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**THE EFFECTS OF SLUM ESTABLISHMENT ON THE HEALTH OF THE
LOCAL COMMUNITY: A CASE STUDY OF
JUBA, SOUTHERN SUDAN**

**BY
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**A DISSERTATION SUBMITTED TO THE SCHOOL OF ENGINEERING AND
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DECLARATION

I, **DEBORAH ANYIER**, hereby declare that the work contained in this dissertation entitled **“the effects of the slum establishment on the health of the local community”**: A case study of **Juba, Southern Sudan**” with the exception of the acknowledged references, ideas and concerns is my original work and it has never been submitted for fulfillment of the requirement of a Degree award or other education qualification in any Institution of learning.

APPROVAL

I declare that this is my original work and has not been presented in any University for Academic credit and where other works have been incorporated, sources have been acknowledged.

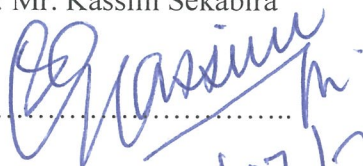
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DEDICATION

This project is written in honor of our beloved ‘ **HERO**’ the late Dr .John Garang De Mabior Comrades who fought for freedom for all the Southern Sudanese in the liberation struggles and also not forgetting all my country men and women who lost their lives during the liberation struggles, may God rest their souls in eternal peace.

It is also dedicated to my beloved parents, Dr. Manyang Agoth, Nyaluak Manyok, Mary Nyibol Riek, Aluel Amos, Ayen Anei and Yar Ajok. Special dedication to my beloved late grandmother Sarah Ajah Leek who has not seen the fruits of my education, may God shower you with abundant blessings, and may he rest your soul in eternal peace.

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LIST OF ACRONYMS

CPA	Comprehensive Peace Agreement
CRS	Catholic Relief Society
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GoSS	Government of Southern Sudan
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune-Deficiency Syndrome
ILO	International Labour Organization
INGOs	International Non-Government Organizations
MoHP	Ministry of Housing and physical planning
MOH	Ministry of Health
MoEST	Ministry of Education, Science and Technology
NSCSE	New Sudan Centre for Statistics and Evaluation
NEMA	National Environment Management Authority
NEPAD	New Partnerships for Africa's Development
NGOs	Non-governmental organizations
SPLM/A	Sudan people' Liberation Movement/Army
SPSS	Statistical Package for Social Sciences
SMoH	State Ministry of Health Central Equatoria
UN	United Nations
UNDP	United Nations Development Programme
UNHABITAT	United Nations for Habitat
UNICEF	United Nations Children's Funds
USAID	United States Agency for International Development
WHO	World Health Organization

DEFINITION OF TERMS

Community: refers to as a group of interacting people living in a common location.

Health: refers to a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

Livelihood: refers to access to education, healthcare, housing, investment activities among other infrastructural development that affect human life.

Slum: refers to area of a city characterized by substandard housing and squator and lacking in tenure security.

ABSTRACT

Slums are inadequate multifamily tenants or rooming houses, either built to rent or converted from some other use. The main purpose of this study was to identify the effects of the slum establishment on the health of the local community. A total number of 140 respondents were randomly sampled. Data were collected using questionnaires and interviews. The data collected were analyzed using Statistical Package for Social Sciences (SPSS Ver.11.5) and presented in frequencies and percentages in various graphs. The study was meant to cover the provision of health services such as safe and clean water, waste management and vaccination as well as the response of the government and community on poor health. The study found out that, Juba has slums in areas of Custom and Nyakuron among others. The provisions of health services are still poor and in some areas are inadequate. Also the study indicated that the response of the government and community members on health services was poor and the government can not do much in short run due to financial, administrative and political factors. There are a number of challenges that hinder the provision of health services. These included lack of funds, population growth, politics, and poor community participation. The study laid down recommendations to fight poor health services and sanitation.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Southern Sudan covers an area of 648,000 square kilometers (Deng and Wema *et al.*, 2004) whereas the whole Sudan is two and a half million square kilometers large, with an approximate population of 40 million people. This population is comprised of 300 indigenous groups, speaking over 100 language and dialects. The south alone has a population of about 10million people with Gross National Income per capita below US\$90 per year (NSCSE, 2004). The country is endowed with copious agricultural resources, with an approximate 200 million acres of cultivate land (Malwal, 1985). In 1990, according to Food and Agriculture Organization estimates only 15.5% of this area was under agricultural utilization. The vast mineral resources such as petroleum deposits are thus main source of national revenue.

In spite of her potential, the larger Sudan and Southern Sudan in particular, is one of the poorest countries in the world. It is severely ravaged by civil war, which has claimed nearly 1 million lives, forced over 3 million people to the Diaspora, disrupted economic activities, wasted and destroyed precious economic infrastructure (Kebbede, 1999). For an epoch exceeding five decades (the period of civil war, 1983-2005), people of southern Sudan have endured a pitiable life. Almost the entire population has depended on humanitarian assistance in nearly all aspects of life.

The wars in Southern Sudan preceded her independence in 1956. The main causes of wars are attributed to religion, race, and disproportionate allocation of economic resources. The war between Sudan People's Liberation Movement/Army (SPLM/A) and the Government of the Sudan severely affected to the south in terms of underdevelopment. It is estimated that about 2 million died because of the war. Another 4.5 million were displaced (Young, 2005).

As an endeavor to end the war and improve the people's life, the Government of Sudan and Sudan People's Liberation Movement (SPLM) signed a comprehensive Peace Agreement (CPA) on 9th January, 2005 in Kenya (Young, 2005). In this agreement, Southern Sudan was granted semi-autonomy for six years after which a referendum on unity and separation will be conducted (Akoy, 2009).

The study is therefore designed to investigate the effects of the establishment of slums on the health of the local community in Southern Sudan particularly Juba. Since its rate of establishment is higher and it is seen to negatively impact the local people of Juba.

In effort to eradicate illiteracy, USAID is rehabilitating schools, training teachers, and encouraging Teacher-Parent Associations to increase the local capacity to provide quality education. Non-formal education such as adult literacy, which is designed especially for those who grew up in the absence of schools during war, is being prioritized (USAID, 2007).

A number of services such as borehole drilling and establishing and maintaining health clinics have been inadequately delivered. Many NGOs provide limited services such as provision of schools, but no foods in few places. However, a few NGOs such as CRS, which operates six livelihood Skills Training Centres, touch on various aspects of community needs (MoEST, 2007). Muchomba and Sharp, (2006) observed that the livelihoods of the most Southern Sudanese depend entirely on animal husbandry, agriculture, fishing, wild food collection and trade. Yet programs to improve these sectors are inadequate.

