

**THE SOCIO-ECONOMIC IMPACT OF SAND WINNING IN
THE GA DISTRICTS**

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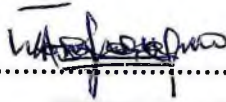
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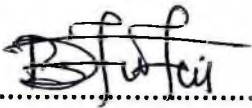
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DECLARATION

I, Thomas Tagoe hereby declare that this dissertation is entirely my own work produced from research undertaken under supervision and that neither part nor whole of it has been presented for another degree elsewhere.



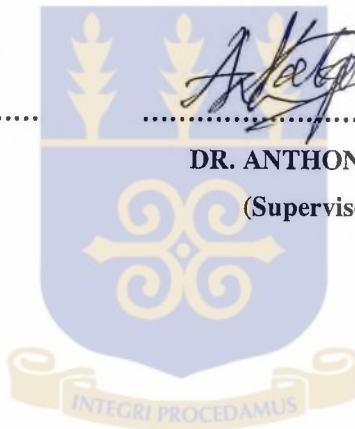
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DEDICATION

This study is dedicated to my wife Marian Grace Tagoe and two children Naa Ayeley Tagoe and Nii Ayitey Tagoe for the encouragement and support to go on when it became evidently impossible to continue with this course.

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I wish to express my profound gratitude to all the people who in diverse ways supported me in this study. My sincerest appreciation goes to my supervisors; Dr. D. K. Twerefou, Dr. Anthony Tsekpo, Dr. Osei Akoto and all other teaching and non-teaching staff at ISSER for their cooperation and support. I also wish to thank my father and mother-in-law, Mr. and Mrs. P.S. Barnor for providing me with the seed funds for this course and other domestic supports and all officials of the Ga District Assemblies, especially the Head of the District Health Management Team, the Geodetic Engineer, the Special Assistant to the DCE in charge of sand, stone and gravel winning, the District Planning Officer, Registry, Programme Officer- EPA. Special thanks also go to the Sand and Stone Contractors Union, Chiefs, elders and all selected households for making available useful data for the study.

TO GOD BE THE GLORY

ABSTRACT

One major problem found in the Ga districts is indiscriminate sand winning and its associated negative effects on the environment, farming and health. This study therefore aims at identifying and measuring the impact of sand winning on the socio-economic life of communities in the Ga districts. To achieve these objectives, the study examines and evaluates institutional and operational framework controlling sand winning communities and provides recommendations.

I apply a cross sectional descriptive and expository method using frequencies, pictures, cross tabulations and means to measure the impact. Stakeholders such as the communities, chiefs and elders, district officials among others were interviewed. Data were also collected from Minerals commission, Town and City Planning Departments and the Ga District Assemblies.

Findings from the study reveal that there is non-adherence to the ungazetted bye-laws and other operational standards by sand winners and some stakeholders. There are both positive and negative effects associated with sand winning. The benefits include income for the land owners, revenue for the districts assemblies, source of raw materials for building and construction and employment for the youth. The study further revealed that sand winning activities have serious negative effects on farming with most farmlands being leased for sand winning purposes. Health problems like malaria, skin diseases, buruli ulcer among others are found associated with indiscriminate sand winning activities. Other negative effects include low incomes, poor nutritional levels, increases in school drop-out and environmental degradation such as land degradation, air pollution noise pollution,

Based on my findings I recommend the districts to expedite action on gazetting the bye-laws for their effective enforcement and co-ordination amongst all stakeholders to enforce operational standards and to monitor the operations of sand winners. Other recommendations include; provision of education for all stakeholders about the institutional and operational framework, adoption of participatory approach to monitoring the operations of sand winners and creation of incentive for sand winners to operate legally.

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CHAPTER ONE

INTRODUCTION

1.1 Background

One of the landmarks of any nation is the achievement of sustainable development. This is an attempt to find an appropriate balance between economic growth and the preservation of natural resources. In other words, it is the management of the earth resources such that the long-term quality and abundance are ensured (Council of Environmental Quality, 1987). Sustainable Development is also defined as the development that meets the needs of the present generation, without compromising the ability of future generation to meet their own needs (The World Commission on Environment and Development, 1987).

Analysis of population growth and migration in Ghana has revealed that there is rapid urbanization and migration from the hinterlands into the cities and towns. The total population in the Ga Districts in 1984 was 117,268 with a density of 211 persons per square kilometre. By the year 2000, the population has increased to 473,404, representing a 403.7% increment with a density of 851 persons per square kilometre. Majority of these increments can be attributed to immigration (ISSER and IAS, 2003). Table 1.1 presents population by locality in the Ga Districts.

Table 1.1: Internal migration Pattern and Trend of localities in the Ga District.

LOCALITY	POPULATION		PERCENTAGE INCREASE
	1984	2000	
Madina	28,364	76,697	270.4
Dome	1,954	29,618	151.9
Gbawe	837	28,969	3461
Taifa	1,009	26,145	2591.1
New Achimota	2,417	22,767	941.9
Awoshie	105	19,890	18,942.80
Ofankor	1,649	16,177	981
Anyaa	39	15,738	40,353.80
Chantan		13,585	
Amanfrom	293	12,803	4369.6
Adenta West	587	12,559	2139.5
Sowutuom		12,520	
Pokuase	2,527	10,585	418.8
Santa Maria	-	10,775	
Nii Boye Town		9,850	
Tabora		8,778	
Mandela		8,458	-
Tantra Hill	127	8,047	6336.2
Mallam		7,153	
Kwashiebu	-	7,143	-
TOTAL	96,450	191,918	199

Source: Abofra et al., 2004

The Ga Districts¹ have large deposits of sand, stone, and gravel and thus, serve as the main source of construction materials for the Accra metropolis and the surrounding areas. Sand winning is a major economic activity in the districts. However it impacts negatively on the environment, farming and health. The increases in population coupled with the unsustainable exploitation of the natural resource through excessive sand winning poses a threat to sustainable development in the Ga Districts

¹ The formerly Ga district, is now divided into Ga West and Ga East District Assemblies.

In September 2000, the largest-ever gathering of Heads of State ushered in the new millennium by adopting the UN Millennium Declaration. The Declaration, endorsed by 189 countries, was then translated into a roadmap setting out goals to be reached by 2015.

The eight Millennium Development Goals (MDGs) built on agreements made at United Nations conferences in the 1990s represent commitments to reduce poverty and hunger, to tackle ill-health, gender inequality, education, access to clean water and environmental degradation.

The MDGs are framed together to recognise the contributions that developed countries can make through trade, development assistance, debt relief, access to essential medicines and technology transfer.

Ghana is placing increasing emphasis on the Millennium Development Goals (MDGs) and stepping up its efforts to achieve them. This has been translated into stronger advocacy, formulation of specific policies and stronger linkages between the MDGs and the 2003-2005 Ghana Poverty Reduction Strategy (GPRS). The 2003-2005 GPRS identifies the five areas that the Government identified as priorities for its strategy to fight poverty. These are:

- Sound economic management for accelerated growth;

- Increased production and promoting sustainable livelihoods;

- Direct support for human development and the provision of basic services;

- Special programmes to support the vulnerable and excluded;
- Good governance and increased capacity of the public sector.

To achieve these priorities at the district and local levels, all district assemblies were charged with the preparation of 3-year Medium Term Development Plan. The formulation of GDAs 3-year Medium Term Development Plan was hence prepared within the context of the Ghana Poverty Reduction Strategy (GPRS)

According to the Ga District Medium Term Plan, “All year round excessive amounts of sand, stone and laterite are won indiscriminately throughout the district for estate development and construction. Large tracts of hitherto fertile agricultural lands that have undergone massive destruction can be found in areas like Manhean, Ablekuma, Achiaman, Oblogo, Nsakina Doblo-gonno, Kwabenya, Mallam Gbawe and Ayikai-Doblo. Majority of the rural people who used to engage in subsistence farming has now been denied the right to their fertile farmlands and their source of livelihood. The resultant manholes have also served as fertile breeding grounds for organisms that cause diseases such as malaria, guinea worm, schistomiasis and buruli ulcer. The Ga District Assembly (now divided into Ga West and East Assemblies) has over the years instituted measures to reverse the trend but not much has been achieved due to lack of support and co-operation from landowners” (GDA, 2002).

This study therefore attempts to ascertain the impact of sand winning on the socio-economic life of the people in the Ga Districts. The study investigates into how

health, environment and other economic activities like farming and hunting are affected negatively. It also considers the benefits of sand winning such as income for land owners, source of material for construction and building, work for the youth and revenue for the district assemblies. It is hoped that recommendations made at the end of this study on the effective management of sand winning activities would be applied by all stakeholders for increased production and promoting sustainable livelihoods in a healthy and productive environment for accelerated growth and development.

1.2 Problem Statement

The Ga Districts like most rural districts are faced with developmental problems. Indiscriminate sand winning is one significant problem bedeviling the growth and development of the Ga Districts, lying adjacent to the Accra metropolis. There is indiscriminate sand winning causing land degradation, air pollution and destruction of the ecosystem. Most farmlands have been lost to sand winning activities. Man holes which are created by sand winners in most cases are not reclaimed. These holes collect water when it rains creating fertile breeding grounds for mosquitoes and other disease causation organisms. This situation has emerged due to the inability of the district assemblies to adequately manage the activities of sand winners within the districts. This development coupled with the inability of the communities and other stakeholders to put in appropriate measures aimed at reclaiming the land after the sand winning had led to the destruction of the serene beauty of the districts. Furthermore, the inability of the communities, the district

assemblies and other stakeholders to assess the socioeconomic impact of sand winning has slowed down the pace of growth and development in the districts.

1.3 Objectives

This study aims at identifying the impacts of sand winning on socioeconomic life of the people in the Ga Districts. The secondary objectives are to:

- Examine and evaluate the institutional and operational framework within which the activities of sand winning is carried out in the Ga Districts
- Examine the socioeconomic effects of sand winning activities on the lives of communities in the Ga Districts.
- Provide recommendations on how these problems could be mitigated by all stakeholders for sustainable development in the Ga districts.

1.4 Relevance / Justification of study

Any economic activity cannot be sustainable if human health, environment and other socio-economic factors are adversely affected. Economic activities that ignore socioeconomic impact simply transfer high cost to the community and other stakeholders. This happens when the net benefits from that economic activity turn negative. Where the cost of mitigating the negative effects exceeds the benefits of an economic activity, there is a negative net benefit. This study would therefore be relevant to all stakeholders in community development especially, environmental practitioners, health workers, Non-governmental organizations (NGOs) and estate developers. Generally, the study will assist such stakeholders in the assessment of socio-economic factors that may determine the success of their work in the Ga

districts. Furthermore, it brings to the fore the interrelationships that exist amongst the community, the Ga District Assemblies, and other developmental organizations in mutually finding lasting and sustainable measures in dealing with problems that affect the districts. Additionally, the study will assist in fostering a better partnership between the community and all the other organizations involved in solving the problems associated with sand winning in the districts using the participatory approach. It will also make some policy recommendations towards mitigating these problems. Finally, with findings of how problems associated with sand winning in the Ga district has been caused and its management, this study will serve as a source of literature to researchers and provide the basis for further research in this area.

1.5 Outline of Dissertation

The report is divided into five main chapters. Chapter one consists of the background, the problem statement, objectives, relevance / justification of study and outline of dissertation. Chapter two is devoted to the institutional and operational framework of sand winning activities and literature review. Chapter three constitutes the methodology made up of; the study area, scope of study, operational variable, sample design and method of data collection and analysis. Chapter four presents the analysis and discussion of the research findings. Chapter five, the final chapter presents the conclusions and recommendations.

1.6 Limitation of the study

Data were not collected without difficulty, most especially official data.

The estimates from a sample survey are affected by two types of errors: (1) non-sampling errors and (2) sampling errors. The non-sampling errors are the results of mistakes committed in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the study to minimize this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically. Conscious efforts were however made to reduce non-sampling error by training experienced interviewer and data entry operator to collect and process the field data.

Sampling error on the other hand however, can be evaluated statistically. This type of error is measured in terms of standard error. It is the measure of variability between all possible samples that could be selected. The standard errors of various selected variables considered to be of interest in the study can be found in Table 4.3

Inadequate resources such as time and funds are other limitations also grappled with in this research.

CHAPTER TWO:

INSTITUTIONAL AND OPERATIONAL FRAMEWORK FOR SAND WINNING AND LITERATURE REVIEW

2.1 Institutional framework for sand and stone extraction in Ghana

The legal/institutional framework under which sand winning takes place in Ghana and the Ga districts in particular is defined by the following laws: the Minerals and Mining Law PNDCL 153, as amended by Act 475, Small Scale Mining Law PNDCL 218, Sand Winning and Stone Quarrying Bye-Laws and Environmental Assessment Regulations Law LI 1652. Four main organizations; the Minerals Commission, the Mines Department, the Environmental Protection Agency and the District Assemblies are tasked with the enforcement and monitoring of these laws through the different roles they play in the districts.

Role of the Minerals Commission

Sand is considered as a mineral. It therefore comes under the Minerals and Mining Law (PNDCL 153) of 1986. The Minerals Commission was established under the Minerals Commission Law of 1986 and amended by the Minerals Commission Act of 1993, to be responsible for the regulation and management of the utilization of the mineral resources of Ghana. The Commission is also responsible for the co-ordination of the policies in relation to mineral resources. Specifically the Commission was to:

- formulate recommendations of national policy for exploration and exploitation of mineral resources with special reference to establishing national priorities having due regard to the national economy;
- advise the Minister on matters relating to minerals;
- monitor the implementation of laid down government policies on minerals and report on this to the Minister;
- monitor the operations of all bodies or establishments with responsibility for minerals and report to the Minister;
- receive and assess public agreements relating to minerals and report to Parliament; and
- secure a firm basis of comprehensive data collection on national mineral resources and the technologies of exploration and exploitation for national decision making.

The Minerals and Mining Law (PNDCL 153) of 1986 applies to all prospective sand winning contractors. Contractors need to obtain license from the Minerals Commission before they can operate in the districts.

This law thus was made to control indiscriminate mineral extraction in order to avoid environmental problems such as land degradation, air pollution and noise pollution which eventually impact negatively on the socio-economic life of the community. Additionally, Environmental Protection Agency and the District Assemblies should be satisfied before permit can be obtained for the activity in question to begin.

