

## SLUM IMPROVEMENT IN THE KUMASI METROPOLIS, GHANA

### - A REVIEW OF APPROACHES AND RESULTS

Clifford Amoako

Department of Planning, Kwame Nkrumah University of Science and Technology, Ghana

Patrick Brandful Cobbinah

School of Environmental Sciences, Institute for Land, Water and Society, Charles Sturt University, Australia

#### ABSTRACT

The manifestations of slums in Ghanaian cities have raised questions about sustainable urban planning and management. This paper assesses the socio-economic and environmental characteristics of slums in selected suburbs in Kumasi, the second largest city in Ghana, and further examines the approaches that have been used over the past decade to control the proliferation of slums. The paper also assesses the environmental impacts of these approaches in dealing with slums. Using empirical data from the selected suburban communities and decentralised government institutions, the study outlines the characteristics and challenges of selected slum interventions in the Kumasi metropolis over the past decade. It is revealed that slum interventions in Kumasi focus on the *symptoms* of slums and are less sensitive to the environment. This paper therefore proposes solutions that address the root causes of slum development to ensure the creation of environmentally liveable, socially inclusive and sustainable urban environment.

**KEYWORDS:** Kumasi, Slums, Slum Dwellers, Sustainable Urban Planning, Urban Poverty, Urban Management

#### INTRODUCTION

Global statistics indicate that half of the world's population live in urban areas and this figure is estimated to reach 4.7 billion in 2030 with an increasing decline in rural population (UN Commission on Human Settlement Programme (UNCHS), 2008; United Nation Population Fund (UNFPA), 2007). This raises sustainability concerns such as high energy demand, waste management challenges and inadequate housing provision. The increasing growth of urban population especially in developing countries consequentially leads to the growth of urban slums (UNCHS, 2003), as about 60 percent of residents of cities in the developing countries live in slums (UNCHS, 1986). This situation has weakened city authorities' efforts in providing basic services such as housing for the urban population (Carter, 1981; Hardiman & Midgley, 1982). The rate and scale of slum development in many developing countries pose urban planning and management challenges to city authorities (UNCHS, 2003). Urban slums are characterised by deplorable living conditions with poor land use planning, inadequate social services, coupled with high levels of communicable diseases, and exposure to fire outbreaks, floods and violence (Agyarko-Oduro, 2009; Butala, VanRooyen & Patel, 2010).

Global efforts to improve living conditions of slum dwellers, as enshrined in the Millennium Development Goals (MDGs), are directed at ensuring a considerable improvement in the quality of lives of slum dwellers and increasing

access to water and basic sanitation (MDG 7, Targets 10 and 11) (UN Dept. of Economic and Social Affairs, 2008). Slum improvement projects in many developing countries have been ‘action oriented packages’ focusing on poverty with increased donor support (Harpham & Stephens, 1992) without focusing on the sustainability of the urban environment. Additionally, some developing countries have implemented slum upgrading, slum clearance and relocation as policy interventions in response to slums (Adarkwa & Post, 2001; Zwane & Kremer, 2007). By the mid-1970s, however, many governments in developing countries admitted their inability to meet the housing needs of their populations especially the low income groups through government public housing schemes (Skinner, Taylor & Wegehn, 1987). This situation coupled with lack of impact assessment mechanism has militated against slum improvement strategies and threatened the sustainability of many cities especially in Africa.

Although, the commitment to improve the conditions of urban slums is well enshrined in international conventions and national documents, the process of realizing this objective is fraught with problems (Gulyani & Bassett, 2008) and has been unsustainable. Slum interventions have been largely unsuccessful in many countries in Africa. This is due to the lack of recognition of slums as part of a city’s morphology by city authorities, and lack of security of tenure of slum dwellers are major causes of inadequate data on and unsustainable urban slum management in many developing countries (Nahiduzzaman, Baudouin, & Hasan, 2006). Slums are thus conveniently described as neglected parts of cities where housing and living conditions are appalling, with high population and housing densities, nasty and informal settlements with and/or without legal recognition or right (UNCHS, 2002). In Ghana, the emergence of slums are attributed to rapid growth of cities and the inability of successive urban governments to provide sufficient investment in sustainable housing and infrastructure to meet the demands of urban population (Adarkwa & Post, 2001).

Understanding sustainable development as meeting the needs of today’s generation without compromising on the needs of the future generation (World Commission on Environment & Development (WCED), 1987), this paper examines the implications of slum development to sustainable urban planning in the Kumasi metropolis. The paper provides answers to questions relating to the characteristics of slums in Kumasi, measures being employed to improve the environmental conditions of slum dwellers and proposed recommendations regarding sustainable slum improvement in urban areas of Ghana and other developing countries.