1.2 Statement of the problem

Slums are inadequate multifamily tenants or rooming houses, either built to rent or converted from some other uses. The problem of slums is magnified in less developed countries like Southern Sudan. These slums settlements usually lack sewers, clean water supplies, electricity, and roads. Often the lands in which are built are not used because it is unsafe or unsuitable for habitation. Therefore, the researcher wanted to identify the

effects of the slums on the health of the local community. Furthermore, the research focused on finding out the provision of health services and the response of community on poor health services.

1.3 Objectives

1.3.1 Main objectives

- To identify the effects of the slum establishment on the health of the local community

1.3.2 Specific objective

- To assess health service provision in the slum areas.
- To find out how the government and the community response to health service.

1.4 Significance of the study

This research focused on the health risks that slum' establishment can bring to Juba, Southern Sudan. Urban dwellers, particularly children, women, and elderly people, are vulnerable to health threats associated with overcrowding, and pollution, and familiar urban problems that include mental and physical diseases, homelessness, drug abuse, and sexually transmitted diseases as well as violence and social alienation.

The findings of this research are essential in providing information to decision-makers, and planners and other stakeholders, specifically the Government of Southern Sudan (GoSS). Furthermore, these research findings can be used to guide further research in the same area of study. Besides, the work can benefit scholars, students, policy-makers and development agencies.

1.5 Scope and Delimitation of study

The study is limited on the effects of slum establishment on the health of the local community in Juba, Southern Sudan. It targets only the community members, GoSS and NGOs workers since they are the ones who were expected to provide reliable information regarding to research objectives.

In terms of area, the study covers 140 respondents whereby government officials were 40 (n = 40), 20 NGOs workers (n = 20) and 80 community members (n = 80).

1.6 Organizations of the Study

Chapter 2 of the study discusses the literature review while chapter 3 and 4 present materials and methods used and data analysis respectively. Chapter five discusses the summary, conclusion and recommendations.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Global Situation of Slums

The United Nations estimates that at least 1 billion people 20 percent of the world's population- live in crowded, unsanitary slums of central cities and the vastly shantytowns and squatters that ring the outskirts of the most Third World Cities. Around 100 million people have no homes at all. In Sao Paulo, perhaps 1 million 'street kids' who have ran away from home or been abandoned by their parents live however and wherever they can. This is surely a symptom of tragic failure of social systems (Cunningham and Saigo, 1995).

The unpopular but unauthorized settlements usually lack sewers, clean water supplies, electricity, and roads. Often the land on which they are built was not previously used because it is unsafe or unsuitable for habitation. In Bhopal, India and Mexico City, for example, squatter settlements were built next to deadly industrial sites. In Rio de Janeiro, La Paz (Bolivia), Guatemala city and Caracas (Venezuela), they are perched on landslide prone hills. In Bangkok, thousands of people live in shacks built over a fetid tidal swamp. In Lima (Peru), Khartoum (Sudan) and Nouakchott, shantytown have spread onto sandy deserts. In Manila, 20,000 people live in huts built on towering mounds of garbage and burning industrial waste in city dumps (Cunningham and Saigo, 1995).

2.2 Situations of slums in Africa and Sub-Sahara Africa

Growth of cities and towns is now mainly a trend in Africa, where about 40 percent of the population is urban today, driven by continued high population growth and slow economic growth in parts of the regions (Patel and Burke, 2009).

In Africa, urbanization is linked to poverty. Globally, nearly 1 billion people live in *slums*, and this number is projected to double to 2 billion in the next 30 years. The United Nations Human Settlements Programme (UN-Habitat, 2003) defines a slum as an area with a lack of basic services (sanitation, potable water, and electricity), substandard

housing, overcrowding, unhealthy and hazardous locations, insecure tenure and social exclusion. In Sub-Saharan Africa, 71.8% of urban dwellers live in slums, the highest proportion in the world (UN-Habitat, 2008).

Africa's significant share of ill health in slums stems from poor access to sanitation and clean drinking water. In 2000, 30-50% of African urban dwellers lacked a safe water supply. Even where it is available, access to safe water is often unaffordable for the urban poor. Slum dwellers in cities in East Africa pay 5-7 times more for a litre of water than the average North American (Cunningham and Saigo, 1995).

Across Africa, 45% of the urban population lacked access to improved sanitation in 2000. In Eastern Africa in 2006, open defecation was the only sanitation practice available to 33% of the population (UN-Habitat, 2008). This contributes to the contamination of water and land within cities as well as too many of the waterborne diseases prevalent in slums.

Sub-Saharan Africa is the least urbanized region in the world. Only 39.1% of the region's population lives in cities. However, the region's urban population is projected to more than double to 760 million by 2030. The rate of urbanization makes it very challenging to manage. A recent paper in the *New England Journal of Medicine* argued that urbanization is a "health hazard for certain vulnerable populations, and this demographic shift threatens to create a humanitarian disaster" (Patel and Burke, 2009).

Children bear a disproportionate burden of diseases in slums. In Ethiopia and the Niger, rates of child malnutrition in both urban slums and rural areas are around 40%. Immunization coverage in slums in the Niger is 35% compared with 86% in non-slum urban areas. In Nairobi, where 60% of the city's population lives in slums, child mortality in the slums is 2.5 times greater than in other areas of the city (Douglas *et al.*, 2008).

African slum dwellers are particularly vulnerable to the negative health effects of rapid urbanization and global climate change. Further research is required to understand the

impacts and global climate change on the health of slum dwellers as well as to design appropriate adaptations policies. When planning public health interventions in Africa one must consider dynamic relationship between climate change and urbanization and their impacts on vulnerable urban population (Boko *et al*, 2007., Satterthwaite, *et al*. 2007).

2.3 Characteristics of Slums

The characteristics associated with slums vary from place to place. Slums are usually characterized by urban decay, high rates of poverty, and unemployment. They are commonly seen as "breeding grounds" for social problems such as crime, drug addiction, alcoholism, high rates of mental illness, and suicide. In many poor countries they exhibit high rates of disease due to unsanitary conditions, malnutrition, and lack of basic health care.

A UN Expert Group has created an operational definition of a slum as an area that combines to various extents the following characteristics: inadequate access to safe water; inadequate access to sanitation and other infrastructure; poor structural quality of housing; overcrowding; and insecure residential status (Globalization status, 2003) A more complete definition of these can be found in the 2003 UN report titled "Slums of the World: The face of urban poverty in the new millennium?" (UN-Habitat report, 2009). The report also lists various attributes and names that are given by individual countries which are somewhat different than these UN characteristics of a slum.

Low socioeconomic status of its residents is another common characteristic given for a slum (Measure Evaluation/NIPORT, 2006)

In many slums, especially in poor countries, many live in very narrow alleys that do not allow vehicles (like ambulances and fire trucks) to pass. The lack of services such as routine garbage collection allows rubbish to accumulate in huge quantities. The lack of infrastructure is caused by the informal nature of settlement and no planning for the poor by government officials. Additionally, informal settlements often face the brunt of natural and man-made disasters, such as landslides, as well as earthquakes and tropical storms. Fires are often a serious problem (Birkinshaw, 2007).