Role of the Environmental Protection Agency

The Environmental Protection Agency (EPA) was set up under the EPA law of December 1994. Generally, the role of the EPA is to ensure that all developmental activities in the country take account of environmental concerns through Environmental Impact Assessments (EIA's) and also to ensure that there is regular inspection and monitoring of environmental quality.

The Minerals Commission and Mines Department collaborate with the EPA in implementing the inspection and monitoring activities. General guidelines have also been developed to outline how mining activities can be carried out in an environmentally responsible manner.

The Environmental Protection Agency Act, 1994, Act 490 established the Environmental Protection Agency with the following specific duties that relate to this study:

- to advise the minister on the formulation of policies on all aspects of the environment and in particular make recommendations for the protection of the environment
- to co-ordinate the activities of bodies concerned with technical or practical aspects of the environment and serve as a channel of communication between such bodies and the ministry
- to issue environmental permits and pollution assessment notices for controlling the volume, types, constituents and effects of waste, discharges, emissions, deposits or other sources of pollutants and substances which are hazardous or potentially dangerous to the quality of the environment or any segment of the environment

- to issue notice in the form of directives, procedures or warnings to such bodies as it may determine for the purpose of controlling the volume, intensity and quality of noise in the environment
- to prescribe standards and guidelines relating to pollution of air, water, land and other forms of environmental pollution including the discharge and control of toxic substance
- to ensure compliance with laid down environmental impact assessment procedures in the planning and execution of development projects including compliance in respect of existing projects
- to act in liaison and co-operation with the government agencies, district assemblies and other bodies and institutions to control pollution and generally protect the environment
- to promote effective planning in the management of the environment
- to impose and collect environmental protection levies in accordance with this Act or regulations made under this Act.
- to initiate and pursue formal and non-formal education programmes for the creation of public awareness of environment and the maintenance of sound ecological system in Ghana.
- to promote studies, research, surveys and analysis for the improvement and protection of the environment and the maintenance of sound ecological system in Ghana, and
- to conduct seminars and training programmes, gather and publish reports and information relating to the environment

By the above listed measures the companies are required to register with EPA for an Environmental Permit. This is to ensure that extraction activities will be

conducted with minimal adverse effects on the environment and eventually socioeconomic life. Currently, there are only two professionals in the districts to see to the implementation of the above listed responsibilities.

Role of the Mines Department

The Mines Department was first established in 1902 at Tarkwa. It derived its mandate from enactments made over the period until 1986 when these enactments were replaced in some cases by the Minerals and Mining Law, PNDCL 153. Generally the Mines Department exists to ensure compliance with Ghana's mining and mineral Laws and Regulations through effective monitoring and the provision of other needed sector services. The Mines Department was established with the following specific duties;

- Compliance and enforcement of occupational health and safety regulations for the mining sector;
- Inspection of areas of mineral operations to ascertain whether any nuisance is created in the area by the mineral operation (Environmental Monitoring carried out by a team of 5 police officers and a driver);
- Issuance of operating permits for reconnaissance, exploration and mining;
- Enforcement of licensing and leasing provision of Mineral titles;
- Control of mines, mills and other mineral treatment plants; ensuring that wasteful mining or ore treatment practices are not used in these operations;
- Examination and enquiries into mining related accidents and incidents;
- Compilation of mine accident statistics and dissemination of information thereon;

- Technical inspection, control and enforcement of technical regulations for mining (including winning/mining of Building and Industrial minerals);
- Inspection of distribution, storage and handling of explosives; enforcement of the Explosives Regulations both within and outside the Mining Sector.
- Training of personnel handling explosives;

In spite of the above listed responsibilities, there are only three professionals at the Mines department.

Role Of The District Assemblies

Sand winning like any other mining activity has both legal and institutional arrangement for their operation. This is to ensure environmental sustainability and sustainable development. Under Local Government Act (Act 462) section 51, the District Assemblies are made the managers of environment within their jurisdiction. This act grants the District Assemblies the sole responsibility to manage the environment by making sure that all prospective contractors and the traditional authorities conform to sustainable environmental practices stated in the bye-laws for sand winning and stone quarrying in the Ga districts.

A monitoring team comprising officers from the EPA, Town and Country Planning, District Assemblies and other stakeholders have reduced into a one-man team.

Sand Winning and Stone Quarrying In the Ga District: Bye-Laws.

In exercise of the powers conferred upon the district assemblies by section 51 of the Local Government Act, the Ga district assembly has made the bye-laws on sand, stone and gravel winning. The bye-law state that:

1. Any person desirous to operate or win sand, stone or gravel within the jurisdiction of the Ga District Assembly (GDA) shall apply to the planning committee of the Assembly for permit to do so.
2. The application for permit shall;
 - a. State the name and address of the applicant
 - b. Enclose site plan of the area of his/her operation
 - c. State the mode of winning, namely, excavation by mechanical means or by manual means
 - d. State the duration of mining operation
 - e. Be countersigned by the Assemblyman or woman of the area
3. When all due processes have been satisfied, the Planning Committee shall recommend that the permit/license be granted to the applicant by the district assembly
4. The permit or license shall state;
 - a. The name and address of the operator
 - b. The hours of operation this by these laws shall be 5 a.m. to 7 p.m.
 - c. The duration of the permit or license
 - d. The fee to be paid for the permit/license which by these bye laws shall be determined by GDA periodically
5. No person shall win sand, stone and gravel for commercial purposes within the area of authority of GDA without a permit/license. Defaulters shall be liable on conviction to a fine of ₵20million or in default 5 year's imprisonment or to both. The permit shall be produced on demand at the site at all times to the GDA.

6. Rents from mining operations within the jurisdiction of the GDA shall be as specified in the fourth schedule to these bye laws
 - a. Defaulters on sand wining shall be liable on conviction to a fine of ₵20 million or in default 5 year's imprisonment or to both.
 - b. Failure to produce such receipts or tickets on demand shall render the sand winner or his agent , namely the driver of the truck subject to a penalty of ₵500,000 and the sand shall be seized by the DA
7. The driver of any truck loaded with sand shall pay a loading fee to be determined by the GDA per trip and be issued with a receipt. The receipt shall be produced on demand at all times to GDA task force. Defaulters shall pay a fine of ₵500,000 and have the sand confiscated by the GDA
8. No license shall sublet, assign, sell or part with his/her license to another operator without the prior consent of the GDA. Defaulters shall have their licenses withdrawn and be blacklisted by the DA
9. Any sand winner who fails to reclaim the land where he/she won the sand may forfeit his or her entire deposit to the DA and be blacklisted as well.
10. Deposit of ₵15 million shall be paid by every sand winner before commencement of operations against cost of reclamation in the district. 50% of this sum may be refunded to the sand winner after he or she has finished operations and satisfied all requirements in these bye-laws.
11. The assembly shall be under no liability for any loss or damage to the site or any sand that is due to the breach of these bye-laws or any other cause whatsoever.

12. Any driver or vehicle caught within an unauthorized pit winning sand commits an offence punishable by a spot fine of ₵1 million or the vehicle is impounded until payment is done.
13. Any truck loaded with sand caught working outside the working hours of operation shall have the sand confiscated to the GDA and a fine of ₵500,000.00 shall be levied against the driver of the vehicle

2.2 Literature Review

There is limited literature on the subject matter. However there are few useful studies on sand winning and other mining activities in Ghana. In the subsequent paragraph I provide a brief review of these literatures.

According to Simon et al, (2000) rapid urbanization is changing the population structure, density, and land-use in and around the city of Kumasi. As elsewhere, poverty levels are high (cf. Satterthwaite, 1995; Rakodi, 1999; Briggs and Mwamfupe, 2000). Uncoordinated and only partially planned conversion of farmland to housing through an increasingly monetized market (Kasanga 1999), and intensifying natural resource exploitation (including loss of forest and other natural groundcover, **widespread sand winning**, and the declining availability and quality of water) are now particular problems. While arguably perhaps inevitable, they (Simon, McGregor, Thompson and Nsiah-Gyabaah, 2000) contend that the situation need not have been so severe given that the area has well-established and legitimate traditional community institutions and a high degree of formal political organization.

According to the GDA Three-Year Medium Term Development Plan,(2002) the district is endowed with mineral resources notably sand and limestone, clay deposit laterite and salt which is being over-exploited without regards to the deteriorating effects on the environment. In fact, the district has for the past decades served as the source of raw materials for the construction industry both within and outside the district, especially the Accra Metropolis. All year round excessive amounts of sand, stone and laterite are won indiscriminately throughout the district for estate development and construction. Among the large tracts of hitherto fertile agricultural lands that have undergone massive destruction can be found in locations as Manhean, Ablekuma, Achiaman, Oblogo, Nsakina Doblo-gonno, Kwabenya, Mallam Gbawe and Ayikai-Doblo.

Owusu and Albert (2002) attributed the intensified activities of sand winning and stone quarrying in the Ga District within the last two decades to the increasingly high demand for sand and gravels by the construction industry in the Greater Accra Region and surrounding areas. These activities have resulted in environmental consequences such as soil erosion and the removal of the top soil leading to unproductive farmlands. These environmental problems can be associated with the population increase in the capital, Accra and its environment. The size of the present towns (i.e., Ofankor, Pokuase, and Amasaman), which were villages, have expanded by about 10 times since 1965.

Owusu and Albert (2002) further identified the problems associated with sand winning and quarrying activities in the Ga district to include, destruction of flora and fauna resulting in deprivation of the local people of a source of livelihood such

as fishing and farming, deforestation and soil erosion leading to unproductive farmlands, and breeding ground for mosquitoes in ponds and stagnant waters created by sand winning and quarrying activities.

Benet Akwaku reported in the Chronicle of Tuesday May 27, 2003 that the virtual absence of supervision over stone quarrying and sand winning in the Volta region has exposed the region to land degradation. The paper reports that, sand winning and stone quarrying takes place randomly in the region while the authorities look on helplessly. The paper further reported that land in communities like Sokode, Bame and Akroful are suitable for groundnut cultivation but has been evaded by sand winners.

Benet Akwaku also indicates that, the levy of only ₵60,000 and ₵100,000 for sand winners and stone quarrying operators is not deterrent enough and that the institutions to oversee the environmental management team are not working. Linking this to the increasing population in the national capital, the Ga District will even have a more serious situation.

According to Birley and Lock (1999), as countries develop, they experience a process of transition, which is related to their economic condition but affects their population birth and death rates, nutritional standards, environmental and health status (Kjellstrom and Roseastock, 1990, Rossi-Espagnet et al, 1991, Smith 1991b, 1997, Bobadilla et al., 1993; Anon, 1995a 1996b Popkin 1996).

Birley and Lock (1999) further claimed that traditional health hazards are partly the consequence of local environmental hazards. These have immediate and local consequences on health and that rural health hazards are more typically communicable such as diarrhea, worm, malaria and respiratory infection but also include the consequences of under-nutrition and poor childbirth practices.

Mensah, John Victor, (1997) in his study “Causes and Effects of Coastal Sand Mining in Ghana”, argues that coastal sand needs to be exploited to satisfy human demands but this requires efficient and effective resource management to ensure sustainable development. It also calls for a concerted effort by policy makers, sand contractors, engineers, traditional rulers and local residents to find a solution to the coastal environmental crisis.

One of the strategies mapped out in the forest and wildlife policy (1994) for institutional strengthening is the review of legislative instruments and administrative arrangements to ensure effective resource management and administration towards sustainable development, and in particular to prevent any farming, logging sand-winning or galamsey activities from taking place along the banks of streams, rivers and lakes.

The final report of the Ghana Land and Forestry Policy Support Facility (2005) included a study on mining. The Wasswa West District with its capital at Tarkwa was selected for this case study because it has the largest concentration of mining activities in the country. The key issue which emerged was mining policies versus the preservation of the environment. It was observed that whilst mining may lead to growth in the economy by creating employment opportunities in their areas of

operations and thus contribute to poverty reduction in those areas, it was a key agent for environmental degradation. Uncontrolled exploitation may lead to over exploitation and eventual destruction of flora and fauna.

CHAPTER THREE

HISTORY AND METHODOLOGY

3.1 Historical Background of Sand Winning In The Ga Districts

Sand winning in the Greater Accra Region started in the 1960's in Accra. Women who lived in coastal towns like Chorkor and Gbegbeyesei usually gathered and sold beach sand to contractors who went for sand from the beaches with their tipper trucks. With an increasing population growth, sand winning activities intensified with more men joining the economic activity. By the mid to late 1970's the authorities had relocated the winning of sand to Bortianor to prevent the further deterioration of the sea defence wall. It was only in the 1990's that the 1897 Beaches Obstruction Ordinance (cap 240) and the 1982 PNDC Law 42 were enforced to ban this activity. This was due to the destruction of the coast line and the sea defence wall leading to the occupation of certain localities along the coast by the sea. This new development led to the exploration of pit sand off-shore. With further growth in populations in Accra the need for housing and shelter led to an increase in the demand for sand in the building and construction industry. Sand winning therefore has to increase to meet the excess demand. The position of the Ga District Assembly makes it a safe haven for sand winners whose activities have received much concerns and restrictions from the Accra Metropolitan Assembly (AMA). With new communities springing up along all the boundaries with adjoining districts some communities like Ablekuma, Oyarifa etc were bound to experience indiscriminate sand winning.

With time it was established that sand from the Ga Districts could be classified as one of the best and was used in the construction of roads and buildings. It must however be recalled that all these had gone on without any control over the preservation of the environment and other natural resources. Seeing that the authorities were not enforcing the bye-laws and monitoring their activities, illegal sand winning increased in unimaginable proportions. With the presence of agencies like the EPA, NGO's and other MDA's in the districts it is expected that a solution should not be far fetched.

Regulation on the activities of sand winners in the Ga Districts was part of the duties of the district guards until in 1998 when the illegal sand winning started spreading throughout the rural west of the district. It then became imperative for the authorities to put a mechanism in place to curtail the deteriorating effect of the activity on the rural population. These developments lead to the assignment of a Geodetic Engineer to the Town and Country Planning Department of the Ga District Assembly to help reverse the situation. With the assistance of the Police Service offenders were brought to book and revenue was generated from loading fees collected from tipper truck drivers for every trip fetched from sand winning sites throughout the district.

The Geodetic Engineer initiated the formation of a union for organized sand winning. Sand winners were registered and put into four groups to win sand from four regulated sand winning pits in each day. This move was expected to provide an internal control system to check the indiscriminate sand winning among sand winners. This plan worked for sometime until illegal sand winning could no more

be controlled by the one-man task force. Lack of logistics, motivation, human resource and co-ordination amongst stakeholders were some of the factors responsible for the failure of the measures to solve the problem of illegal sand winning.