## **ENVIRONMENTAL AND SOCIO-ECONOMIC CHARACTERISTICS OF SLUM COMMUNITIES**

### **Understanding the Concept of Slum**

Generally, the term slum has been explained in relation to poor housing conditions and environment (Hutchinson, 1997; UNCHS, 2002), inadequate access to basic social services (Abrams, 1966), lack of rights and tenure to land and property (Rangwala, 2002; Waugh, 1995), as well as the concentration of low income groups in cities or urban areas (Srinivas, 1991). Slum, according to Hutchinson (1997), is a densely populated urban environment which is in a bad state of repairs and has inadequate services including poor sanitation, poor supply of electricity and irregular water supply to support its inhabitants.

Additionally, a slum is described as any human settlement which lacks anyone of the following indicators: access to water and sanitation; sufficient living area; housing with durable materials; non-hazardous location and tenure security (Turkstra & Raitelhuber, 2004). Slums are sometimes characterised by insecure residential status, overcrowding and

non compliance with planning and building regulations. The development of slums results from the inability of urban governance system to provide adequate housing and social services for its rapidly growing population. The underpinning principle of slum formation is the unsustainable planning and management of the urban environment by city authorities which results in poor conditions that characterise slum communities.

### **Causes and Characteristics of Slums**

Available literature demonstrates conclusively that slums result from interplay of causes and are characterised by rapid urbanisation due to rural-urban migration, urban poverty, inadequate urban housing development programmes, lack of enforcement of planning standards and regulations, and lack of repairs and maintenance (UNCHS, 2003; 1986). These causes have characterised the development of slums in many developing countries especially in Africa and Asia. The causes of slum formation are explored further in the following paragraphs.

Rapid rate of urbanisation resulting from rural-urban migration is a major contributing factor to slum development in developing countries. Due to the unsustainable planning and management, immigrants tend to congregate and seek accommodation from less desirable areas of the city. Most slums in cities of developing countries including Bogota in Colombia and Cairo in Egypt resulted from rapid population increase without a corresponding housing and social services provision (Jerome, 1990; UNCHS, 2003). The UNCHS (2003) indicates that Bogotá has seen sustained, rapid demographic growth through waves of rural-urban migration in the wake of general impoverishment and violence. This situation has resulted in the rapid expansion of the urban perimeter through illegal subdivisions, occupation and the development of marginal areas by immigrants. The situation in the Greater Cairo Metropolitan Area in Egypt is similar with about 40 percent of rural-urban migrants who perceive the city as a place where opportunities abound (Jerome, 1990). This situation has caused a mismatch in housing supply and demand, resulting in increasing slum development.

Another cause of the formation and existence of slums in developing countries is poverty (Hari, 2006). Poverty and housing deficit in rapidly growing cities are reasons for emergence of slums (World Bank, 2002). The meagre and unsteady incomes compel slum dwellers to poor housing with inadequate supporting social services. As result of the inefficient urban planning and management system especially in the areas of basic social services provision and employment and income generating activities, slum dwellers find it difficult to enjoy a decent living since they cannot afford high rent.

Inadequate urban housing supply coupled with increasing demand for housing in many developing countries propels the formation of slum (Durand-Lasserve, 1996). This situation has relegated many city dwellers to slums due to inadequate low cost and decent housing provision. A study by Durand-Lasserve (1996) in Zambia revealed that the slums of Lusaka owe their origins to the city authorities' neglect of providing low-cost public housing and concentration on short-sighted and unsustainable urban and housing policies, both during colonial and post independence times. Moreover, the absence of sufficient public housing caused a series of housing crises and an increased growth of unauthorized settlements in the urban areas.

Literature indicates that lack of enforcement of urban development and management regulations by city authorities have resulted in slum formation. Most city authorities in developing countries are overwhelmed by the rapid development of slums and the spread of informal settlements that their regulatory interventions are either too late or have failed to make any impact. Thus development control measures in Africa are often unable to direct and manage urban development due

to non-compliance of building laws by developers (Waugh, 2005). This situation coupled with building deterioration and over populated densities is a major cause of slum formation in urban areas. Accordingly, decent localities of urban areas experience slum formation when sustainable and preventive measures are delayed (Hiraskar, 1993).

Lack of repairs and housing maintenance also causes slum formation which is often ignored especially in developing countries. According to Hiraskar (1993) regular maintenance of old buildings in urban areas can be a major remedy to slum formation. However, issues of repairs and maintenance are foreign to many developing countries causing rapid decay and deterioration of buildings which affects the sustainability of the urban environment and consequently leads to slum development. These are mainly rented housing units within the run-down areas of the urban environment.

### **Physical and Socio-economic Manifestations of Slums**

Prevailing conditions in slum areas vary from place to place. However, slums are usually characterized by urban decay, high rates of poverty and unemployment. As indicated by Srinivas (1991), many slum dwellers employ themselves in the informal economy usually with low incomes. These include street vending, drug dealing, domestic work and other forms of home based economic activities. As a result, slums are identified as breeding grounds for social problems such as crime, drug addiction, alcoholism, high rates of mental illness and suicide. In many developing countries, slums are characterised by high rates of diseases due to insanitary conditions, malnutrition, and lack of basic health care services (Abrams, 1966).