Many slum dwellers employ themselves in the informal economy. This can include street vending, drug dealing, domestic work, and prostitution. In some slums people even recycle trash of different kinds (from household garbage to electronics) for a living - selling either the odd usable goods or stripping broken goods for parts or raw materials.

2.4 Consequences of Slums in Sudan

One of the consequences of slums is the growth of poverty in urban areas, especially Juba, which is used as a case study. Urban poverty is a consequence of the specific type of dependent urban development which has characterized Southern Sudan's society since colonial times. The pattern of slums development in the Sudan has evolved in close correspondence with the main objective of the British colonial state and its modes of capital accumulation-extracting as much surplus as was possible at a minimum cost. Pre-capitalist subsistence economies were transformed into petty commodity structures to serve as suppliers of cheap labor for capitalist enterprises.

The urban poor are consistently lured to urban areas not so much by the promise of finding manufacturing employment, but by the hopes of sharing or gaining access to a part of the surpluses consumed, primarily by providing services to those who control the surplus. Approximately 25% of the Sudanese population lives in urban areas, about 5.5 million people. The urban population increased from 8.1% in 1955-1956 to 20.2% in 1983.

2.5 Factors for the growth of slums in Southern Sudan

The most important factors responsible for the rapid rate of growth of slums in the Southern Sudan are natural growth, net migration and reclassification. The growth rate estimated for the Sudan is about 2.8% per year, and this is partly responsible for the 6% rate of slum growth. Rural-urban migration is the single most important factor accounting for slum's growth.

2.6 Physical situation of Juba

Land in Juba is scarce and expensive. The residential areas are characterized by slums. Majority of the modern houses are at the outskirts of the town. Markets in Juba are mostly open-air, known as “Konyokonyo”, custom (‘Jebel’), ‘Suuk Sita’, and ‘Gumo’.

Seasons in Juba change from time to time. The roads connecting all estates to the town centre are dilapidated. There are dusty during spells and wet in rainy seasons, leading to water-filled potholes. This makes it difficult to access the town. Social amenities such as hospitals and clinics are scarce. There has been only one university (a branch of University of Juba in Khartoum), a few secondary schools and colleges (Akoy, 2009)

CHAPTER THREE

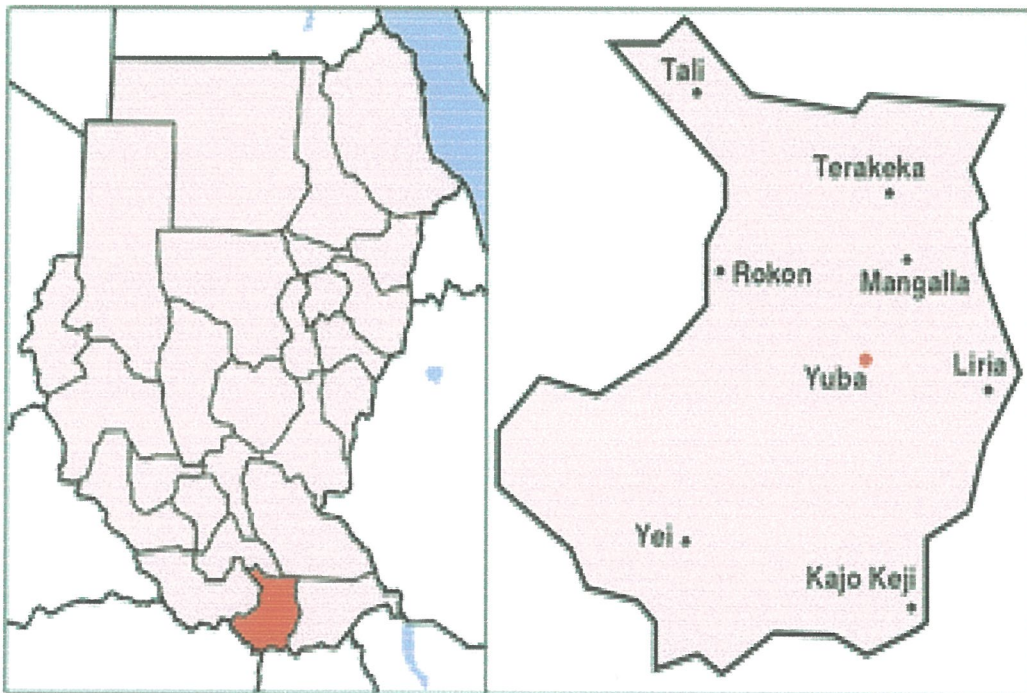
MATERIALS AND METHODS

3.0 Introduction

This chapter presents the research materials and methods that were adopted in the study. The specific issues discussed in this study include research design, identification of target population, sampling and sampling procedure, collection of data and data analysis.

3.1 Description of the study area

The study was carried out in Juba, the capital city of Southern Sudan. Juba is a cosmopolitan city with dense population whose size not yet established. The population is comprised of diverse ethnic groups and expatriates. Upon signing of the CPA, Juba became the commercial centre as well as the administrative town of Southern Sudan. Nearly all offices of the Government of Southern Sudan are located there. NGOs and development partners occupy a significant space in Juba, more than any other town in the South (Akoy, 2009).



3.1.1 Location and Size

Central Equatoria is one of the 10 states of Southern Sudan, with coordinates: 4°47'N 31°24'E/ 4.783°N 31.4°E and an area of 22,956 km². It was formerly named Bahr el Jabal (*River of the Mountains*) and was named for the tributary of the White Nile that flows through the state. It was renamed Central Equatoria in the first Interim Legislative Assembly on 1st April 2005 under the government of Southern Sudan.

Central Equatoria, like other states in South Sudan, is sub-divided into counties. These are further divided into Payams, then Bomas. Each county is headed by a County Commissioner, appointed by the President. They are Juba County, Lainya County, Morobo County, Terekeka County, Yei County, and Kajo Keji County..

Important cities of Central Equatoria are Juba, Kajo Keji, Liria, Mangalla, Rokon, Tali, Terekeka, Yei, Gemaiza, Tombek, Tindilo, Muni and Rejong. The major border crossing to the Democratic Republic of the Congo is at Dimo.

3.1.2 Socio-economic activities

Southern Sudan is economically underdeveloped. There is little industrial activity and, besides oil extraction, it only shows a subsistence farming economy. The economic base of the towns is extremely weak and relies on the salaries of Southern Sudanese government's employees and of the Government of Sudan's military personnel. There are few businesses, banks are limited to the larger towns and local markets are small and poorly supplied (Pareto, 2009).

The inter-urban transportation system that is currently being recovered does not offer all weather conditions, constraining the supply of essential goods and the export of agricultural produce, which are limited to the few existing towns and their immediate surroundings (Pareto, 2009).