To enforce the institutional and operational provisions enshrined in the bye-laws of the GDA. The Geodetic Engineer was also charged with the responsibility of inspecting sites acquired by prospective sand winners who are seeking the approval of the GDA to obtain the required certification from the Minerals Commission for the commencement of sand winning. Guiding principles for proper inspection include proximity of site to settlement, proximity of site to water body, occupation of farm and record of previous sand winning activity.

If the land inspected is found to have satisfied all the conditions stated above, the approval to be granted is published at the District Assemblies for 21 days during which protestations and objections to the use of the land for sand winning are welcome. Opinion leaders of the community in which the activity would be undertaken are notified for their consent. Detailed information about the institutional and operational framework within which sand winners should obtain license to operate is provided below.

3.2 Methodology

3.2.1 Profile of The Study Area.

Location and size

The Ga District (before its division into east and west) was the second largest among the five districts of the Greater Accra Region of Ghana in terms of size and population. It lies within latitudes 5° 29'North and 5° 48'North and longitude 0° 8'West to 0° 30'West. The districts share common boundaries with the Tema Municipal area to the East, the Akwapim South District to the west and to the South by the Gulf of Guinea and Accra Metropolitan Area. It occupies a land area of approximately 859 sq km with over 400 settlements including Amasaman, the district capital.

Vegetation and Climate

The districts lie wholly in the coastal Savanna agro-ecological Zone. Rainfall Pattern is bi-modal with an annual mean varying between 79mm on the coast to about 1270mm in the extreme north. The annual average temperature ranges between 25.1°C in August and 28.4°C in February and March. February and April are the hottest months.

Relief and Drainage.

The relief is generally undulating at less than 76m (250ft) above sea level except for the areas around the Akwapim and Weiija hills. Only the alluvial areas surrounding the coastal lagoon could be strictly called flat. The district is drained by three major rivers namely: Densu, Nsaki and Onyasias rivers. The largest of the three, the Densu

drains down from the eastern region through the western portion of the district to Weija where it enters the sea. The Onyansia flows into the Accra metropolitan Area discharging into the Odaw River and the Korle lagoon.

Population

According to the 2000 National Population and Housing Census, the population of the Ga District is estimated at 550,468. Female population of 273,089 represents 49.83% of the total population while males make up the other 50.17% i.e. 274,922.

The Population is mainly concentrated along the peri-urban areas of the District particularly on the borders with the Accra Metropolitan Assembly. It has an Urban population of 404,221, constituting 73.8% with the remaining 143,790 (18.9%) residing in the rural areas of the district. The rural-urban split depicts the rapid expansion of the metropolis into the hitherto rural district. The usual resident population is pegged at 525,115.

Economic Activities

There are three main economic activities in the District. These are agriculture, Industry and commerce. The major agriculture activities are crop production, fisheries and livestock development. Among the wide range of vegetables produced in the districts are tomatoes, pepper, beans and okro. Sizeable pineapple farms are also located in the district particularly around Amasaman the district capital and Pokuase. Majority of the pineapples produced are for the export market.

The District is also noted for the production of food crops such as cassava, maize, yam, cocoyam and plantain. The production of cash crops such as palm nut, coconut, cashew nut, pawpaw and watermelon is also widespread. The coastline within the district is about 10 km and provides a wide range of fishes. The major fishing communities are Bortianor, Oshieyee and Kokrobite.

The climatic conditions of the Districts favor the production of livestock such as cattle, sheep and pigs. The poultry industry is also fast growing in the district mostly due to the existence of the nearby large urban market and easy access to young chicks, poultry feed, drugs and vaccines.

Tourism has of late become one of the important and viable sectors for investment in the Ga Districts. Its development is being approached on an integrated and sustainable basis through the Nation's Integrated Tourism Development Programme and other policies, plans and programmes of the Ministry of Tourism and related government agencies. The white sandy beaches of the Gulf of Guinea along Bortianor, Kokrobite and the Weija Reservoir provide a serene atmosphere for holidays and further development for tourism and recreation spots.

Construction has become one of the fast growing industries in the districts. Given its enormous deposits of natural building material of high quality sand and stone coupled with its large undeveloped tracts of land which is very close to the nation's

Capital the district has been a favourite area for estate development. Currently, a wide range of varieties, of housing units are being developed in Pokuase-ACP

Estates, Ashongman Parekuo Estates, Adenta, Pantang/Abokobi and Weija. These areas have large stretch of good quality stone deposits and sand and other raw construction materials which are extracted for the use of the building industry. (See map at the end of this chapter)

Spatial Distribution of Social Services

This section is concerned with the spatial distribution of social services such as educational infrastructure, health facilities, and water supply.

Educational infrastructure

Educational facilities are distributed fairly evenly throughout the districts. The siting of these institutions has basically been determined by enrolment rate in the catchments areas.

Health Facilities

Public health facilities are provided in both the rural and urban communities. In addition to a number of private health institutions in the peri-urban areas there are other public health infrastructure in Amasaman, Pantang, Weija, Madina, and Ngleshie Amanfro. Six other rural settlements namely Danfa, Obom, Abokobi, Onyansanaa, oduman and Kwame Anum are also provided with such facilities.

Water supply

Notwithstanding the fact that the Weija Water Reservoir and Treatment Plant is located in the district, water delivery has always been a basic problem with a limited number of communities having access to potable water. Pipe-borne water is

periodically supplied to areas such as New Achimota, Tantra Hill, Dome, Taifa, Madina and McCarthy Hills. The district capital, Amansaman, lacks potable water. Only about a third of the over 400 rural communities are provided with boreholes and hand-dug wells while as much as 35% of settlements depend on dams, dug-outs and streams for their water needs.

3.3 Data collection

Both primary and secondary data was used in this study, which has been descriptive and exploratory in nature.

3.3.1 Collection and Processing Of Primary Data

Semi- structured household questionnaire was used for the quantitative data collection. The questionnaire was pre-tested to correct any defect before the main data collection. In the main data collection, the administered questionnaires were edited to ensure that all responses have been correctly recorded before leaving the field each day for a week. Interview guides were used to gather qualitative data from sand winning contractors / sand winners, district officials which include the Special Assistant to the District Chief Executive, the Ga West District Geodetic Engineer, the Ga West District Assembly (GWDA) Planning Officer and Deputy Director of Nursing Services of the Ga District Health Management Team. Other district officials which were interviewed are the Head of Environmental Health Department, Head of Town and Country Planning, Officers from the EPA, Minerals Commission, and the Managing Director of Tipoff Company Limited (a private

revenue collection. and the chiefs and the elders of the three selected communities.

Direct observations of the sand winning activities were also made during the study.

Computer was used to analyze the data collected from the assessment. After coding, the data collected was entered into the computer using the Statistical Package for Social Sciences (SPSS) computer software. The data entered was then printed out and cross-checked with those on the questionnaire to correct any errors that might have occurred during the data entering.

3.3.2 Secondary data

The study also made use of literatures that related to the topic taken from libraries and the internet. Other secondary material used include; The Ga District Assembly Medium Term Plan Document and Technical materials like bye-laws from Ga District Assemblies (West and East) the environmental assessment regulation law, 1999 from the Environmental Protection Agency and the Minerals and Mines laws from, Minerals Commission, Mines Department and an annual report from the Ga District Health Service - Ga District Health Management Team (DHMT)

3.4 Scope of study

The study looked at sand winning activities in three selected communities and its impact particularly on socioeconomic life of the population. Reference was also made to the institutional and operational frameworks provided by the Minerals Commission, EPA, Mines Department and the District Assemblies to guide these activities and the extent to which the activities are being monitored and managed.

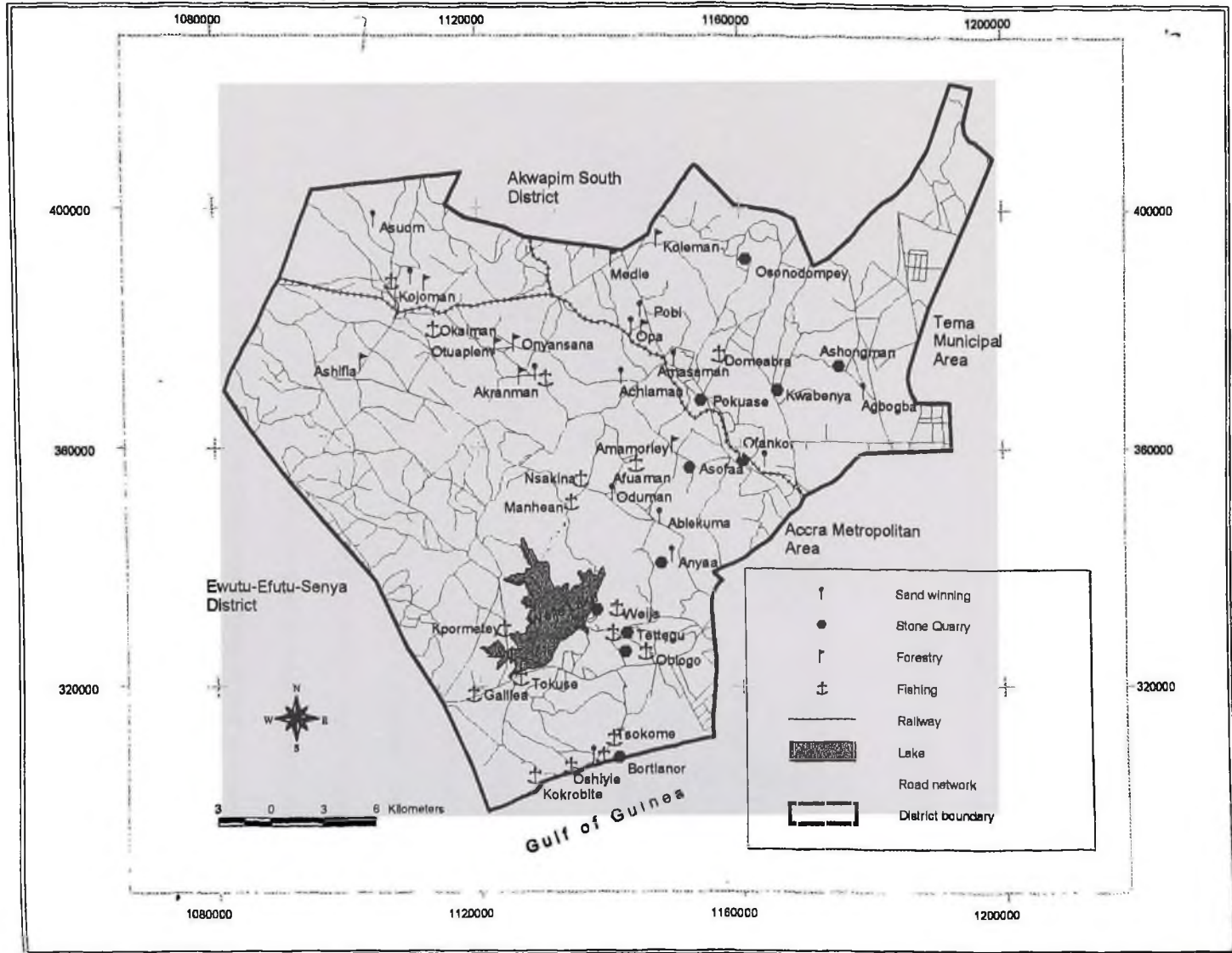
3.5 Sample design

The study employed a **systematic sampling method to select** and interview a **total of 120 households** with the assistance of Environmental Health Officers and the Special Assistant to the DCE in charge of mining activities from the GWDA in three (3) randomly selected localities where massive sand winning was or had been carried out. Interviews were also sought with **fifteen (15) manual sand winners** (three each) **randomly selected** from the three selected localities and four sand winning contractors were also selected from an estimated 15 to 20 from the districts. Lastly, four Truck-drivers, leaders (two each) of the two randomly selected Sand and Stone Contractors Unions out of the four in the districts were also granted in-depth interview.

3.6 Analysis of Data

Thorough analysis of the effects of sand winning on the communities was done using frequencies, pictures, cross tabulation and means.

Ga District: Area of Fishing, Sand winning, Stone Quarrying and Forestry activities



CHAPTER FOUR

ANALYSIS OF THE RESULTS

4.1 Socio-Demographic Characteristics

A total of 120 adult household respondents were interviewed. Forty (40) households each from Ardeyman, Akramaman and Adjen kotoku within the Amasaman sub-district of the Ga districts were interviewed. From the above distribution 60.8% (73) were females the rest were males. Out of the females, 2.5% were farmers, 25.4% traders, 14.4% were food vendors, 2.5% were artisans and 16.9% were involved in other economic activities. Unlike the males who had 9.3% engaged in sand winning, no female was found to engage in sand winning.

Table 4.1 below presents the occupational distribution of the respondents.

	Male (%)	Female (%)	Total (%)
Farming	12	2.5	15.3
Trading	4.2	25.4	29.7
Sand winning	9.3	0	9.3
Artisans	5.1	2.5	7.6
Food vendoring	0	14.4	14.4
Others	6.8	16.9	23.7
Total	38.3	61.7	100

Source: Author's Survey, 2005

Respondents' ages ranged from 19 to 85 years with an average age of 44.4. The 'Gas' were the predominant ethnic group found in the districts accounting for almost 90% of total respondents. Ewes and Akans were other ethnic groups accounting for about 5% and 3.3% of total respondents respectively.

With regards to marital status most of the respondents interviewed were married. Specifically, 64% were married, 5.8% were single and 4.2% were in loose union with their partners.

Close to 90% (89.2%) were found to be Christians. Other religious groups found in the selected communities were Moslems and Traditionalists which accounted for 15.8% and 9.2% respectively. Less than 6% responded as having no religion with 0.8% belonging to other religious groups.

The data further shows that close to a third of the total respondents (31.9%) had no formal education at all, 31.1 % had primary education, about 25% had Junior Secondary School/Middle School Leaving Certificate education, and 12.6% had Senior Secondary School education. None of the respondents interviewed had gone beyond the second cycle education.

For period of stay in the community, more than 90 % of the respondents interviewed had lived in the communities for 5 years or more with most of them being the indigenous people. The data also indicated that the mean household size was 5.37. More than three-quarters of the total respondents in the survey responded as heads of their households and 19.5% responding as spouses of the head of household. This indication may have a positive effect on responses covering the entire households they represent.

