utilised to formulate the analytical framework of the thesis thus adding value and authority to the study. Furthermore, secondary data avails and provides large representative samples well beyond the resources of the individual researcher. Hence, these sources are good for examining trends, exploring issues, present and past. As such, it was easier to concentrate on data analysis and interpretation (Adams & Khan 2007, p117). Document review was utilised because it is cost effective as a data collection technique.

IX. Literature Review

The literature and data sources consulted can be divided into different categories. The first focuses on the background information of the human security concept in general. The UNDP human security components, list of threats to human security and critique of the concept, the link between human security and environmental security, as well as inherent weaknesses of the environmental security paradigm in ensuring human security. The second category has literature on the Mazowe case study. That is, information relating to environmental security threats to economic, food, health and political security problems for people living in Mazowe and the environmental rights obligations being violated thus undermining the security of individuals living in the country. The literature was selected with special attention and preference to those publications that address the thesis thematic area giving the pros and cons arguments in relation to the environmental security concept. In addition, the research consulted publications by authors from the academia and humanitarian field practitioners who have hands on practical experience in implementing human security projects in developing countries. Furthermore, literature regarding the Zimbabwe case study includes UN agencies reports and news flash, books and electronic articles by the academia and human development workers, country reports by environmental rights organisations and Zimbabwe news websites by journalists.

X. Findings

i. Mining methods used by small scale miners

A majority of the miners interviewed during this research paper use shaft mining, shaft mining and alluvial mining depending in the depth and location of the gold being extracted. Among most of the miners, there is a consistent absence of permanent structures on their mines. The labour force is cheap and the machinery used to mine is old, basic and rudimentary. This is consistent with the findings of Heemberk & Olivera (2003) that small scale miners are characterised by untrained labour force and use of rudimentary techniques for prospecting. 65% of the miners interviewed conducted open cast mining as a lot of the gold deposits of commercial value are found close to the surface. Where the artisanal miners dig tunnels, the tunnels are supported by risky timber structures without much engineering approval. The structures are a serious risk especially towards this rainy season a period toward which the research was conducted. The tools used by the miners are mostly basic tools such as hand axes, hoes, picks and shovels. Of all the thirty gold miners interviewed, only three had mechanised machinery such as excavators and graders which they where using to clear their land.

ii. Land Degradation

According to Dreschler, 2001, small scale miners utilize about 0.005% of the total land in use, but they move huge volumes of about 10 million tonnes of rock material every year in Mashonaland Central province alone. Mazowe being the busiest small scale mining district accounts for most more than 50% of the rock material moved every year. Shoko, 2005 argues that, the impact of individual operations is not essentially significant but the accumulated impact creates serious problems for the ecosystems dnf local communities. In the context of Mazowe, the main problems are the land disturbances, with some mining activities occurring on farming land, in cattle grazing fields and in human habitats. These findings are also supported by Dreschler 2001 who states that80% of thte stated operations are open casts or shallow pits less than 30m deep and they are always left uncovered and unprotected either during the period of mining or after they have been disused by the miners. Most of the soils exhumed by the miners are not capable of use for supporting plant growth thereafter. Further, this form of land disturbance is a huge contributor of siltation in the Mazowe dam, deterioration of water quality, reduction in grazing and farming land and in overall, the biodiversity of the environmental ecosystem is affected.

iii. Soil Erosion and siltation of surface water

The use of open cast and alluvial mining loosens the soil strength, causes the cutting down of trees and weakening of the top soil strength. Small scale mining activities generally do not have any environmental plans in place. Despite the existence of the Environmental Marketing Agency, which has statutory obligation to protect the environment and to enforce environmentally friendly business policies, its enforcement is totally absent on the ground. Trees, citrus fruits such as oranges and lemons and other crops are wantonly destroyed. The average small scale miner does not have adequate machinery to locate the gold belt and as such they just continuously dig trenches with the hope that they will get lucrative gold mineral in one or more of the trenches that they dig in. According to Pablo, 2006, the small scale mining activities are extractive in nature and this involves the removal of the surface of the soil, hence the alteration of the natural soil structure. The soils extracted from the deeper soil structures are not always suitable for agricultural activity. Further the use of mecury has had huge effects in water bodies which have killed some of the livestock belonging to farmers which consume that water

iv. Depletion of Forests

More than 50% of the miners interviewed argued that, they generally believe that where there are dense forests, there is usually a gold belt. Automatically what it translates to is the cutting down of dense forestry, all in the bid to obtain gold deposits. Further, 90% of the fuel used for things such as fire,

firewood comes from the same forest, hence, small scale mining is posing a serious threat to the structure of forestry in Mazowe. Chiwawa, (2003, p25) estimated that about four million tonnes of wood is used every year as fuel and is not replaced.

v. **Use of Mecury**

Mecury is continuously used for the amalgamation of gold. The use is not done by professionals or in a professional manner. Dreschler 2006, argues that, the main chemical toxin that comes from small scale mining is through the improper handling of mecury by the miners. He further argues that closes to 78% of all the water bodies in small scale mining areas are contaminated with mecury.

XI. Recommendations

The challenges affecting the environmental security require full concerted efforts of all state agencies and the miners themselves. The environmental management agency requires to be given full arresting powers or direct assistance by the Zimbabwe Republic Police to arrest violators. This recommendation is proffered because all the laws for the protection of the environment are already in place. It is on the enforcement side which we are seriously lacking.

References

[1] Zvomuya W. 2017, Environmental Crisis & Sustainable Development in Zimbabwe- A Social Worker Perspective, National Association of Social Workers, Zimbabwe;

[2] Ashton P, Love, (2001), An Overview of the impact f Mining and Mineral Processign Operations on Water Resources and Quality in the Zambezi Limpopo and Olifants Catchments in Southern Africa., South Africa;

[3] Mulongo K, Rodger K & Jemina N.K,(2005) The many faces of human security, case studies of seven countries in Southern Africa, Institute of Security Studies, South Africa;

[4] Rufu R, Understanding the Zimbabwe through the human security lens, 2005-2009, School of Global Studies, Sweden;

[5] Muraza T, The impact of illegal gold mining on the environment in Kwekwe, School of Developmnt Studies, Zimbabwe;

[6] Chimonyo G(2003), Impact of mining on external environment, CSM Associates, London;

[7] Becker H., (1991) Socio Economic and environmental impact of gold mining- a case study of Penhalonga, 1990,Longman, Zimbabwe;

[8] Moyo (2005) Zimbabwe's Environment Dilemma, Balance Resource Inequalities, ZERO, Zimbabwe;

[9] Shoko (2003), Establishing training guidelines on environment protection management for small scale mining, MMCZ, Zimbabwe.

Authors

First Author – Vunganai Chivore