This urban settlement context suggests a type of self-sufficient 'city-state' scenario, where an administrative, commercial and residential core is supported by peripheral

agricultural area, with limited external inputs or outputs. Due to such limitations, there is little production to export to external markets or any significant employment besides government jobs (Pareto, 2009).

The urban infrastructure situation is bleak-there is no access to safe water, no sanitation, no waste collection, no electricity and no means of communication. There are insufficient primary schools, no vocational schools, few and ill equipped health facilities or recreational areas. Fortunately, there is plenty of available land for urban development and the urban road networks, having negligible traffic, are in reasonable conditions except where damaged by poor drainage. There are few sources of building materials available (timber, clay and sand) and all manufactured building products need to be imported from abroad (Pareto, 2009).

The conventional benchmark for the provision of services conditions of affordability and sustainability – can not be directly applied in Juba, Southern Sudan, except within the government context itself.

While there are some infrastructure and services in the larger towns like Juba and even in some of the smaller centres, in general urban development is still embryonic (Pareto, 2009). This general overview shows that the city building effort has to be done from scratch, side by side with the on going nation building effort.

3.2 Research design

This research used survey design. The research used survey method where questionnaires and interviews were carried out. These approaches gave the researcher more information and time to collecting and interpreting data from community members, government officials and NGOs among others.

3.3 Target population

This study had targeted population consisting of community members, government officials, and non-governmental organizations (NGOs) staffs in Juba. This population was targeted since it is expected to provide relevant information on the effects of the

slums establishment on the health of the community in Juba. They also have essential experience in the provision of other services such as education and health care.

3.4 Sampling and sampling procedures

The participants in the study area were obtained from a sample of twenty households of each area which is area A, B, C, and area D, and this will make a total of 80 respondents (n = 80). Individual government officers 40 (n = 40) and NGO workers 20 (n = 20). Therefore, the targeted population was one hundred and forty (N = 140). The targeted sample size was obtained using a formula $n = N / (1 + (N * e^2))$ where **n** represented sample size, **N** is represented total population and **e** represented the level of statistic significance set.

Systematic random sampling was used to select representative of the community members because it is considered to have less bias and of reasonable time convenience. Purposive sampling was used to provide the required information with respect to the objectives of the study. This is because respondents are informative and they process the required characteristics.

Table 3.1: Summary of the Sample Size of Respondents

Participants	Target sample size (N)	Sample size (n)
Community members	100	80
Government officials	45	40
NGOs	21	20
Total	166	140

3.5 Data collection and analysis

The senior administrative personnel from the selected government offices and the NGO were contacted to explain the purpose of the study, obtain their consent and request for their permission and assistance where necessary. For the community members, any representative community members were randomly approached and informed about the purpose of the study.

Before responding to questionnaires, the participants were given instructions where necessary. Their confidence was obtained by assuring them that their identity would not be revealed. Each respondent had the discretion to respond to the questionnaire items independently to minimize the tendency of information bias. The respondents were given ample time to fill in the questionnaire to reduce the problem related to impulsive responses. Completed questionnaires were collected immediately. Where this was not possible, arrangements were made to pick them later.

The data collected was organized and prepared for analysis by coding and entering them into the Statistical Package for Social Sciences (SPSS, Ver.11.5). The study used descriptive statistics such as frequencies and percentages. The outcomes of the quantitative data from the coded close-ended items were analyzed using descriptive statistics. Further, the data was interpreted and discussed in relation to the research questions. On the other hand, the qualitative data generated from open-ended questions was converted into quantitative data and where necessary, presented in a narrative form.

3.6 Limitation of the study.

Some officials refused to respond to the questionnaires pretending that they are too busy and they can not waste their time to the junior academic researchers. This made it difficult for the researcher to convince the government officials and other important people because there was no way a researcher. Another limitation was the language spoken, the most spoken language by many people in Southern Sudanese is Arabic since the researcher was using English, and it was difficult for her to collect data using

questionnaires because some community members and even some government officials found it hard to answer the questions as well as answering questionnaires.

CHAPTER FOUR

RESEARCH FINDINGS, INTERPRETATION AND DISCUSSION

4.0 Introduction

This chapter presents data analysis and presentation of the findings on the effects of slum establishment and its effects on the health of the community in Juba. The data was analyzed using a Computer programme, SPSS Version 11.5. This enabled the presentation of data in frequencies and percentages.

4.1 Background information

The study considered demographic characteristics of three groups; community members who are women, development partners (NGOs/CBOs), and government officials.

4.1.1 Community members

The background information of community member considered includes gender, age, marital status, household head type and occupation.

Table 4.1: Summary of the demographic characteristics of Respondents

Background information of the Community members		
Background Information (Gender, Marital status)		
Gender	Frequency	Percent
Male	48	60
Female	32	40
Marital status		
Married	36	45
Not married	44	55

Majority of the respondents were males (60 %) and females (40%), by gender. The results also showed that the marital status of the respondents were married (45%) and not married (55%) But, this may not have any implications since the sample was selected randomly.

4.1.2 Government Officials

The demographic characteristics of the government officials that were considered include gender, designation and working experience. Table 4.2 below shows the summary of background information of the officials.

Table 4.2: Background information of Government officials

Gender	Frequency	Percent
Male	28	70
Female	12	30

Source: primary data

The majority of the government officials were males (70%) and the rest were females (30%) These were different designation; Directors, Pharmacists, Environmental officer, Secretary, Development officers, and Technical team members. Slightly more than half of them (55%) had working experience of more than five years. Others (45%) had worked for less than five years.

4.1.3 Development Partners

A number of NGOs were considered in the study. These included. Most of them are local organizations.

4.2 THE PROVISION OF HEALTH SERVICES

The study wanted to find out the provision o the health services in Juba, southern Sudan. The respondents were asked to comment if they are aware of any health amenities available which are necessary for the provision of health services.

Table 4.3: community response on the health amenities

Response	Frequency	Percentage
YES	81	58
NO	59	42
Total	140	100

Slightly more than half of the respondents (58%) indicated that they are aware of the health amenities which are available in Juba. Another 42% indicated that they were not aware of the health amenities. This shows that there were few health amenities available in Juba and that health programmes are needed.

Health amenities known to be available and existing in Juba, southern Sudan are shown in table 4.3. The following were listed; sanitary landfills (32%); clinics and hospitals (39%); maturation ponds (6%); playing grounds (4%); incinerators (3%); and others (16%).

Table 4.3: The list of health amenities in the area of study

Health amenities	Frequency	Percentage
Sanitary landfill	45	32
Health centres, Clinics and hospital	55	39
Maturation ponds	8	6
Playing grounds	6	4
Incinerators	4	3
Others	22	16
Total	140	100

Respondents indicated that the quality of the health amenities were good (34%) poor (32%) very poor (29%) and the amenities excellent (05%). These were rich people who are living in residential area where the health amenities were well developed.