Generally, the study indicated that 32.2% were engaged in trading, 15.3% were engaged in farming, 14.4% were into food vending, 9.3% were into sand winning, 7.6% were artisans, 2.5% were teaching and 18.3% were unemployed.

4.2 Acquisition of Land For Sand Winning

Chiefs are the custodians of land and hold them in trust for their subjects. However, direct ownership is in the hands of the clan or family heads. In some cases however, individuals own land in the Ga districts. Most sand winners/contractors in the Ga Districts acquire land for sand winning from either the clan heads or the chiefs. The survey data shows that 78.1 % of respondents indicated that land could be acquired from the chiefs and the clan heads whilst 16.0% mentioned the family and 5.9% others.

More than 75% of the households interviewed believe there is always an agreement between the land owners and the contractors before sand winning begins.

With respect to parties involved in the agreements for the lease of land for the purpose of sand winning, more than 95% mentioned the contractors and the land owners. Only 1.7% of total respondents mentioned the District Assemblies involvement, with about 3.3% knowing nothing about the agreements for lease of land. On the issue of reclamation, 16.2% of the total respondent emphatically indicated the contractors' fulfilment of that obligation to the land owners, adherence to the bye-laws and other guiding operational principles. About two-thirds (67.5%) of total household respondents however indicated the failure of contractors to

reclaim the land after operating in an area. Payment of reclamation fee of ₵15 million per annum to district assemblies was cited as the main reason for non-reclamation by the contractors, tipper drivers, chiefs, elders and the household respondents interviewed.

There is a general notion among land owners that population spill-over and migration from the relatively densely-populated Accra metropolis to their farming communities is imminent. This notion may account for the indiscriminate lease of land for sand winning. However, the extent to which the landscape of those communities has been destroyed through indiscriminate sand winning makes it difficult for estate developers to develop the land. This situation according to some of the chiefs has made lands in those communities unattractive for estate development. Other reasons given by land owners for the lease of land for sand winning are: (i) the absence of job opportunities / employment in those communities, (ii) The sale of land therefore generates income for reinvestment into capital assets such as buildings as well as establishing businesses and (iii) some land owners claim it is more profitable to lease the farmlands for sand winning than to farm.

The study further revealed that about 94% of the landowners reside in the communities hence the likelihood of awareness about the use of their lands.

4.3 Socioeconomic Effects of Sand Winning

4.3.1 Communities' Knowledge about Sand Winning.

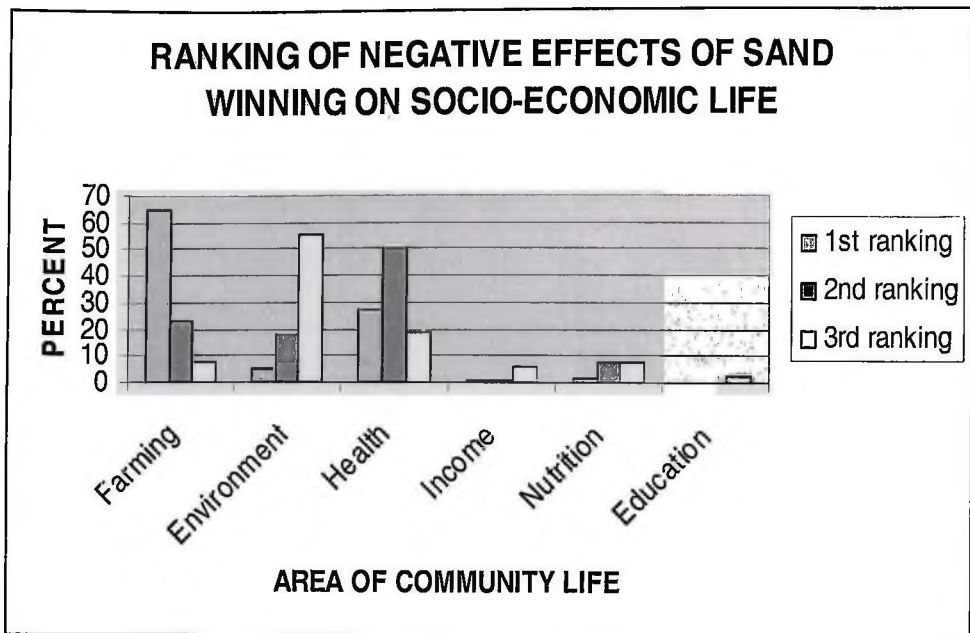
Household knowledge about sand winning activities is very important for any meaningful assessment of the effects of sand winning on the socio-economic life of the people. An overwhelming majority (99.2%) of respondents indicated that they have knowledge about sand winning activities in their communities. Cross-tabulation shows that about 90% of those who are aware of sand winning activities had also lived in the communities for 5 years or more.

More than two-thirds (66.4%) claim sand winning had gone on in their communities for 5 years or more.

4.3.2 Households' Opinion about Sand Winning

Close to 90% of the total number of people interviewed responded in the affirmative to the question of whether sand winning is a problem in their communities compared to 10% who thought otherwise.

The people interviewed were given the opportunity to rank first, second and third (with the first being the severest and third being severe) of negative effects of sand winning on the socio-economic life of the household. Diagram 4.1 below shows their three rankings



Farming ranked highest among the five areas indicated in the first ranking with 56.7% of total household respondents interviewed, followed by Health and Environment with 24.2% and 4.2% respectively. Health, however, ranked highest in the second ranking with 40.0% of total households interviewed followed by Farming and Environment with 18.3% and 14.2%. Furthermore, in the third ranking of the negative impact of sand winning, Environment ranked highest with 36.7% of total households interviewed, followed by Health and Nutrition/ Farming with 12.5% and 5%.

Varied explanations were given by 87.5% household respondents who claim to have fallen victim to the negative effects of sand winning. The explanations covered the five main areas of household life mentioned above. They are as follows:

I. Effect On Farming

Farming in the Ga Districts is done mostly on family lands by subsistence farmers. The aim of most land owners in the Ga districts is to make double gains from their land that is to first lease the land for sand winning before giving them out to estate developers. This is because there is a notion that their lands will soon be acquired for estate development due to population explosion and migration from the Accra Metropolis. Farming in the Ga districts is done mostly on family lands by subsistent farmers, which is not very lucrative. This has made most farmers to loose their farmlands to sand winning contractors.

Discussions with district officials, sand winning contractors and tipper truck drivers indicated that prior to the sand winning most of the lands were occupied by both migrant and indigenous farmers cultivating food crops like cassava, garden eggs, pepper, tomatoes etc. In this way, farmers' daily food requirements were met. Many also obtained some income from the sale of their produce from the farms. With profit maximization and cost minimization as their prime objective sand winning contractors acquire those lands from owners who find leasing the land far more profitable than having it used for farming purposes. Farms are therefore allocated to contractors for sand winning activities. Unfortunately, once the sand winners have finished their operation in an area they move to another without reclaiming the land as stipulated by the GDA bye-law. To the contractors, a deposit of ₵15 million as reclamation fee per annum justifies their failure to reclaim the land. The top soil of the hitherto farmlands are removed rendering them useless for farming purposes in future.

Most existing farmlands experience erosion with the slightest heavy downpour of rain because of removal of the adjoining lands and destruction of vegetation through sand winning activities.

PLATE 1. SAND WINNING SIGHT AT ADJEN KOTOKU



II. Effect on Health

Key informants interviewed indicated that indiscriminate sand winning has both direct and indirect effect on health in the Ga Districts. Directly, sand winning activities in the Ga Districts has been identified as one of the major problems facing community health through the following ways;

- As manholes are left unreclaimed after sand winning, they become fertile breeding grounds for mosquitoes when it rains, threatening life in the districts. Skin diseases and buruli ulcer are allegedly contracted by children who go to play in those stagnant waters collected in manholes

- there is also poor nutrition resulting from the felling of all edible-fruit bearing trees from lands taken over by sand winners
- there is so much inhalation of dust and fumes coming from the tipper trucks carrying the sand resulting in frequent lungs and chest diseases
- Abandoned sites are reclaimed with garbage creating a perfect ground for disease infestation.
- Water collected by manholes is used for domestic purposes by some households due to lack of potable water leading to bilharzias and typhoid fever infestation.
- Sand winners (hand loaders) never wear any protective outfit such as nose gear exposing them to upper respiratory diseases as they inhale the dust.
- Most sand winners complained of injuries and general body pains

PLATE 2. SAND WINNING SIGHT AT AKRAMAMAN



Indirectly, poor environmental conditions coupled with poor nutrition and low levels of household income averaging about ₵300, 000 per month from the study indicate that majority of rural people are vulnerable to disease. Preventive health measures are expensive and most households would want to avoid the cost. Conversely poor health conditions also affect their income levels, education, work and other socioeconomic activities. This cycle continues to impoverish the people of the Ga Districts.

Responses from households interviewed seem to confirm the effect of such health problems associated with sand winning. The survey data indicated that 28.1% of the respondents had household members falling ill yearly whilst 26.3% fell ill quarterly. Almost 24% fell ill monthly compared to 15% half-yearly.

With regards to common diseases which household members are frequently diagnosed of by hospitals / health centres, malaria stood out as the main disease among the five common diseases prevalent in the districts. It accounted for 68.6% of all diseases diagnosed of household members who visited the hospital or health centre. This was followed by buruli ulcer, skin diseases, acute respiratory infections, diarrhoea and other diseases which included worm and hypertension. This information corresponds with the trend of diseases in the top five diseases compiled from Monthly outpatients' morbidity tally sheet from health centres in the districts. This can be found in the table below.

TABLE 4.2: TOP FIVE DISEASES IN THE GA DISTRICTS, 2001 – 2004 (%)

2001 Disease	2001 cases	2002 Disease	2002 cases	2003 Disease	2003 cases	2004 Disease	2004 cases
Malaria	43.5	Malaria	49.9	Malaria	52.3	Malaria	44.1
Skin dis.	16.2	Skin dis.	21.5	Skin dis.	18.5	Skin dis.	21.3
ARI	8.6	ARI	10.1	ARI	10.4	ARI	10.6
Diarrhoea	6.1	Diarrhoea	5.7	Diarrhoea	4.8	Diarrhoea	5.2
Accidents	2.0	Accidents	1.9	Acute eye infect.	2.2	Acute eye infect.	3.3

Source: Ga District Health Monitoring Team, 2005

Comparatively, the incidence of malaria in the Ga districts is found to be higher than the national as reported by the Ghana Living Standard Survey (GLSS) 4 which stands at 9.8%. A breakdown of this percentage into rural and urban indicated that malaria incidence is higher in the urban area (11.8%) than in the rural area (9.1%)

More than half of the respondents (55.9%) indicated that the last illness of household members occurred three months from day of data collection while 26.9% and 9.7% claimed it was between 15 to 60 days and less than 7 days respectively. About 8% indicated last illness of household members to be between 7 to 14 days. Comparatively the Core Welfare Indicator Questionnaire (CWIQ) 1 (1998) and GLSS 4 (2000) recorded 26% and 18.6% of household respondents to have fallen ill in the preceding 2 weeks and 4 weeks of their respective surveys.

A relatively higher proportion of the respondents (61.7%) mentioned mosquitoes bred by the stagnant waters created by sand winning as the likely cause of diseases, while 28.3% of the respondents could not tell what the likely cause of diseases was. Other causes of diseases mentioned include, dirt /dust, contaminated water and bad weather conditions.

4.3.3 Households' Opinion About Impact Of Sand Winning On Community Health

On households' opinion about community health, 50.9% of the respondents stated that sand winning had negative impact on the community health. However, 14.2% did see a positive impact, as about 22.6% opined that sand winning has no impact at all on community health.

With an average of approximately 2 children to each household (37% of survey mean household size) poor environmental conditions are bound to affect the community adversely. This is because children and older adults are reported to be the most vulnerable in the face of poor healthy conditions (CWIQ I, 1998, GLSS 4, 2000)

A relatively high proportion of the household members (73.3%) miss school/work due to illnesses compared to 26.7% who did not.

By households' own impact assessment, 29.5% of total respondents of the survey indicated that the impact of sand winning over the last 5 years was bad on community health, while 20% indicated that the situation had worsened. Whereas

10.2% stated that the situation was good, 15.2% had not noticed any changes in community health. Also about 18.0% claim the situation was the same with only 1% assessing the impact as excellent.

More than 90% of the survey population had no household member(s) suffering from any chronic disease. Some of the chronic diseases mentioned are epilepsy, asthma and rheumatism.

On the average 30% of the respondents spend below ₵50,000 per month on their medical expense while 26.4% spend between ₵50,000 -₵99,999 per month. A further 19% spend between ₵100,000-₵199,999 per month on medical expenses with 14.3% spending between ₵200,000 – ₵499,999 per month. Also 11% spend ₵500,000 and above per month on medical expenses.

Considering what percentage of household income is spent on health, the study revealed that one out of ten respondents spent below 10 % of their income on medical expenses monthly compared to almost a quarter of total respondents who spent between 10 to 25 %. About a third of total respondents spent between 26 to 50 % of their income monthly for the same purpose compared to about a quarter who spent 51 to 75 %. Only 6 % spend three quarters or more of their income monthly on medical expenses.

III. Effect On Environment

The whole ecosystem is disturbed and destroyed by sand winning activities. Informants interviewed estimated the number of trips of sand fetched as being between 200 and 700 trips per day.

Most of the trees which use carbon dioxide produced by human beings and release oxygen necessary for the survival of mankind have been removed due to the indiscriminate operations of sand winners.

Sand winning activities which are now very close to most communities produce a lot of dust in the dry season. This phenomenon affects the quality of air.

Heavy duty trucks often destroy roads leading to sand winning pits in communities where they win sand. In some places, winning of sand is done close to the road. Pools of water collected by manholes created in the raining season force their way through parts of the roads eroding them and making them unmotorable.

Also, activities of the sand winners in the Ga Districts have destroyed the topography of the land making them unattractive for estate developers and property owners.

More so, indiscriminate sand winning activities contribute to global warming as trees and vegetation are destroyed.

PLATE 3. SAND WINNING SIGHT AT YAWOMAN**IV. Effect on Nutrition**

Indiscriminate sand winning activities may be the cause of the upsurge of malnutrition in recent times in the Ga Districts. Trees that bear fruits vital for the growth of the bodies have all been destroyed by sand winning activities. These fruits were hitherto seen almost everywhere and plucked freely by both children and adults to meet their food requirements. This situation has changed. With low or no regular incomes, households now cannot afford those fruits for their members.

