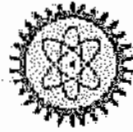


BUSITEMA



UNIVERSITY

FACULTY OF NATURAL RESOURCES AND ENVIRONMENTAL SCIENCES

THE ENVIRONMENTAL IMPACTS OF VERMICULITE INDUSTRY: A CASE OF
NAMEKERA VERMICULITE MINE IN BUTIRU SUB-COUNTY MANAFWA DISTRICT.

BY

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REG NO: BU/UP/2014/2018

A RESEARCH DISSERTATION REPORT SUBMITTED TO THE FACULTY OF
NATURAL RESOURCES AND ENVIRONMENTAL SCIENCES IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A
BACHELOR'S DEGREE OF SCIENCE IN NATURAL RESOURCE ECONOMICS
OF BUSITEMA UNIVERSITY

JULY 2017

DECLARATION

I NAKHOMBI IVAN declare that this work is out of my own knowledge and research due to the acknowledgement which was accordingly done in form of references to other people's ideas, and it has never been submitted to any organization or any university for an award.

Signature.....

date.....08/07/2017.....

NAKHOMBI IVAN:

APPROVAL

This serves to certify that this research by **NAKHOMBI IVAN** has been submitted with my approval as a University supervisor of Busitema University.

University Supervisor's Name:

MS. ARIANGO ESTHER

Signature

date

.....

.....

DEDICATION

This piece of work is dedicated to the family of my father Mr. Mukhama Peter and my mother Miss Khalayi Merida in appreciation of the support, love and care they provided to me. I also dedicate to my beloved sisters and brothers Khainza Gloria, Nandala Moreen, Kainza Martha, Khayiyi Jane and Wasipokoli Jorum, Watuwa Brian, Wandeba Aaron, and Nambafu Emma, my friends Muduwa Agnes, Ngoroko Simon Peter, Bisanga Sufyan, Edet Favorite, and Jaya Ernest including all my guardians and lecturers for the courage and knowledge that they offered to me, May the almighty Lord reward them abundantly.



ACKNOWLEDGEMENT

I acknowledge my university supervisor Ms Ariango Esther for the support, tireless efforts and time during the preparation of this piece work.

Great thanks go to dear friends who helped me during the time when this research was being conducted for their guidance and encouragements offered to me.

Finally I acknowledge the family of Mr. Mukhama Peter and Miss. Khalayi Merida for their support.

I give grate thanks to the Almighty GOD who gave me the gift of life and enabled me go through unbearable times at the University.

With the positive gratitude, I greatly acknowledge the entire BUSITEMA UNIVERSITY for its contribution and support to the success of this research.

.....FOR GOD AND MY COUNTRY.....

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LIST OF ACRONYMS

SPSS	Statistical package for social scientists
GDP	Gross Domestic Product
CEC	Cation Exchange Capacity
OMRI	Organic Materials Review Institute
EPA	Environmental Protection Agency
SAMI	South African Mineral Industry
GDFI	Gross Domestic Fixed Investment
SMA	Strategic Minerals Association
ATSDR	Agency for Toxic Substances and Disease Registry
SMRs	Standardized Mortality Ratios
SRRs	Standardized Rate Ratios
NDI	National Death Index
ICD	International Classification of Diseases
WHO	World Health Organization
NIOSH	National Institute for Occupational Safety and Health
B.C	British Columbia
NEPF	National Evaluation Policy Framework
DPME	Department of Planning, Monitoring and Evaluation
DMR	Department of Mineral Resources
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
TOR	Terms Of Reference

EMPR	Environmental Management Programme Report
MPRDA	Mineral and Petroleum Resources Development Act
NEMA	National Environmental Management Act
NEMLA	National Environmental Management Laws Amendment Act
LTD	Limited
NEMA	National Environmental Management Authority

ABSTRACT

The study aimed at examining the **ENVIRONMENTAL IMPACTS OF VERMICULITE INDUSTRY CASE OF NAMEKERA VERMICULITE INDUSTRY IN BUTIRU SUB-COUNTY IN MANAFWA DISTRICT**. The general objective of the study was to determine the environmental impacts of vermiculite industry on the livelihood of people living in Butiru sub-county, Manafwa district. The study used both qualitative and quantitative approaches to collect data that was analyzed and presented by the help of computer software like spss and excel. The methods of used to collect data were interviews, questionnaires (appendix 1), and field observations. The data was collected from the sample of 60 respondents particularly from the industrial workers and the immediate communities or villages around the vermiculite industry.