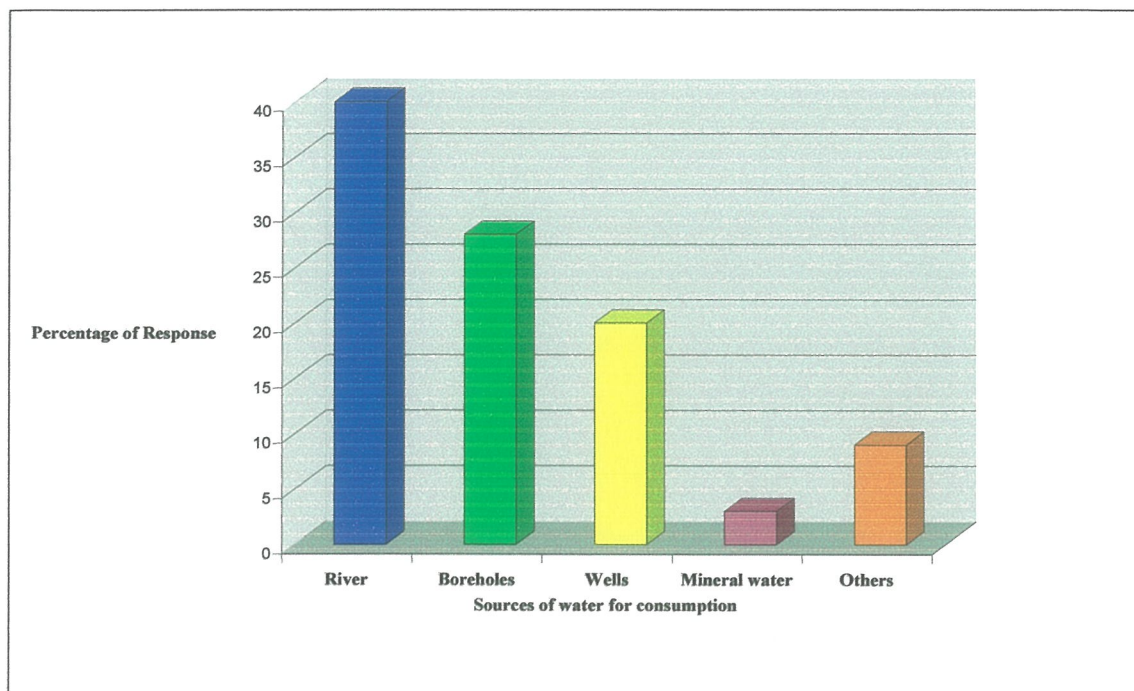


Figure 4.2: Community response on water sources for domestic consumption

Majority of the respondents access water outside of their houses (80%) and the rest (20%) access water from their houses. Slightly more than half of the respondents (57.6%) indicated that the water taken was good. However the (41.4%) felt that the water quality was average. The (1%) showed that it was poor for human consumption.

Table 4.5: Summary for water access for domestic consumption

Water Access	Frequency	Percentage
Inside the house	28	20
Outside the house	112	80
Total	140	100

The findings of the study showed that the quality of water taken by the people in Juba is fairly good. However investment has to be done in order to supply clean and safe water to the local communities of Juba, Southern Sudan. This indicated that Juba has no water systems that have been put up such that community living there gets access to safe and

clean water. However most people use river as the source of water as indicated by 80 percent, this determines the health status of the people because water from the river is not treated and not piped.

Juba faces an enormous challenge in providing adequate public sanitation facilities, sewage disposal and refuse collection is a problem as the population increases. Improperly treated sewerage and uncollected garbage have contributed to a vicious cycle of water pollution, water-borne diseases, poverty, and environmental degradation.

The study findings indicate that there were four ways of waste disposal used by the community living in Juba. The ways mentioned were landfills, open dumping, composting and incineration. Nearly half of the respondents remarked that the open dumping is widely used by the people to dispose their wastes (46%), followed by composting (38%), landfills (11%) and waste burning through incinerators (5%) This method (incineration) was used in few health centres to burn medical/health wastes.

Table 4.6: Ways used to dispose wastes in the study area

Method (s)	Frequency	Percent
Open dumping	64	46
Composting	53	38
Landfills	16	11
Incineration	7	5
Total	140	100

Thus, the study concluded that, waste management problems are accelerated by various factors which include increasing urbanization particularly the establishment of slums, rural-urban migration, rising standards of living, and rapid development associated with population growth. All these factors have resulted in increased solid waste generation by industrial, domestic, and other activities. This increase has not been accompanied by an equivalent growth in the capacity to address the problem. The proper management of

waste has thus become one of the most pressing and challenging environmental problem in the Juba.

Respondents were also asked to state if they were aware of any diseases that erupted due to poor waste disposal. And 76% of respondents indicated that they were aware of diseases that occur due to poor waste disposal. The diseases mentioned were Diarrhea (30%), Malaria (20%), cholera (16%), typhoid (10%), dysentery (8%), Bilharzias (6%), eye diseases (6%), and skin diseases (4%).

Table 4.7: Diseases which erupt due to poor waste disposal

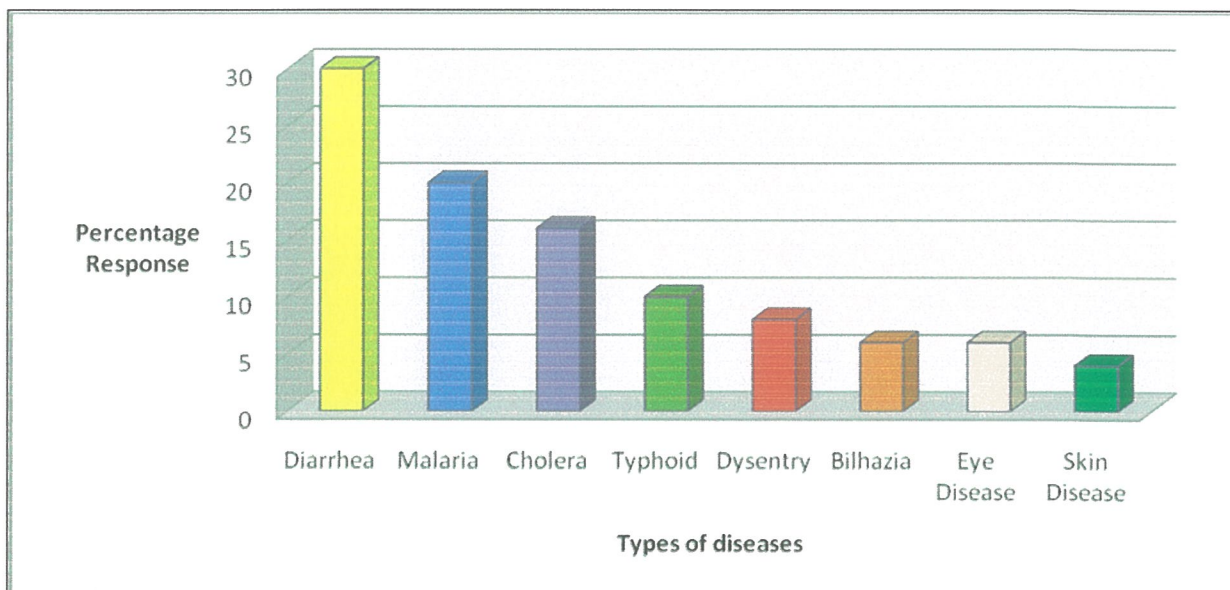


Figure 4.3: Types of diseases due to poor waste disposal in Juba.