V. Effect On Income Of Farmers And Other Subsidiary Activities.

- A rise in the activities of sand winners had also led to lose of income from farming for most farmers. This is because most farmlands have been taken over for sand winning purposes.
- Some community elders indicated that hunting of game which was a source of income has seriously been affected negatively due to the destruction of the habitat of animals by the sand winners.

- Additionally, some elders confessed that gathering and selling of firewood by the rural people has also seriously reduced, if not ceased.

Other areas of community life affected are human resource development and education. These have also negatively affected as pupils find sand winning more lucrative than learning some trade or going to school.

Measuring The Impact

To measure the impact of sand winning, weights were assigned to the rankings of the negative effects and their means calculated for aspects of household/community life which were reported to have been impacted upon severely. A weight of 1, 2, 3 and 4 were assigned to 1st, 2nd, 3rd and 4th for the most severely, more severely, severely and other in terms of impact of sand winning. Table 4.3 below compares the impact of sand winning on some of the socio-demographic characteristics using their means. The interpretation of the results is that the smaller the mean, the more severe the impact and vice versa.

Table 4.3 Estimated Marginal Means Of Impact Of Sand Winning

Type of impact	Mean	Std. Error
Farming	1.184	0.341
Environment	3.433	0.341
Health	2.281	0.341
Others	2.995	0.341

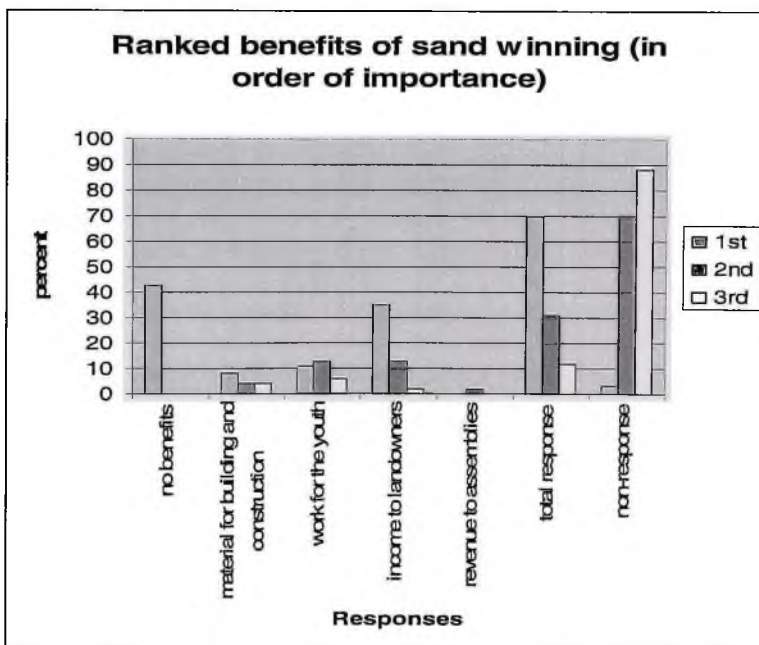
The means in table 4.3 above reveals that the impact of sand winning on farming is most severe with a mean of 1.184 followed by health, other and environment all

with means of 2.281, 2.995 and 3.433 respectively. This statistic indicates that there are differences in the severity of impact of sand winning on socioeconomic life of the community.

4.3.4 Benefits of Sand Winning To The Communities

Notwithstanding the negative effects of sand winning, the respondents interviewed were given the opportunity to mention and rank some benefits of sand winning to their communities. Diagram 4.2 below reveals benefits identified by the respondents.

Diagram 4.2



Source: Author's Survey, 2005

From diagram 4.2 above, 42.5% of total households interviewed claim sand winning does not offer any benefit at all to their communities. However 35.0% of

total households indicated that sand winning was a source of income for land owners who are basically clan heads and chiefs, through the collection of royalties. The diagram further revealed that sand winning as a source of raw material for building and construction was ranked second and as work for the youth ranked third. Another benefit mentioned is it being a source of revenue to the district assemblies through the collection of tolls, permit, processing and reclamation fees. Key informant through the in-depth interviews estimated population of sand winning contractors to be between 5 and 25 and other supporting workers mostly hand loaders to be between 150 and 500 workers.

Comparing the negative effects with the benefits from respondents view point, it could be inferred that the negative effects outweigh the benefits. More than 40% of household respondents claimed there are no benefits from sand winning to the communities. Additionally, close to 90% affirmed this by mentioning and ranking the negative effects of sand winning. Cross tabulations produced also show that more than 40% of total respondents, who claim sand winning had no benefit also indicated the severity of negative impact on farming, health and nutrition. In spite of this, 40% of total respondents who also ranked income to landowners first indicated negative impact of sand winning on farming, health and environment. About 9.5% of total respondents who ranked benefits of sand winning as material for building and construction acknowledged the negative impact of sand winning on farming, nutrition and income. Lastly, 9.5% of total respondents' who ranked the benefit of sand winning as employment for the youth also claim the negative impact was on farming and health.

Cross tabulations produced from the data indicated that overall, 72.1% of those who claim sand winning had no benefit at all indicated that Farming was severely affected by sand winning. More than a quarter of such respondents also indicated the severity on Health. Furthermore, about 2.3% of such respondents also indicated the severity in Nutrition.

In terms of revenue generation to the assemblies the findings show that sand and stone winning together was abysmally below the target by about 770 % in 2004 (GWDA Budget).Records from the Assemblies Registry show that this source of income fell below 10 % of total income in year 2003 and 2004.

4.3.5 Non-Adherence to Institutional And Operational Provisions

The study revealed that out of an estimated number of 20 contractors in sand winning excavating by mechanical means, only two representing 10% have renewed their permit and paid the reclamation of €15million to the GDAs to win sand legally. One contractor has renewed his permit but has not made payment for reclamation for the year 2005. In spite of this revelation five or more contractors were found to be doing active sand winning. Additionally not even one of the hand loading sand winners was found to have registered with the assemblies, though the sector employs between 150 to 500 people.

There seem to be ignorance, misunderstanding and flouting of the byelaws of the Assemblies. The study indicated that officials of the supervising departments (District Director of Town and Country Planning, Programme officer of EPA,

District Geodetic Engineer, Special Assistant to District Chief Executive, District Planning Officer) and the sand winners have different understanding of the content of the byelaws and procedures for winning sand. There were a lot of varying responses to the same question amongst the district officials, tipper drivers and the sand winning contractors. The following areas discussed below portray these varied responses.

1. Cost of GDAs tolls for tipper drivers.

Whilst the Special Assistant to the DCE stated ₵20,000 as a toll for tipper truck drivers irrespective of size of bucket of truck, the tipper drivers stated ₵25000, ₵15000 and ₵10000 per trip for the bucket of a twelve-wheeler, double axle and single axle truck respectively.

2. Deposit against reclamation.

Clause 10 of the byelaws, however, states that, **50%** of the deposit against reclamation **may** be refunded. Once sand winning contractors are not paid 50% of the deposit the first time they reclaim the land, they are reluctant to reclaim subsequent sites. Although the GDAs bye-law is silent on the multiple payment of reclamation fee within a year, in practice the deposit against reclamation is fixed now at fifteen million cedis for all operators irrespective of the size of the area. Operators with sites of twenty (20) acres deposit the same amount as an operator with only one (1) acre. The resultant reactions by the sand winning contractors are avoidance of operational procedures leading to indiscriminate sand winning.

This could be the cause of illegal and indiscriminate sand winning since land owners with small parcels of land may not be able to pay this amount and other monies before starting to win sand.

3. Responsibility for land reclamation after the payment of ₵15million.

Communities, land owners as well as tipper drivers claim once the reclamation fee has been deposited the assemblies must reclaim land. On the other hand the assemblies do not see it that way as inferred by clause 10 of the byelaws.

4. Penalty for defaulting tipper drivers.

Whilst the bye laws states a penalty of 10 penalty units (₵500,000) levied on truck drivers caught working outside the working hours, in practice defaulters are made to pay an amount of ₵200,000.

5. Operation hours.

Instead of the operation hours of 5:00am to 7:00pm stipulated by the bye laws, most sand winners and truck drivers start work as early as 2:00am and work till 10:00pm. The study also revealed that registered contractors get waybills from their colleagues whose licenses and permits are not expired to work when their permit / licenses expire. The permit / license fee for sand winning is ₵2 million per annum. Even though the GDAs bye law states that defaulters shall be convicted to a fine of 400 penalty units or five years imprisonment or both, there were, however, no records of such convictions because the bye-law has not been gazetted.

The bye-law is also not clear about what amounts to satisfactory reclamation.

By all indication, there is inadequate capacity to manage the situation in the districts. The Ga West district office of EPA and the Mines Department (National office) could only boast of two and three professionals respectively to formulate, plan and implement strategies to monitor sand winning and other mining activities.

The study reveals that illegal operations of sand winning exist in the Ga Districts.

Discussions with the Mines Department indicated that there are three types of illegal sand winning activities going in the districts. These are (1) Contractors operating without valid licences, (2) those operating at unapproved sites and (3) contractors with expired licenses using waybills of legal operators to operate.

4.4 Interventions

4.4.1 Opinion Of Household About Authorities Awareness Of The Problem

More than 80% of the respondents revealed that the DAs/ EPA/ Health authorities were aware of health hazards of sand winning activities compared to 4.2% who responded in the negative. As much as 11.7% of respondents do not know whether the authorities were aware or not.

Over 90% asserted that nothing has been done by the authorities to address the deteriorating situation in the districts. Respondents lamented that all the authorities are interested in is the collection of tolls from the tipper drivers and other levies.

Discussions with district officials however, indicated that there are three independent teams monitoring activities of sand winning at different times. The Mines Department National Environmental Task Force, the district assemblies' Task Force and the Statutory Planning Committee are all doing monitoring at different times.

4.4.2 Measures Taken By Authorities To Remedy The Situation

In-depth interviews were conducted with seven key district officials which included the special assistant to the former District Chief Executive (was in charge of sand winning), the District Director of the Town and Country Planning Department, a revenue officer in charge of mining at the Ga West District Registry, District Environmental Health Officer, the Ga West District Geodetic Engineer, the Ga West District Assembly (GWDA) Planning Officer and Deputy Director of Nursing Services of the Ga District Health Management Team.

In relation to the various interventions ever made to address the situation, the district officials mentioned the District Assemblies' bye laws on sand, stone and gravel winning. The Minerals and Mines Regulations and the Environmental Protection Agency (EPA) Regulations on mining were two other institutional and operational framework mentioned guiding the operations of sand winning contractors in the districts. They claim a statutory planning committee which involves the Town and Country Planning Department, EPA and other departments has been charged with the duty of monitoring developmental programs in the district which included sand winning. District officials informed the chiefs of communities in which sand winning were about to take place by posting the documents of prospective sand winning contractors at the assemblies for 21 days for any objections` to be raised. Approval was given (after satisfying other requirements of the assemblies) for commencement of work if no objection is raised by other stakeholders. District officials further confirmed that contractors deposited an amount of ₵15 million irrespective of land size against reclamation of land after

sand winning. An amount most officials saw as meagre and unsatisfactory. They hence suggested between ₵10 million and ₵15 million per acre for sand winning.

In response to why all these interventions have not been successful, district officials referred to the weakness of the ungazetted bye-laws. They were, however, quick to indicate that some contractors had ever reclaimed sand won land. This information was corroborated by the contractors, tipper truck drivers and about 16% of household respondents.

4.4.3 Suggested Solutions To The Problems Associated With Sand Winning By Households And Key Informants

Household respondents indicated that sand winning should be stopped in their communities if the reclamation cannot be monitored and/or enforced by the authorities who license the sand winners to operate. Others indicated that the chiefs and elders (land owners) of those communities should be advised on the sale of land for such purposes and the implications of their actions. Some households, however, claimed that the harm has already been caused and nothing could be done to remedy the situation (mostly in a community like Akramaman where sand had already been won and the consequences were being felt).

District officials mentioned arrests and huge fines for defaulters. Tipper truck drivers were seen as worst offenders of the bye laws. District officials also advise landowners and chiefs about the implications of indiscriminate sand winning. Periodic monitoring by a team of officials from the Mines Department, EPA, the Police Service and the district assemblies are also measures employed to address

the problems. Discussions with the Mines Department and EPA on capacity to implement corrective measures, however, revealed that only three (3) and two (2) of their staff members respectively are professionals. Both organisations are also poorly resourced.

CHAPTER FIVE**CONCLUSIONS AND RECOMMENDATIONS****5.1 Summary Findings**

The study reveals that, both legal and illegal operators of sand winning exist in the Ga Districts, with the later outnumbering the former by about ten folds. Sand winning degrades the environment and affect farming, health, nutrition, education, incomes and human resource development negatively. Control of operations by institutions such as the District Assemblies, the Mines Department, communities and other stakeholders in community development is very weak. Several causes account for the negative effects of sand winning in the districts. These include;

- Indiscriminate operations of sand winners
- the removal of the top soil
- unreclaimed sand won sites which serve as fertile breeding grounds for mosquitoes.
- Air pollution in the form of dust and fumes (carbon dioxide, sulphur dioxide etc.) emanating from the exhaust of the tipper trucks.
- High cost of registration with the Minerals Commission, the District Assemblies and EPA.
- Non-Adherence to institutional and operational provisions
- Uncoordinated activities of institutions responsible for environmental management in the districts

5.2 Conclusions

In conclusion, there is no doubt that sand winning is certainly a useful and necessary economic activity in the Ga Districts. The findings, however, reveal that the institutional and operational standards are not being enforced, monitored and followed completely by most stakeholders.

To the communities, the negative effects of sand winning outweigh the benefits. Furthermore, sand winning has negative impact on the socio-economic life of communities in the districts

The environment within which they occur need to be protected for the sustained benefits of all. The household members must get enough nutritious food to eat and build their system against diseases. Community health is paramount to the development of the districts and must be ensured. Better ways of generating income at the least cost should be assured.

5.3 Recommendations to mitigate problems associated with sand winning

The following recommendations are hereby made for the improvement of the situation and enhancement of sustainable development.