It was established that the community of Butiru has been affected by the existence of the vermiculite industry attributed to its industrial activities thus agricultural production has been lowered and also prevalence of the health problems faced by the community natives and the industrial workers.

It has been indicated in the findings where the local communities are affected by agricultural losses in crop production and animal rearing due to industrial activities. It was found out that also the highest number of respondents is affected by the health problems due to the existence of the vermiculite industry and its impacting activities especially during processing of vermiculite hence flu has been the prominent health problem faced by the locals. Also findings indicate that most individuals and the entire community have benefited from the existence of the vermiculite industry through infrastructural development and employment opportunities.

Findings also show that the industrialization policies and rules are not enforced properly due to severe pollution and low compensations offered to the affected parties thus the quality of the environment has been damaged. Also findings indicate that most respondents incur loss or costs in obtaining clean safe water from nearby villages which could have not been the case if the industry never existed.

Therefore this study will be used by policy and decision makers in designing and implementing the policies in regard of allocation of industrial projects and processing sites of vermiculite and other related mineral industries when setting up the standards for acceptable levels of emissions

(pollution levels) without compromising the welfare of the a biotic and biotic ecosystem services or functionality hence attaining sustainable development and environmental quality.

In summary, the vermiculite industry emits a lot of dust and smoke particles into the environment that has affected negatively the local communities of Butiru sub-county through business inconveniences, loss incurred in obtaining clean safe water and poor agricultural yields plus severe cases of health problems affected the locals in the industry and the entire community.

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CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

This chapter briefly elaborates on the location of the study area and the vermiculite mine site thus digging partially deep in to the formation of vermiculite mineral and mining in Uganda.

1.2 Back ground:

Namekera vermiculite industry is found in Manafwa district of eastern Uganda. It's in between two sub-counties that Bugobero where the mineral is excavated and Butiru where the processing plant is constructed. Manafwa is bordered by Kenya in the east, Bududa in the north, Mbale in the North West and Tororo in the south west of Uganda. It's located off Mbale –Tororo 11kms from Magodesi trading centre found in Butiru -Bugobero sub-counties in Manafwa district. It employs over 100 employees including the technical, semi and un-skilled employees. This industry was established in early 2000's by IBI Corporation, a Canadian mining company. Namekera Mining Operation, the largest vermiculite mine in Uganda. Rio Tinto Vermiculite Company bought the mine from IBI Corporation and currently is owned by the Gulf Resources an Australian company. The mine is considered to be one of the largest high grade vermiculite mineral deposits in the world. (<http://bit.ly/INTEWAN>)

1.3 THE UGANDA'S VERMICULITY INDUSTRY:

The mining industry of Uganda, documented as early as the 1920s, witnessed a boom in the 1950s with a record of 30 percent of the country's exports. It received a further boost when mining revenues increased by 48 percent between 1995 and 1997. However, the World Bank reported that the sector's contribution to gross domestic product (GDP) dropped from 6 percent during the 1970s to below 0.5 percent in 2010. Uganda's extractive industry activities have been identified by the Natural Resource Governance Institute as focused on "extraction of cobalt, gold, copper, iron ore, tungsten, steel, tin and other industrial products such as cement, diamonds, salt and vermiculite". Limestone is sold in local markets whereas gold, tin, and tungsten are major exports.

Vermiculite is a naturally occurring mineral mined in the United States, Brazil, Argentina, Mexico, South Africa, Zimbabwe, Kenya, Uganda, Egypt, India, Russia, China, Japan, and Australia. Mined vermiculite

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