The study findings confirmed that poor ways waste disposal in Juba has accelerated the rate of the spread of diseases, these diseases include Cholera, Malaria, typhoid and dysentery, and these diseases are originating from water bodies, air or soils particularly the water stagnant areas which serve as breeding sites for diseases-causing organisms. Poor ways of waste disposal are influenced by lack of waste disposal facilities. For example, one respondent who was a Health Officer said that *“the absence of proper sterilization procedures is believed to have increased the severity and size of cholera epidemics in Juba”*. Hence it becomes hard to prevent the spread of diseases in the area of study.

epidemics in Juba". Hence it becomes hard to prevent the spread of diseases in the area of study.

4.2.1 Vaccination

The study show that vaccination services are not well developed and they are available in very few health centres of Juba and are only provided to children mostly less than five years with the intention of preventing diseases such as polio and measles. A total number of 870 children were estimated to receive vaccination in Juba every year; this was according to EPI department which was interviewed.

4.3 RESPONSES TO POOR HEALTH SERVICES

4.3.1 Community response

Services in Southern Sudan suffer from several shortcomings, yet it was shown that individuals feel access to services is generally improving. Health care facilities and services are also problematic. Respondents remarked that few doctors exist for those who are in need of adequate health care. Access to potable water was also a major concern of the general population sampled. This concerned service providers as well, most notably those dealing with public health and hygiene.

Community problems continue to exist, and are evident from the responses of the populace sampled, when asked about what community problems (as distinct from personal concerns or problems) need most attention, health care, water availability and sanitation rank amongst the highest.

Table 4.8: Community problems that need most attention in frequency and percent

Community Problem (s)	Frequency	Percent
Health care	44	31
Water availability	37	26
Sanitation	22	16
Land for agriculture	15	11
Land for housing	15	11
Environmental problems	7	5
Total	140	100

When asked to compare access to basic services from last year to this year, individuals responded as follows;

Table 4.9: Getting services

Getting services (school, medical, water) 2007/2008, in percent		
Very difficult	Not difficult and not easy	Very easy
62	29	9
Getting services (schools, medical, water) 2008/2009, in percent		
Very difficult	Not difficult and not easy	Very easy
48	22	30

This tends to indicate that, for the average individual, life has become somewhat easier over the last years.

4.3.2 Government responses

The study findings confirmed that Southern Sudan suffers from a lack of administrative resources particularly at the boma, payam and County levels and several weaknesses (particularly in economic infrastructure) that need to be overcome. Inefficient tax collection practices, a lack of service creativity and an overall culture of dependency on international NGOs have led to scant progress at improving community services from economic resources. Tax collection has in some cases improved. However, given the absence of knowledge about economic activities that the government displays, absence of

a census, and unreliable tax collection, the tax base is extremely narrow, and seen (by some informants at least) as a form of extortion by government officials, rather than part of normal legal process.

Due to the above problems, the response of the Government of Southern Sudan (GoSS) on health provision, (clean and safe water supply and sanitation) is very slow and crawling.

4.4 The constraints that government face in the provision of health services

The following were the constraints mentioned by the sampled population when they were asked to comment on the constraints that the government face in the provision of health services in Juba, Southern Sudan. The following were mentioned;

4.4.1 Finance

Respondents who were asked about the constraints that the government face indicated finance as a major problem and this was highlighted by 30% of the respondents. Lack of revenues caused by poor tax collection was the major reason also government depends much on the International NGOs to implement various projects that can provide services to the people.

4.4.2 Administrative constraints

The government of southern Sudan suffers from a lack of administrative resources particularly at the boma, payam and County levels. This inadequacy was due to lack of service creativity and an overall culture of dependency on International NGOs. This administrative resource includes both human resources and physical resources which are necessary for their activities. This constraint was attested by 28% of the respondents.

4.4.3 Population

Population is among the constraints that challenge the government in the provision of the health services, and this was remarked by 16% of the respondents. Juba is characterized by the rapid population increase due to immigration particularly rural-urban migration and predominated by traditional residential patterns whereby waste disposal ways and

water consumption patterns are unsustainable. Therefore, population increase in Juba poses a great threat on the health facilities available.

4.4.4 Political constraints

Some respondents (13%) remarked politics as a government concern on the provision of health services. Provision of health services in Southern Sudan needs political will in decision making process and planning. Due to this, health services are still inadequate and not readily available to the people.

4.4.5 Community participation

The public participation in development project is very poor in Juba, this is because urban settlement is accompanying with self-sufficient scenario. People are concentrating on their own business. This was indicated by 18 respondents (13%).

The table below summarizes the community response on the constraints faced by the government of Southern Sudan in providing health services in percent and frequencies.

Table 4.10: Constraints faced by GoSS

Constraint (s)	Frequencies	Percentage
Finance	42	30
Administrative	39	28
Population	23	16
Political	18	13
Community participation	18	13
Total	140	100

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of the findings, conclusion and recommendations based on the findings on the slum establishments and its effects on the health of the local community study also sought to find out the provision of health and sanitation services such as clean and safe water, waste management, prevention of diseases spread and vaccination as well as to find out how the government and the community respond to poor health and sanitation services in Juba, Southern Sudan.

5.1 Summary

The main purpose of this study was to identify the effects of slum establishment on the health of the local community. The study also sought to find out the provision of health services such as safe and clean water supply, waste management, prevention of the spread of diseases and vaccination and to find out the respond of government and community on poor health services.

The sample consisted of forty governmental officials ($n = 40$), twenty Development partners ($n = 20$) and eighty community members ($n = 80$). The researcher used simple randomly sampling to sample community members and purposive sampling methods to sample governmental officials and development partners (NGOs). The data collection instruments used was questionnaire and literature review. These were used to collect data from community members, government officials and NGO workers and other sources such as published and unpublished documents.

The researcher used SPSS (Statistical Package for Social Sciences) to analyze data. Descriptive statistics such as frequency and percentages were used to summarize the data. From the analysis, the study found out that Juba is having slums in areas of Custom, Nyakuron, among others. The provision of health services is poorly developed and in some areas not in existence. The response of community on poor health services is poor

and the government cannot do much in short run due financial, administrative and political factors.