- 1. Expeditious Gazetting of the Bye-Laws for their effective enforcement.**

The institutional and operational framework for sand winning must be enforced and monitored to ensure compliance of the bye-laws for growth

and development of the Ga Districts in particular and Ghana as a whole. The mandate that public officials have to carry out to the fullest any provisions of the land depends on its acceptability and approval of the law. An ungazetted bye-law renders a public official powerless. This situation has created indiscipline on the part of sand winning contractors, tipper truck drivers and some district officials. For sanity to prevail in sand winning within the districts this main legal document must be gazetted.

2. Co-ordination

There seem to be lack of coordination amongst the departments concerned e.g., Mines Department, EPA and DAs as well as other stakeholders like chiefs and landowners. There are 3 different monitoring teams doing virtually the same thing. Once land owners lease the land to sand winners' adherence to procedures and bye-laws of DAs are no more monitored. The landowners mostly chiefs and elders who hold the land in trust for their subjects seem only to be interested in what they can personally gain from the venture and do not consider the effect of such contracts on the people they rule. There should be collaboration amongst all stakeholders in the management of the activities of sand winners.

3. Education

There is the need for the people living in those communities to be educated about the future implications of indiscriminate sand winning. With education, the people will be enlightened on why they need not lease their lands for sand winning.

The capacity of the youth, an asset for the development of the districts, must be developed through both formal and informal training.

4. There should be a participatory approach to monitoring the operations of the sand winners

- There should be the formation of community watchdog committee with the involvement of the community members, chiefs and elders in the monitoring of the activities of sand winning. This is because, community members live with the offenders and are always available to monitor even at night.
- There should be an encouragement for the formation of associations by different groups within the sand winning sector and the strengthening of such associations to control the operation of their members. These associations must be responsible for malfeasance in their sector. E.g. Stone and Sand Contractors Union of Ghana (refer to appendices for their constitutions and bye-laws)
- The monitoring team at the moment is made up of only one man who invites the police to go with him when he is prepared to go to the field. There should be a well formed monitoring team with representatives of all stakeholders to include the EPA, Community Health Officers, the District Assemblies, the Security and Justice Sub-Committee of the District Assembly and personnel from the Security Service.
- The management of the deposit should be participatory, involving the DAs and the contractors who pay the deposit.

- The District Assemblies should have a regular meeting with all stakeholders to evaluate effectiveness and efficiency of strategies adopted to enforce institutional and operational framework for sustainable development.

5. There should be an incentive to operate legally

The fine against illegal sand winners is abysmally low. It is ridiculous that, the fine against illegal operators was only fifty thousand cedis at the time the deposit against reclamation alone was five million cedis. This has provided an incentive to operate illegally rather than legally. The district assemblies should review the fine upwards to serve as a deterrent for illegal operations.

Deposits for reclamation should be based on acreage of the area acquired for sand winning.

The full amount of 15million cedis should be refunded to the sand winner after he or she has finished operations and had satisfied all requirements in the bye-laws.

6. Creation of employment opportunities

The authorities (chiefs, public officials etc.) and private businessmen in the districts should endeavour to attract investment into the area to create more employment opportunities and avenues for training for the youth.

7. Finally, one recommends a well-resourced office of the Mines Department be opened in the Ga Districts to specially address the problems associated with sand winning. Monitoring from the National Office of the Mines Department has not made much success.

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APPENDICES

Appendix 1: Concepts and Definitions

To clear all doubts about the meaning of certain words used in this study some concepts and key words are defined as follows:

Impact means effect

Sand winning is the deliberate removal of sand for construction purpose, which in most cases is considered as an economic activity.

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO)

Health Impact is assessment of the change in health risk reasonably attributable to a project, program or policy and undertaken for a specific purpose. (Birley, M. 1995)

Urban / rural: The rural/urban classification of localities is population based. This means that a settlement with a population of size 5,000 or more is regarded as urban and a settlement with less than 5,000 people is considered rural in conformity with earlier census definitions. (G S S, 2000)

Household: The household is defined as “a person or group of persons who live in the same house or compound, share the same house-keeping arrangements and are catered for as one unit.” The emphasis is on living in the same place and having common provision for food and necessities for living, irrespective of size and relationship. Specific examples in Ghana were given to help respondents separate persons in houses and compounds into households. The procedures required respondents to count all persons sharing the same living arrangements to include from the head of household

to day old borns as well as old persons in the household and report person's specific relationship to the head where respondent.(Ibid)

Head of household: The head of a household is defined as the person in the household recognized as such by other household members. This is generally the person responsible for the upkeep and maintenance of the household. In his/her absence, the person who takes charge of the house is considered "temporary head." All relationships are defined with reference to the head or temporary head. (ibid)

Regular member: Regular member is a member of the household who has lived in the household for not less than 6 months and is recognized by other members as a member. (ibid)

APPENDIX 2: DRAFT CONSTITUTION OF LICENSED SAND WINNERS ASSOCIATION OF GHANA

Preamble: Whereas Sand is one of the main contributors in the construction and building industry; and as in winning sand, the land gets degraded, therefore in compliance with PNDC Law 153, and for the protection of the environment and to ensure sanity in the industry the sand winning contractors have come together to form one big Association.

ARTICLE I NAME

- I. The name of the Association shall be known and called “THE LICENSED SAND WINNERS ASSOCIATION OF GHANA”
- II. The motto of the Association shall be UNITY, LOVE AND UNDERSTANDING.
- III. The Association shall be autonomous.

ARTICLE 2 REGISTERED OFFICES AND ADDRESS

The Registered office of the Association shall be at Amasaman

ARTICLE 3 AIMS AND OBJECTIVES

The aims and objectives of the Association shall be

- i) To foster unity, love and understanding among members
- ii) To promote the construction and building industry to support the national economy
- iii) To ensure discipline among members
- iv) To form a Task Force to monitor and check environment activities.
- v) To ensure that all sand winners reclaim the lands worked on.

ARTICLE 4 MEMBERSHIP

Membership shall be open to all registered and licensed sand winning contractors.

ARTICLE 5 THE EXECUTIVE

- i) Vice chairman
- ii) Secretary
- iii) Assistant secretary
- iv) Financial secretary
- v) Treasurer
- vi) Co-opted member/Porter



b) The Executive shall meet at least once every month and shall have the power to act for and on behalf of the Association in cases of emergency. The nature of such actions shall however be made known to members at a general meetings.

ARTICLE 6 TERM OF OFFICE

- i) Members of the Executive shall hold office for one (1) term of two (2) years
- ii) Members of the Executive shall hold office for not more than two (2) conservative terms at one particular position.

ARTICLE 7 ELECTION OF OFFICERS

- a) Members of the Executive shall be elected at a general meeting by secret ballot.
- b) Candidates for positions shall be nominated and seconded by at least one person.
- c) In the case of chairman, the first of the nominees shall be the chairman and the second his vice.
- d) The post of secretary, assistant secretary, financial secretary and treasurer shall also be by secret ballot.

ARTICLE 8 OFFICERS AND THEIR DUTIES**a) CHAIRMAN / VICE CHAIRMAN**

The chairman or in his absence his vice, shall preside over all Executive and general meetings.

- b) The chairman or his vice shall be literates and must be recognized members of the Association.
- c) The chairman or in his absence his vice, shall sign the minutes of each meeting at the time they are confirmed. The chairman or in his absence his vice, shall endeavor to secure the observance of the provisions of the constitution, rules and regulations of the Associations.
- d) The chairman shall only have casting vote.
- e) The executive shall be sworn in by an Electoral Officer.

ii) SECRETARY

He shall conduct the business of the association in accordance with the rules and regulations and carry out decisions of the Executive and shall record or cause to be recorded all minutes and shall have the right to speak and vote.

iii) ASSISTANT SECRETARY

He shall act in the absence of the secretary.

iv) FINANCIAL SECRETARY

- a) He shall keep the financial books of the association and shall record all monies properly.
- b) He shall prepare financial statement quarterly, which shall be read to members and shall be subject to internal auditing.
- c) He shall keep the cheque book.

v) TREASURER

- a) He shall collect all monies belonging to the Association and send to the bank and produce receipt.
- b) He shall hold imprest of one hundred thousand cedis (100,000.00) and shall receive fresh imprest only after accounting properly without question to the Executive, on the previous one.

ARTICLE 9 – GENERAL AND EMERGENCY MEETINGS

- i) There shall be general meeting once every calendar month

- ii) Emergency meetings shall be convened upon written request by the Executive .

c) QUORUM

Quorum for both the Executive and general meetings shall be by two thirds (2/3) majority.

ARTICLE 10 – BANKING

The Association shall open current/saving accounts with any commercial bank of its choice.

ARTICLE 11 – SIGNATORIES TO CHEQUE:

Any three of the following officers shall sign all cheques of behalf of the Association

- 1) Chairman 2) Vice chairman 3) Secretary 4) Treasurer

ARTICLE 12 – TASK FORCE

- i) A Task Force shall be formed by the association to monitor and control sand winning activities to conform with laid down rules and regulations of the industry.
- ii) It shall report all cases to the Executive for necessary Action.

ARTICLE 13 – RECLAMATION COMMITTEE

- a) The Association shall form a reclamation committee of five members.
- b) The committee shall collate data from the various work places of the Association on matters of Reclamation. Members shall pay a fee forwards reclamation to be determined by the Association

ARTICLE 14 – DISCIPLINARY/ARBITRATION COMMITTEE

- a) There shall be a disciplinary / arbitrary committee comprising five (5) members of the associations.
- b) It shall handle all internal disputes among members.
- c) It shall have the power to impose fines, and this must be communicated to the executive.
- d) Suspensions and expulsions shall be referred to the executive.
- e) Aggrieved member(s) shall have the right to appeal to the executive on decisions taken by the disciplinary/ arbitration committee.

ARTICLE 15 – FINANCE COMMITTEE

There shall be Finance Committee comprising five members of the Association.

FUNCTIONS:

- a) It shall see to it that 'Association funds are collected and accounted for properly.
- b) It shall take care of all jobs undertaken by the Association.
- c) It shall be responsible for internal auditing.

ARTICLE 16 – SALARIES AND ALLOWANCE

- a) Any elected officer who performs any part time or full time duties on behalf of the Association shall be paid an allowance to be recommended by the finance committee for approval of the Association

- b) Members elected to serve on any committee set-up by the Association shall be paid a sitting allowance to be determined by the Executive from time to time.
- c) An executive officer who attends and executive meeting or any other meeting on behalf of the association shall be paid sitting allowance to be determined from time to time by the association.

ARTICLE 17 – DUES/LEVIES

- a) A member working during the week or his/her scheduled period, shall pay an amount to be determined by the Association as levy to the Association.
- b) Effective January 1998, members shall pay monthly dues to be determined from time to time by the Association.

ARTICLE 18 – BENEFITS

- a) In the event of death of Father, Husband, “Wife or child, and amount to be determined by the Association shall be paid to the bereaved member
- b) However, if a member dies, the Association shall provide the following to the deceased family:
 - i) Cash to be determined by the Association
 - ii) Two cartons beer
 - iii) Three crates minerals
 - iv) Two bottle schnapps
- c) To provide members with any or all of the following benefits and others as the Executive may decide from time to time. That is, relief in sickness, accident, disablement, distress etc.

ARTICLE 19 – EXTERNAL AUDITORS

- a) External auditing shall be done once a year.
- b) The executive shall authorized to appoint the Auditors and discuss their fees for final approval by the Association

ARTICLE 20 COMMENCEMENT OF THE CONSTITUTION

The constitution shall be deemed to have come into effect the first day of January, 1998.

ARTICLE 21 – AMENDMENTS

- a) Articles of the constitution shall be amended by a decision of at least two thirds (2/3) of members present at a general meeting. Notice to this effect shall be served three (3) calendar months prior to the meeting day.
- b) Any member who has any objection, correction additions or deduction to be made to the said notice of amendment to the article in question, shall give notice in writing to the Executive within two (2) months from the date of the publication.

Appendix 3

Questionnaire on Socioeconomic Impact Of Sand Winning In Ga Districts

My name is I am a graduate student of ISSER, University of Ghana conducting a research into the health impact of sand winning in this community. I will humbly request that you participate in this study by giving me honest and clear answers to the questions below. To ensure confidentiality, names will not be attached to your responses. Findings will also be compiled in aggregate form. Thank you.

Background information

Q1.locality: 1 Ardeyman [] 2. Akramaman[] 3. Adjen Kotoku[]

Q2. Sex: 1. Male 2. Female

Q3. How old are you? (In completed years)

Q4. What is your marital status?

1. Never married
 2. Loose /informal union
 3. Married
 4. Divorced
 5. Separated
 6. Widowed

Q5. What is your main occupation?

Q6. What is your highest educational level attained?

1. None
 2. Primary
 3. Middle/JSS
 4. Secondary/SSS/vocational /tech.
 5. Higher
 6. Other (please specify)

Q7. To which ethnic group do you belong?

1. Akan
 2. Ga/Dangme
 3. Ewe
 4. Mole-Dagbani
 5. Hausa
 6. Other (please specify)

Q8. What is your religion?

1. Christianity 2 Moslem 3. Traditionalist. 4. No religion
 5. Other, please specify

Q9. How many are you in your household?

Q10. How many are between the ages of 5 to 14years?

Q11. How are you related to the head of the household? (Please tick)

- 1 = Head
- 2 = spouse
- 3 = Son or daughter
- 4 = Parent
- 5 = Brother or sister
- 6 = other relative []
- 7 = Not related []
- 8 = Other, specify

Q12. Are you occupying your own, family land or not?

1. Yes, own land 2. Yes, family land 3. No,

Q13 Are you an indigene or a migrant in this community?

1. An indigene 2. Migrant

Q14. For how long have you lived in this community?

- 1). Less than 5 years. [] (2). 5 years. [] (3) More than 5 years. []

Acquisition of land for sand winning

Q15. Are you aware of the sand winning activities going on around this community?

1. Yes 2. No 3. I don't know

Q16. For how long has the sand winning activities been going on in this community?

- (1). Less than 5 years. (2). 5 years. (3) More than 5 years.

Q17. From whom do the sand winners acquire the land?

1. Individuals 2. Family. 3. Chiefs 4. clan heads
5. Don't know 6. Other, specify.....

Q18. Do the landowners live in this community?

- 1 Yes 2 No 3 Don't know

Q19. Do you think there is always an agreement regarding how sand winners should win the sand in this community?

- 1 Yes 2 No 3 Don't know

Q20. If there is an agreement, with which groups do they have that agreement?

- 1).....
- 2).....

Q21. Do they do what the parties have agreed upon?
 1 Yes 2 No 3 Don't know

Socioeconomic effects of sand winning

Q22. Do you think sand winning is a problem for this community?
 1 Yes 2 No 3 Don't know

Q23. Please rank the following in order of severity of impact (negative) of sand winning on the lives of your household members? (Please rank it 1st, 2nd, 3rd...)

- | | |
|----------------------|------------------------|
| 1. Farming..... | 5. Education..... |
| 2. Environment | 6. Tourism ... |
| 3. Health | 7. Nutrition..... |
| 4. Income. | 8. Other, specify..... |

Q24. Please explain how your household is affected negatively by the 1st ranked area of your household?.....

Q25. Rank the following benefits of sand winning in order of importance?

- | | |
|---|--------------------------------|
| 1. Material for building & construction | 2. Work for youth |
| | 3. Income for landowners |
| 4. Revenue for the assembly..... | 5. No benefit..... |

Health Impact

Q26. How often do any of your household members fall ill?

1. Weekly 2. monthly 3. Quarterly. 4. Half yearly 5. Yearly

Q27. What common disease are household members frequently diagnosed of at the hospital or health centre?

1. Malaria 2. diarrhea 3 buruli ulcer 4. Acute Respiratory Infection.
 5. Skin disease 6. Other, please specify.....

Q28. What is the likely cause?

Q29. Has any member of this household being suffering from a chronic disease?

1. Yes 2. No

Q30. If yes, what disease is it?.....

Q31. When was the last illness of member(s)?

- (1) Within 7 days now (2) Between 7 to 14 days (3) between 15 and 60 days (4) more than 3 months

Q32. How much did it cost member(s) to be treated?.....

Q33. What percentage of household monthly income did you spend on the illness?.....

Q34. Did household member miss school/ work due to illness?

(1) Yes [] (2) No [] (3) don't know []

Q35. For how many days did household member miss school / work?

(1) Less than 3 days [] (2) 3 to 7 days [] (3) more than 7days []

Q36. What is the likely cause of this disease?.....

Q37. In your own estimation what is the impact of sand winning on community health for the past 5 years?

1. Positive 2. Negative. 3. No impact 4. Don't know

Q38. If negative, in what ways does sand winning affect the health of this community negatively?

Q39. In the last 5 years how would you rate the health of your community?

1. Excellent 2. Good 3. Same 4. Bad 5. Worse 6. Don't know

Q40. What percentage of household income is spent on health monthly out of total income?

Q41a. How much on the average do you spend on food monthly?.....

Q41b How much on the average do you spend on health monthly?.....

Q41c. How much on the average do you spend on others such as electricity, water, transportation, toiletries and other fees monthly?.....

Q41d. How much on the average do you save in a month?.....

Interventions

Q42. Are the authorities (DAs/EPA/Community Health etc) aware of the health hazard of the sand winning activities in this community (if any)?

1 Yes 2 No 3 Don't know

Q43. What are some of the measures taken to remedy these adverse effects of sand winning?.....

Q44. Why do such authorities take measures not successful?

Q45. How should the problems associated with sand winning be dealt with?

Thank you

Appendix4**Interview Guide on the Socioeconomic Impact of Sand Winning In Ga****Districts.****For District Officials**

1. Institution of respondent.....
2. Title of respondent.....
3. Please give me a brief history about sand winning in these districts, if there is any.
4. Does your Institution have a framework for guiding the activities of Sand winners?
 Yes [] No []
5. If yes briefly describe it.....
6. How do you ensure that contractors work within the framework?

- 5.b How do you ensure that Land owners lease land for sand winning within the frame work provided?.....
7. Do contractors make deposits against reclamation?
 Yes [] No []
8. If yes, how much?
9. Has there been cases of reclamation by a) Contractors b) District assembly

10. Do you think the deposit is sufficient? Yes []. No [].
11. If no, how much will you suggest?
12. How many people are in this business? (Estimate)

13. How many trips of sand on the average are carried each day?
.....
14. What are some of the problems your Institution encounters with the contractors/sand winners?
15. What measures have been put in place to address these problems?.....
...
16. What are the benefits your District derives from these activities?
.....
17. What are the effects of these activities on the socioeconomic life?.....
18. How is your Outfit/Institution addressing these problems
.....
19. Considering the benefits against the effects of these activities, would you say it is still worth allowing these activities? (Explain your answer)
.....

Appendix 5**The Socioeconomic Impact Of Sand Winning In Ga Districts****Interview Guide for Contractors /sand winners****PERSONAL INFORMATION**

Please give me a brief history about sand winning in the Ga Districts.

Name:

Age:

Sex:

Occupation:

1. Area of operation.....
2. Since when have you been operating as a sand-winning contractor?
3. Do you have a license/permit? Yes [] No [] (inspect & Probe)
4. If yes to question 3 above, describe how you acquired the license.
.....
5. If you have a license, did you pay moneys before you were given the license?
Yes [] No []
6. If yes to question 5, how much and to whom?(District
Assembly, Mineral commission, EPA, etc)
7. Did they explain to you the purpose of this payment?
Yes [] No []
8. Did you pay any other money apart from the license fee?
Yes [] No []
9. If Yes, how much and to whom?
10. How long does your license empower you to operate?
11. Where does your license empower you to operate?

12. Does your license empower you to operate where you want to operate?

Yes [] No [].

13. If no to question 11 above, were you given any reasons? State.....

14. Have you ever renewed your license before? Yes [] No []

15. If yes, how many times have you renewed your license?

.....

16. Area of destination of your sand..... (within or outside the district)

17. What happens to the ditches/trenches after winning the sand?

18. Have you ever been queried or arrested concerning your work?

Yes. [] No []

19. If yes to question 15 above, give reasons.

20. What problems do you have as a sand winning operator? ...

21. What improvements will you propose for sand winning in the Ga Districts?

22. Do you see any impact of sand winning on health? Yes. [] No []

23. In what way?

24. What do you think is the way forward?

25. How is your health affected by this work you are doing?

Thank you

Appendix 6
Guide For The Interview Of The Tipper Truck Drivers

Q1 How old are you?

Q2 For how long have being a tipper truck driver?

Q3 Do you belong to any association?

Q4 Do you have any institutional and legal framework guiding your operations?
.....

Q5. With which organization?

Q6 Explain the framework under which you operate?

Q7 Do you have anything doing with sand winning?

Q8 If yes what relationship?

Q9 When do you start work every day?

Q10. Why do you start work at that time?

Q11 When do you close everyday?

Q12. On the average how many trips do you make each day?

Q13. How many contractors do you have in the business?

Q14. How many workers do you estimate to be in the business in
total?

Q15. What are some of the problems you face in your work;

- With the district assemblies?
- With the contractors / sand winners?
- With other authorities?

Q16 what are the socioeconomic effects of sand winning on

- the sand winners
- contractors
- drivers
- Communities?

Q17. What do you suggest should be done to mitigate the negative impact of sand winning in the Ga districts?

Appendix 7:**Interview Guide for Chiefs, Landowners and Family Heads**

1. What is the name of this community?
2. What is the main occupation of this community?
.....
3. Who owns land in this community?(Individuals, family, chiefs, clan heads etc)
4. Who has the right to lease land for any activity in the community?
.....
5. What role do chiefs and family heads play in relation to landownership in the community?.....
6. Under what condition is land released for sand/stone/gravel extraction?.....
7. What is the relationship between the Chiefs/landowners and the District Assembly in the release of land for sand/stone/gravel extraction?
8. Where are the sand/stone/gravel usually taken to?
9. What are the benefits of sand winning to the community?
10. What are some of the problems if any, of sand winning activities?
11. How do you think these activities/problems can be controlled?
.....

**SAND & STONE CONTRACTORS
ASSOCIATION OF GHANA**

CONSTITUTION

&

BYE-LAWS

SAND & STONE CONTRACTORS ASSOCIATION OF GHANA
CONSTITUTION & BYE-LAWS

PREAMBLE:

At this era of the PNDC Government Policy on Socio - Economic survival of the country; it is very important to increase production in all fields of the country's Economic activities/ resources.

Towards this National Reconstruction and Development process and awareness; there is need to establish institutions to serve as a vehicle for educating and spreading the ideas, principles and objectives of the process to the awareness of the citizens and educate them of their responsibilities and rights as a committed citizens; more also to encourage them to defend their democratic rights through responsible and positive means.

Accordingly there is need to mobilise both Natural and Material Resources of the Nation against exploitation of all - kinds for rapid and effective development of the country and its people.

During the past; little attention has been given to gravel, stone and sand industry/extractors; who were allowed to operate at the mercy of the Land.

It was not known who/how to control this rich resources; and this gave the operators the chance and privilege to exploit this resources to the detriment of the State and the District Councils and Assemblies.

By the promulgation of the Government's Law on the Mineral resources; sprang out SAND & STONE CONTRACTORS ASSOCIATION OF GHANA with the fundamental aim of ensuring that the Government's directives as stipulated in the Law are followed while at the same time ensuring that sanity and discipline are brought into the Sand Winning Industry - throughout the country.

Members of the Association includes:-

- (i) Sand Winners
- (ii) Stone Crackers
- (iii) Gravel Excavators
- (iv) Sand, Stone, Gravel Suppliers/Contractors
- (v) Tipper Truck Drivers

SAND & STONE CONTRACTORS ASSOCIATION OF GHANA
CONSTITUTION & BYE-LAWS

ARTICLE 1: NAME

The name of the Association shall be known as the SAND and STONE CONTRACTORS ASSOCIATION OF GHANA.

ARTICLE 2: MEMBERSHIP

Membership is opened to all citizens of Ghana who has agreed and have come together and are prepared to uphold and defend the basic objectives of the Association and are desirous to be

(a) Sand. Winners, (b) Stone extractors (c) Gravel excavators, (d) Sand, Stone and gravel suppliers and (e) Tipper Truck Drivers

(ii) Accordingly all deserving members shall apply in written application with One Surety; in addition to (¢5,000) Five Thousand Cedis or the prevailing amount as may be decided by the Executives as Membership Registration Fee.

(iii) Registered members shall be given Members Identifiable Cards and PASS BOOK.

ARTICLE 3: PROBATION

After acceptance of such application the member shall be under a probation of three to six (3-6) months of which he shall be required to be of good behaviour

(ii) In a situation where a member is not able to complete his/her probational period and is reported and found guilty of gross misconduct, indiscipline he/she shall be expelled from the Association and shall forfeit all his/her benefits including the Membership registration Fee.

(iii) Accordingly deserving members shall buy this constitution for their study before applying for their membership.

BINDING EFFECT OF THE CONSTITUTION

This Constitution as approved by the Association shall be required and come into use as an agreement under seal between the Association Executives and members, whereby they all agree to observe and perform the provisions and articles in the constitution as altered from time to time accordingly and shall be binding upon and be observed by all members.

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To ensure that the activities of such operators are being regulated and controlled; there is need to organise and bring together members who are engaged in such operations; to identify their various fields of work; mode and conduct of operation either, mechanical or manual, and ensure that sand, stone and gravel are won in a more scientific manner without affecting the environment.

The Association shall liaise with the Local Council, the District Councils and Assemblies in demarcating and controlling such areas of operations and ensure that Taxes/Levies and tolls from such process are paid to the appropriate quarters and on scheduled.

The Association in consultation with the Waste Management Department, and similar agencies shall undertake re-filling of pits, etc, at areas where sand, stone and gravels are won.

More also the Association shall group members so as to flush out undesirable elements within the Industry and ensure that the payment of Taxes/Levies and tolls at all levels and categories are honoured by its members.

- 3 -

3. Financial Secretary
Vice Financial Secretary
4. Treasurer
5. Organiser
6. Women's Leader
Asst. Women's Leader
7. Porter
Asst. Porter

- (ii) Any additional number in the Executives shall be determined by the Chairman/President.
- (iii) The Chairman/President reserves the right to Form Executive Committee to assist him in effective decision taking/making
- (iv) They shall include:
 - (a) The Chairman/President (b) Secretary (c) Financial Secretary
 - (d) Women's Leader or her representative and any member as may deem proper and necessary by the Chairman/President.
 - (e) Organiser.

ARTICLE 7: PATRONS

Nomination of Patron shall be made by both Executives and members at General Meeting to find people (both inside and outside) capable to be Back Bone of the Association.

ARTICLE 8: ASSOCIATION BOARD OF TRUSTEES

The Association shall elect members who shall hold its Assets and Properties in Trustworthy.

- (i) There shall be (5) Trustees which shall include:
 - (a) Financial Secretary
 - (b) Treasurer
 - (c) Secretary and Organiser
 - (d) Women's leader, and shall be responsible to the Executive Board/Committee.
- (ii) Any vacancies in the number of the Trustees shall be filled up by the Executives.

ARTICLE 9: ADMINISTRATIVE SECRETARY/OFFICER

The administration of the Association shall be entrusted to a qualified Administrative Secretary/Officer; who shall be employed within or outside the Association, for effective administrative procedures and regulations.

The Association aims among other things to:

- (i) Liaise with the various District Councils and Assemblies in consultation with the Lands Commission, to demarcate and control various areas of Sand, Stone and Gravel extracting areas.
- (ii) Environmental Protection
- (iii) To educate members to avoid indiscriminate Gravel excavation, Sand Winning and Stone Cracking; which leads to serious environmental problems.
- (iv) To organise, Monitor and control the activities and operation of such excavators; so that the problem of the disposal of explosives in cracking or extracting stones in the residential areas be avoided.
- (v) To play a prominent role in arresting and preventing both past and present environmental degradation hazards caused by indiscriminate sand, gravel and stone extractors.
- (vi) To ensure and warn members against any attempt by members to temper with crops and trees in areas of excavation
- (vii) To engage members in tree planting and afforestation exercise at areas of excavations.
- (viii) To avert over-exploitation and consequent environmental degradation to the detriment of the State, that pollute the surroundings and endanger the Life/Health of the residents.
- (ix) To ensure that members whose activities disregard the aims and objectives of the Association.
- (x) To consolidate, sustain and advance, effective Revenue Generating process to the:
 - (a) State, (b) District Councils and Assemblies, (c) The Chiefs/ Land Owners in collective form.
- (xi) To encourage and ensure that all members Honour their TAX and other obligation to the State.