5.2 Conclusion

Slum areas are deprived of health services and the provision of health services is poor. There is no supply of safe and clean water; there is poor waste management due to unavailability of waste management facilities like sanitary landfills. The study also indicated that there were no measures put in place to prevent the spread of diseases instead many people are suffering from cholera, dysentery, typhoid and Malaria due to poor waste disposal systems which contaminate water sources and soils. Vaccination services were poorly developed and unavailable to children of the age less than five years but in very few health centres.

The response of the community members on health service showed that individuals feel access to services is generally improving. However, health care facilities and services are still problematic. Respondents remarked that few doctors exist; access to potable water is also a major concern of the general population sampled. Therefore the study concluded that the community problems will continue to exist particularly on health facilities, water supply and sanitation.

5.3 Recommendations

In order to achieve the provision of health services to the local community of Juba, the following recommendation are to be considered;

- The government and stakeholders should increase the investment in water treatment processes in order to improve the service not only for domestic use but also for the industries and the future generation. Also plants should be planted especially in the catchments areas to reduce/retain some nutrients disposed on water bodies in order to prevent the fertilization of the water source which can lead to Eutrophication and poor water quality.
- People have to be sensitized to dispose well their wastes. Education should be provided in order to shape the attitude of the community members particularly in changing their lifestyles and consumption patterns; this will reduce the rate and

amount of waste generated. Since poor waste disposal is the source of diseases, proper waste disposal will help to control and prevent the spread of diseases.

- Community members have to be involved in health development projects; this is because public participation is essential and will help in proper allocation of resources, planning, implementation, monitoring and management of projects hence cost effective.
- Government of Southern Sudan have to respond to community needs in order to improve their living standard. The available resources have to be allocated and distributed rationally in order to ensure the proper provision of services particularly safe and clean water; waste management and prevention of diseases.

REFERENCES

- Akoy D. W. (2009). *The Impact of Post-conflict economic recovery programmes on livelihoods in Southern Sudan: A case study of Juba*. A research project submitted to Faculty of Social Science of The Catholic University of Eastern Africa. pp. 21-22
- Birkinshaw.M (2007). The report on shack fires in South Africa by Matt Birkinshaw at http://abahlali.org/files/Big_Devil_Politics_of_Shack_Fire.pdf [Accesses on January 2010)
- Boko M, Niang I, Nyong A, Vogel C, Githeko A, Medan M.(2007). Africa in Parry ML, Canziani OF, Palutiko JP, Van der Linden PJ, Hanson CE, eds. *Climate Change 2007: Impacts, adaptation and vulnerability*. Contribution of working Group II to Fourth Assessment Report of the Intergovernmental Panel on Climate change. Cambridge University Press.
- Commission on Social Determinants of Health.(2008). Closing the gap in a generation: *Health equity on the social determinants of health*. Geneva, World Health Organization.
- Cunningham W. P and Barbara Woodworth Saigo. (1995). *Environmental Science: A global Concern*. Third Edition. Wm C Brown communications, Inc. USA.
- Deng lual A. and Wema J. K,(2004). *Institutional Reform and Capacity Institutional right?* Paper prepared or the World Bank Insitute (WBI). *Development in Post-Conflict Countries: Can Countries Emerging Out of Civil Wars* Get Farstad, H., (2002) *Intergrated entrepreneurship education in Botswana, Kenya and Uganda*. Norway: World International Institute of Technology.
- Douglas I, Alam K, Maghenda M, McDonnell Y, Mclean L, Campbell J.(2008). Unjust waters: *Climate changes, flooding and urban poor in Africa*. Environ urban. 20:187-205.
- http://mpra.ub.uni-muenchen.de/13988/MPRA_Paper_No._13988, posted 11 March 2009/12:05

[http://www.unhabitat.org/downloads/docs/4625_51419_GC21Whatare slums.pdf](http://www.unhabitat.org/downloads/docs/4625_51419_GC21Whatare%20slums.pdf)

- Kebede.K,(1999). *Sudan's predicament: civil war, displacement and ecological degradation (ed)*, Athenaeum press, Ltd, Gates head, tyne & wear.
- Malwal B. (198 5). *The Sudan: a second challenge to nationhood*. New York Thornton.
- Measure Evaluation / NIPORT (2006). Slums of urban Bangladesh: mapping and census, 2005. Centre for Urban Studies / Measure Evaluation /National diei/pdf/tr-06-35.pdf]
- Muchomba, E. and Sharp, B. (2006). *Southern Sudan livelihood profiles: a guide for humanitarian and development planning*. Nairobi, Kenya. Southern Sudan Centre for Census, Statistics and evaluation (SSCCSE) and Save the children UK.
- NEMA. (200 3). State of the Environment Report for Kenya, (2003). National Environment Management Authority, Nairobi.
- NEMA. (2008). The ban on the manufacture, importation and distribution of plastic carrier. National environment Management Authority, Kenya http://www.nema.go.ke/index.php?option=com_content&task=view&id=208&Itemid=159.
- New Sudan Centre for Statistics and Evaluation, (2004). *Towards a Baseline: Best estimates of Social Indicators for Southern Sudan*. NSCSE Series Paper 1/2004. New Sudan Centre for Statistics and Evaluation and UNICRF. 71 pp.
- Ogula P. A. (1998). *A handbook on Curriculum Development*. Nairobi, Kenya.
- Pareto andVittorio E. (2008). *Southern Sudan urban development strategy*. Munich Personal RePEc Archive, pp. 4-6.
- Patel R. B and Burke T. 2009. Urbanization - an emerging humanitarian disaster. *New England Journal of Medicine*; 361:741-3
- Policy hand book (Final draft) Juba (2007). Ministry of Ministry of Education, Science and Technology.
- Satterthwaite D, Huq S, Pelling M, Reid H and Lankao P.R. (2007). Adapting to climate change in urban areas: *the possibilities and constraints in low and middle income nations*. London: International Institute for Environment and Development.
- Slums of the World UN-HABITAT report(,2008) downloadable. <http://www.unhabitat.org/pmss/getPage.asp?page=bookView&book=1124>

- Unger A. and Riley L.W.(. 2007). *Slum health from understanding to action*. PLoS Med.; 4:e295. doi 10.1371/journal.pmed.0040295.
- UN-HABITAT. (2007) Press Release on its report, "The Challenge of Slums: Global Report on Human Settlements 2003".
- United Nations Human Settlements Programme.(2006). *State of the world's cities 2006/7*. London: Earthscan Publications.
- United Nations Human Settlements Programme.(2008). *The state of Africa's cities*. Nairobi.
- USAID. (2007).*Economic Civil Society Organizations in Democracy-Building Experiences from Three Transition Countries*". PVC/ASHA Research APS AFP-G-00-05-00012-00. September 2006. Submitted by CHF International. Doc ID/Order No. PN-ADI-701.
- WHO (1986). *Concepts of Health Behavior Research*, Reg. Health Paper No.13, SEARO, New Delhi.
- Young, J. (2005) *Sudan: a flawed peace process leading to a flawed peace*. Review of African Political Economy, 103, 99-113.

APPENDICES

APPENDIX A

Kampala International University
School of Engineering and Applied Sciences
P. O. Box 20000 Kampala, Uganda.

Questionnaires

Purpose

Dear respondent,

My name is Deborah Anyier Deng. I am final year student specializing in Environmental Management in school of Engineering and applied Sciences, Kampala International University. As a school requirement for award of a degree, I am currently carrying out a research on “**The Effects of the slum Establishment on the Health of the Local Community**”. The information obtained will be used for the purposes of this study and your identity will be treated with due confidential.

Instructions

Place a tick in the bracket (✓) **where** you find the most suitable response that best describes your opinion. Where explanation is required, use the space provided.

Demographic data

1. Gender Male () Female ()
2. Age:
3. marital status: Married () Not married ()
4. Occupation:
5. Where do you work?
 - i. Government ()
 - ii. NGOs ()

- iii. Self-employed ()
- iv. Other () Specify.....

6. Which state of Southern Sudan do you come from?

- i. Central Equatoria ()
- ii. Eastern Equatoria ()
- iii. Jonglei ()
- iv. Lakes ()
- v. Northern Bahr el Ghazal ()
- vi. Unity ()
- vii. Upper Nile ()
- viii. Warrap ()
- ix. Western Bahr el Ghazal ()
- x. Western Equatoria ()

Provision of Health Services

7. Are you aware of any health amenities in your area?

Yes () No ()

a) If you say yes to question 7 above, please list those that you know

.....

.....

.....

.....

.....

8. How would you comment on the quality of the health amenities in your area?

Excellent () Good ()

Poor () Very poor ()

9. What suggestions would you have to increase quality of health amenities?

.....

.....

.....

.....
.....

10. What are the sources of water for domestic consumption at your area?

- River ()
- Well ()
- Boreholes ()
- Mineral water ()
- Other () Specify.....

11. Where do you access water for domestic consumption?

- Inside the house (piped) ()
- Outside the house ()

12. What can you suggest to improve on the quality of water for domestic consumption?

.....
.....
.....
.....

Waste disposal and spread of diseases

13. How would you comment on the way in which waste is disposed in your area?

.....
.....
.....
.....
.....

14. Are you aware of any diseases that result from poor waste disposal?

- Yes ()
- No ()

15. If you say yes to question 15 above, please list the diseases you are aware of

.....
.....
.....

.....
.....

21. What suggestions would you have for the community in order to improve on state of health in the slum settlement?

.....
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.....
.....
.....

.....END.....

Thanks for your cooperation

Appendix B

Table 4.7: Diseases which erupt due to poor waste disposal

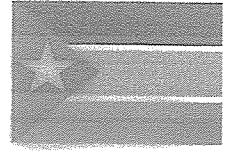
Diseases	Frequency	Percentage
Diarrhea	42	30
Malaria	28	20
Cholera	22	16
Typhoid	14	10
Dysentery	11	8
Bilharzias	9	6
Eye diseases	9	6
Skin diseases	6	4
Total	140	100

MAP OF SUDAN





GOVERNMENT OF SOUTHERN SUDAN
CENTRAL EQUATORIA STATE JUBA
MINISTRY OF HEALTH
GENERAL CORRESPONDENCE



No.: SMOH/CES/50.07
Date: 18th January, 2010

TO WHOM IT MAY CONCERN


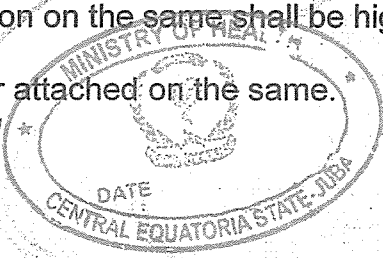
Subject:- **Conduction of Assessing Slums Health Status by a Student Anyier Deborah**

This is to certify that the bearer of this letter is a Student at Kampala International University. She wants to conduct an assessment on Slums Health Status.

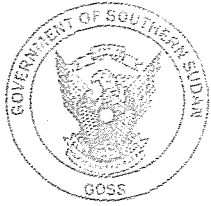
Therefore, given the importance of this exercise, the State Ministry of Health, grants her an approval to conduct this desired exercise.

Any facilitation on the same shall be highly valued.

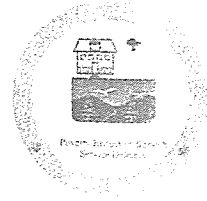
N.B:- Letter attached on the same.



HASSAN ALI GUMA
FOR/DIRECTOR GENERAL
STATE MINISTRY OF HEALTH
CENTRAL EQUATORIA STATE/JBA

cc:- D/G for Environmental, MHPP&E. Juba.



GOVERNMENT OF SOUTHERN SUDAN
Ministry of Housing, Physical Planning & Environment
OFFICE OF THE DIRECTOR GENERAL FOR ENVIRONMENT



Ref: MHPP&E/GOSS/J/17.G.2

14th Jan, 2010

Subject: TO WHOM IT MAY CONCERN

This is to certify that Ms. ANYIER DEBORAH is a second year student of the Faculty of Forestry and Environmental Management in Kampala International University, Uganda who is on internship to the Directorate of Environmental Affairs, Ministry of Housing, Physical Planning and Environment, GOSS, Juba. She would like to carry out an assessment of the impacts of slums on the health of the community. Hence the area around Mess Arbein in Customs has been identified as suitable for her case study in Juba.

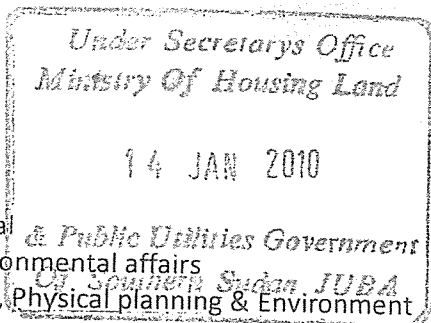
We shall be very grateful, if you could accord her any possible cooperation and assistance to enable her put into practice the theory she learned in class besides providing us with valuable information pertaining to the effects of slums on the community which is considered as an important aspect of urbanization.

We appreciate your cooperation with her in this respect and look forward to your assistance to her.

Best wishes

David Batali

For/Director General & Public Utilities Government
Directorate of Environmental affairs
Ministry of Housing, Physical planning & Environment
GOSS, Juba



CC:

1. D/G for Environment, MHPP&E. Juba
2. Anyier Deborah