ARTICLE 6: EXECUTIVE BOARD

The Executives of the Association shall comprise of:

1. Chairman/President
Vice Chairman/Vice President
2. Secretary

- 3 -

3. Financial Secretary
Vice Financial Secretary
4. Treasurer
5. Organiser
6. Women's Leader
Asst. Women's Leader
7. Porter
Asst. Porter

- (ii) Any additional number in the Executives shall be determined by the Chairman/President.
- (iii) The Chairman/President reserves the right to Form Executive Committee to assist him in effective decision taking/making
- (iv) They shall include:
 - (a) The Chairman/President (b) Secretary (c) Financial Secretary
 - (d) Women's Leader or her representative and any member as may deem proper and necessary by the Chairman/President.
 - (e) Organiser.

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- 4 -

ARTICLE 10: SUB - COMMITTEES

The Association shall form Sub-Committees to assist the Executives.

These Sub-Committees shall include:

- (1) Welfare Committee
- (2) Education Committee
- (3) Finance & Audit Committee
- (4) Disciplinary Committee
- (5) Planning Committee and
- (6) Projects Resources Management

Guidelines for the operation of these Committees shall be empowered by the Executives who shall determine the Leadership and duration of such Committees.

ARTICLE 11: TASK FORCE

Special Task shall be assigned to some selected members to perform, when the need arises.

This Task Force shall be appointed by the Executives which shall determine its duration and operation.

ARTICLE 12: DURATION OR TERMS OF OFFICE

- (i) Executives, patrons, and officers shall hold office for a term of (5) five calendar years, after which fresh elections shall be made.
- (ii) Out going Executives, Patrons and officers; shall be eligible for re-election.
- (iii) In the event of death, expulsion, resignation or vacation of post of a member, for a period of not less than six calendar weeks; a special meeting of the Executives,

Patrons and officers shall be called to elect a member to fill the vacant post.

ARTICLE 13: ELECTION

All election shall be by secret ballot.

- (i) Accordingly Electoral College/Committee shall be formed to formulate formal framework and guidelines on conduct of the election.

They shall disseminate and collate ideas from members for fair and effective election, so that all concern parties are involved in the electioneering process.

ARTICLE 14: GENERAL MEETING

- Meetings shall be called by the authority of the SECRETARY.
- (ii) All meetings shall be chaired or presided over by the Chairman/President.
 - (iii) In the absence of the Vice Chairman/President and the Organiser, the Secretary shall be appointed to control the meeting, or any other member that shall be eligible to handle the affairs or the proceeding.
 - (iv) He shall be a member who has attended three previous consecutive meetings.
 - (vi) Meetings shall be held at National/Regional, and Branch offices/Secretariat; or at any other place that may in future be decided by the Executives.
 - (vii) Executive/General meetings shall be held monthly, or as the need arises; in case of emergency.
 - (viii) During meeting period, it shall be required that all activities ceased, to enable every member to attend meetings.

ARTICLE 15: ABSENT FROM MEETING

- (i) Any Executive#/Officers# and members who absent him/herself for three (3) consecutive times without permission shall be expelled from the Executives and disciplined.
- (ii) Any member who shall fail to attend meeting without prior excusses or reasonable explanation shall pay a fine of ₵1,000 before commencement of work.

The Executives reserved all powers for further punitive measures for continous absents and behaviour.

ARTICLE 16: QUORUM

Quorum for Executive meetings to take decision shall be two-thirds ($\frac{2}{3}$) majority of registered members which shall include the 50% of the Board of Trustees, with Womens' leader or her representatives, or as may be decided by the Executive Committee.

ARTICLE 17: END OF YEAR MEETING

End of year General Meeting shall be held in JANUARY, or in any other months decided by the Executives.

- (i) Annual Reports shall be read at this MEETING by the EXECUTIVE SECRETARY.
- (iii) Executives, Patrons, and officers shall be elected at

- (iv) Deserving, Executives, Patrons and members shall be given prizes and Awards.

ARTICLE 18: FINANCE

The funds of the Association shall be under the control of the Financial Secretary/Accountant.

- (i) All monies collected at every function shall be supervised by the Financial Secretaries who shall make sure that all monies collected or received have been recorded in the Association Accounts Book before handing the SAME to the Treasurers who shall issue official receipt to that effect.
- (iii) All monies received on behalf of the Association shall be Banked after (48 hrs) forty-eight hours of receiving.
- (vi) It shall be the duty of the Association to transact its financial business through the Banks.
- (vii) It shall be the duty of the Financial Secretaries and the Treasurer to render full statements of Accounts quarterly or at any time decided by the Executives.

ARTICLE 19: BANKING

The Banking Accounts of the Association shall be operated as stated below:

- (i) Bank for Housing : Construction
Adabraka - Branch
- (ii) National Investment Bank
Kwame Nkrumah Avenue
Accra - Central
- (iii) Ghana Commercial Bank
Achimota Branch
Mile 7, Accra
and
- (v) Any other Bank at the reach of the Association
Signatories shall include
- (a) Chairman/President
(b) Women's Leader or her representative
(c) Financial Secretary

In the absence of the Chairman/President the Vice Chairman/President shall sign a cheque on his behalf. Any of the (3) three shall be eligible to sign a cheque but must include the Chairman/President and the Financial Secretary.

ARTICLE 20: SOURCE OF INCOME

The Association shall generate its source of Revenue from

- (1) Membership Registration Fee
- (2) Monthly " Dues
- (3) Daily Station Dues
- (4) Appeal for Funds
- (5) Silver Collection at Meetings.
- (6) Personal/Voluntarily assistance and donations; and any other areas that the Executives shall deem fit and genuine

ARTICLE 21: INVESTMENT

The Association shall endorsed any Economic activities calculated to yield genuine income to support members contribution for the growth and advancement of the Association.

- (ii) Such investments should also be made to create employment avenues for the unemployed members
- (iii) Investment areas most endorsed by the Association shall include:
 - (a) Transport and Haulage
 - (b) Agriculture and
 - (c) Any other area the Executives deem fit.

ARTICLE 22: AUDITING

The Association shall appoint Recognised External Auditors who shall audit the Association's Accounts periodically, to foresee that the Association operates on proper Financial policies and regulations

- (ii) Alongside the Internal Audit Team or Committee shall also cross examine all Financial Transactions of the Association for the necessary precautionive measures and recommend for appropriate measures and procedures.

ARTICLE 23: DUES DEFAULTERS

Any Executive, officer or member who collects or receives any money without the consent of the Executives renders him/herself liable to discipline.

- (ii) Any Executive/officer and member found collecting or receiving any amount without accounting for it shall be disciplined.
- (iii) Members who refuse to pay their dues, taxes, and any other toll for no reason(s) shall be disciplined and fined accordingly.
- (iv) Accordingly dues, defaulters shall not be considered for:

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ARTICLE 24: OWNERSHIP RIGHT

The Association shall own Assets and Properties.

- (ii) Accordingly all Assets and properties shall be registered in the Association's name and as such; Deed Titles and Ownership Rights shall be Registered and conferred on the Association.
- (iii) It shall be the duty of the Trustee to execute such Deeds Titles and Ownership Right and wholly invested on the Association.

ARTICLE 25: EDUCATION

From Time to Time certain experts from the Environmental Protection Council (E.P.C.), The Internal Revenue Services (I.R.S.), The Security Agencies and members from the Association shall be invited to educate members on Governments Policies to create Socio-Economic and environmental awareness for the development and growth of the Association.

ARTICLE 26: MISBEHAVIOUR

- (i) Any member(s) who shall be found quarreling or fighting among themselves, shall be disciplined.
- (ii) Any member(s) who misbehave; either by way of insubordination, impertiness, resulting in provocation and quarreling shall be fined.
- (iii) In the event of any member found guilty of serious misconduct such as dishonesty, insubordination drunkenness or serious dereliction of duty shall be disciplined.

ARTICLE 27: FABRICATION

Any member reported and found guilty to have fabricated or indulged in political/or any other matter against:

- (a) THE STATE (b) The Association, and any member, or group of people shall be severely dealt with.

ARTICLE 28: LITIGATION

All members are forbidden to go into litigation against each other in any court of Justices; unless the matter had first be treated by the Association and found that the matter is of such nature, that the Association could not settle and have therefore been referred to the court of Justice.

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ARTICLE 29: GRIEVANCES PROCEDURES

In the event of any Grievances, the member shall at first stop take up the matter up with the Disciplinary/prescribed Committee, at the Local Level.

- (ii) Accordingly Disciplinary/Investigation/Inquiry Committees shall be formed under the supervision of the Executives, who shall submit its findings, reports and recommendations to the Executives for the necessary action.

ARTICLE 30: BENIFITS

The Association shall establish or form CREDIT UNION to cater for the FINANCIAL NEED of its members, who are desirous of expanding their business; or any other assistance.

- (ii) LOAN: The Association shall grant Loan to its members; which is refundable at a specific period of time which may be decided by the Executives/The Finance & Audit Committee.
 - (a) During the payment period, the member shall not be qualified for another loan.
- (iii) SICKNESS: Whenever a member falls sick or hospitalised he/she shall be visited at the Hospital or at Home.
 - (a) He/She shall be presented with an items and money as may be decided by the Welfare Committee.
- (iv) DEATH
 - (a) Funeral Grant: In the event of the death of a member the Association shall provide (i) Coffin, (ii) Transport within Ghana to the deceased Home Town.
 - (iii) 2 bottles of schnapps, a create each of Beer and soft Drink; or in lieu of cash in addition to \$30,000 physical cash to be presented to the bereaved family
 - (iv) On the death of member's wife/ /Husband, father, mother, son and daughter the Association shall present (\$50,000) Fifty thousand Cedis; 1 bottle schnapps; (1) one create each of Beer and soft Drink and a delegation to the bereaved member.
 - (v) In ~~avoidance~~ avoidance of doubt, the Association shall pay in lieu the cost of items mentioned above when the need arises to the bereaved family/member.

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ARTICLE 31: OUT OF STATION JOBS

In the event, where a member is required to work outside his/her normal station/Brace and is required to spend more than (1) one day; the member shall report to the Association, upon which he shall be given official pass according to the days which he shall be away.

- (ii) This shall be based on the prevailing daily dues rates, which he shall pay in full before departure.
- (iii) Members who shall contravene or abuse this Law shall be liable to a Fine (₵20,000) twenty-thousand cedis, or two weeks suspension or both.

ARTICLE 32: STATION REGULATION VOL. I

Every Driver shall pay his station Dues and Income Tax, and that of his customers before moving from the station.

- (ii) It shall be the duty of every driver to supervise or see to it that every customer he take pays his/her station dues, before allowing him/her to join the Truck.
- (iii) Drivers/ Members who indulged in such acts shall be fined ₵1,000 with two weeks suspension; during which he shall not be allowed to operate within and outside the Associations, Station and umbrella.
- (iv) During the suspension period he shall not undertake any contract with the Association/member.
- (vi) Any Association member who contracts with such Driver or member shall be fine ₵20,000 with 2 weeks suspension.
- (vii) During the period the offender shall not be eligible for any benefits due to him from the Association.

ARTICLE 33: CHEATING

Any member found doing act with the intend to cheat and cheating the Association/Member or customer shall be disciplined and fined accordingly to Article 32 clause Sections 3,4,5 and 6.

ARTICLE 34: POLICY DIRECTIVES AND ADMINISTRATIVE PROCEDURES

From time to time the Executive Board/Committee shall formulate formal Framework and Guidelines in addition to the ^{prevailing} preventing policies and procedures relating the conduct of operation of the Association and its members.

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Accordingly, the Association shall rely on its units, Branch, Districts Executives and other Committee as a vehicle for spreading and explaining the ideals, principles objectives, policies and procedures to its members for strict adherence and implementation.

ARTICLE 35: JOB DIVERSION

In the event when a member is required to perform or execute the job of another member, in his/hers absence; the member shall report to the Executives for the necessary directives and procedures.

- (ii) The member shall report the cut come immediately after completion of the job; and returning to the station the Branch to the Executives.
- (iii) Any member reported and found guilty of lobbying for job; with the intention to deprive his/her neighbour of his/her job shall be severely dealt with.
- (iv) He/She shall be made to refund or forfeit the proceeds from the job to the accredited member/contractor.
- (v) Where there are other implications of character assassination the member shall be liable to a fine of (₵10,000) Ten Thousand Cedis in addition to clause (iv) four of this subject with 50% of the fines paid to the Association coffers.

Accordingly the Executives shall examine the relationship, his terms with his/her customers before passing judgement.

ARTICLE 36: CHAIN OF COMMAND

The Unit Executives shall work up to their Zonal Executives. THE Zonal Executives shall work upon to their District Executives; who shall work through their respective Regional Executives to the office of the National Secretariat. Accordingly such structures shall be created in the Association.

ARTICLE 37: REMOVAL OF MISCONDUCT

Any Executive/Patron, Officer or member who misconducts him/herself shall be given a fair hearing, before a Committee of inquiry prescribed by the Association/Executives.

- (ii) The Committee shall report in writing its findings and recommendations to the Executives for appropriate action.
- (iii) If after discussing the issue the majority of the members approve a no-confidence resolution, then the Executives shall inform their immediate higher Secretariat for an Appeal.

(iv) When such Higher Secretariat, in consultation with the Regional and National Executives has determined, after investigation and consultation with the members at a given level that there is justifiable cause to declare an Executive, Patron, Officer or member unfit to hold office, such member shall be removed from office.

Accordingly Bye-election shall be held to elect a member to fill the vacant post.

ARTICLE 38: AMENDMENTS

This constitution shall not be avoided nullified, nor amended, except at a General Meeting.

(11) In this case (1) one calendar month notice shall be given a motion for such Amendments.

Accordingly Constitutional Review Committee shall be formed to that effect.

Sand & Stone Contractors Association of Ghana Constitution and Bye-Laws as agreement under seal as sealed to the Association and its members.

Dated: 1ST JANUARY, 1989:

1ST _____ EDITION: 1989

Branch	ACHimota	
President:	Nana Ama-kwaatia	Date: <i>Nana Ama-kwaatia</i>
Secretary:	Ransford K. Ayisi	Date: <i>17-7-91</i>
Matron's Rep:	Felicia Bekoe	Date: <i>17-7-91</i>
Financial Secretary:	Samuel Ofori Asamoah	Date: <i>17-7-91</i>
Member :	Amoako - Nyarko	Date: <i>17-7-91</i>
Patron:	OP. Kwaku Donkor	Date: <i>Kwaku Donkor</i>