Slums are manifested by poor physical and environmental features such as poor housing conditions, poor road conditions and networks, poor drainage facilities, and environmental pollution. The physical conditions of slums are manifested by dilapidated buildings and structures, overcrowding of people and structures with limited access to basic social services such as water and electricity (Rangwala, 2002). The plight of slum dwellers is worsened by the increasing difficulties in gaining access to affordable land (Rasna, 2003), which makes them resort of squatting and illegal occupation of unauthorised lands (nature reserves, access roads and areas liable to floods). This situation does not only threaten human habitation, but the ecological environment also.

Socially, slum dwellers are largely poor migrants and economic adventurers from neighbouring villages or countries in search of better economic opportunities. For example, Waugh (1995) describes slums in Singapore as unplanned zone within the city providing shelter for immigrants from neighbouring Asian countries. Again, slums are identified with low incomes, absence of occupational skills and qualifications, and poor housing. Hari (2006) argues that the increasing trend of rural-urban migration is making poverty more urbanised, and this increases the risk of homelessness especially among slum dwellers in developing countries. Slum dwellers are often minority and voiceless groups in urban areas. The interactions between poverty and insecure tenure in urban slums contribute to further deterioration of the economic situation of slum dwellers, leading to a vicious cycle whereby poverty leads to slum development and it inturn breeds more poverty (Hari, 2006). Despite, the unsustainable nature of slum communities, some writers, development organisations argue that slums tend to have very complex social relationship, as there is a friendly, intimate and close-knit community, reminiscent of that which exists in small towns and rural areas (Durand-Lasserve, 1996; Jerome, 1990; UNCHS, 2003).

### **TREND OF SLUM IMPROVEMENT APPROACHES AND CHALLENGES**

To ensure sustainable urban development, a number of slum improvement measures have been adopted and implemented over the last fifty years in many developing countries. These policy measures, according to Sietchiping (2005), include Laissez-Faire Attitude (1950s–1960s), Site and Service Scheme (1970s), Upgrading Strategies (1980s), Security of Tenure and Enabling Approach to Slums (1990s), and Cities without Slums Action Plan (2000s). The focus and challenges of these approaches are explained in the subsequent paragraphs.

In the 1950s and 1960s, urban slums were seen as an illegal and a temporary problem that could be overcome with minimal but conscious effort towards the management of the city. The construction of public housing for low income groups was undertaken to reduce the expansion and formation of slums. However, the management of projects was marred with corruption, aggravating slum conditions in many cities in developing countries. This intervention was not sustainable due to the difficulty in providing housing for the ever increasing low income population. This intervention contributed in creating more slums rather than serving as an antidote to slum because several low income populations moved from rural and peripheral areas to enjoy the new public housing provided by city authorities.

The 1970s was characterized by the ‘Site and Services Approach’. This involved policies, directed at the provision of basic social services, legal access to land and innovative access to credit, that were formulated and implemented in fighting urban slums. This approach required strong political will, improved local government structures, and community participation, which were lacking in many developing countries leading to the failure of this approach (Sietchiping, 2005). Additionally, low income slum dwellers found it difficult acquiring the serviced land and paying for the social services provided under this approach. This made approach unsustainable because these serviced areas ended up in the hands of middle and high income households.

Slum upgrading, according to Zwane and Kremer (2007), involves the provision of basic infrastructure for slum dwellers and the regularization of slum activities. This policy intervention includes the provision and supply of water at the household level, sanitation facilities (sewage, solid waste management), storm water drainage; access roads and street lighting. Slum upgrading programmes and projects involving all or some of the aforementioned interventions were implemented across cities of developing countries in the 1980s. These were aimed at improving slum communities and integrating them into the larger urban environment. However lack of community ownership and hence, lack of maintenance of infrastructural facilities provided coupled with inadequate urban services provision impeded most of these upgrading programmes.

The 1990s was characterized by the ‘Security of Tenure and Enabling Approach to Slums’. Integrated enabling policies that involved slum dwellers in the decision making process were employed to empower them in engaging city authorities to improve their conditions. These included formation of local associations to engage city authorities and other relevant institutions in regularising land tenure among slum dwellers. Unclear land tenure and ownership structures, inadequate support from city authorities, low capacity of slum dwellers and financial constraints crippled this approach particularly in Sub-Saharan Africa (UNCHS, 2003).

Attempts were made in the late 1990s and 2000s to create ‘cities without slums’. This approach allocates lands to slum dwellers in areas planned with adequate basic services. The major difference between this approach and the ‘site and service approach’ implemented in the 1970s was the relocation of slum dwellers to newly planned urban fringes. Thus, this approach involves moving slum communities to an environment planned for new settlements, and therefore requires

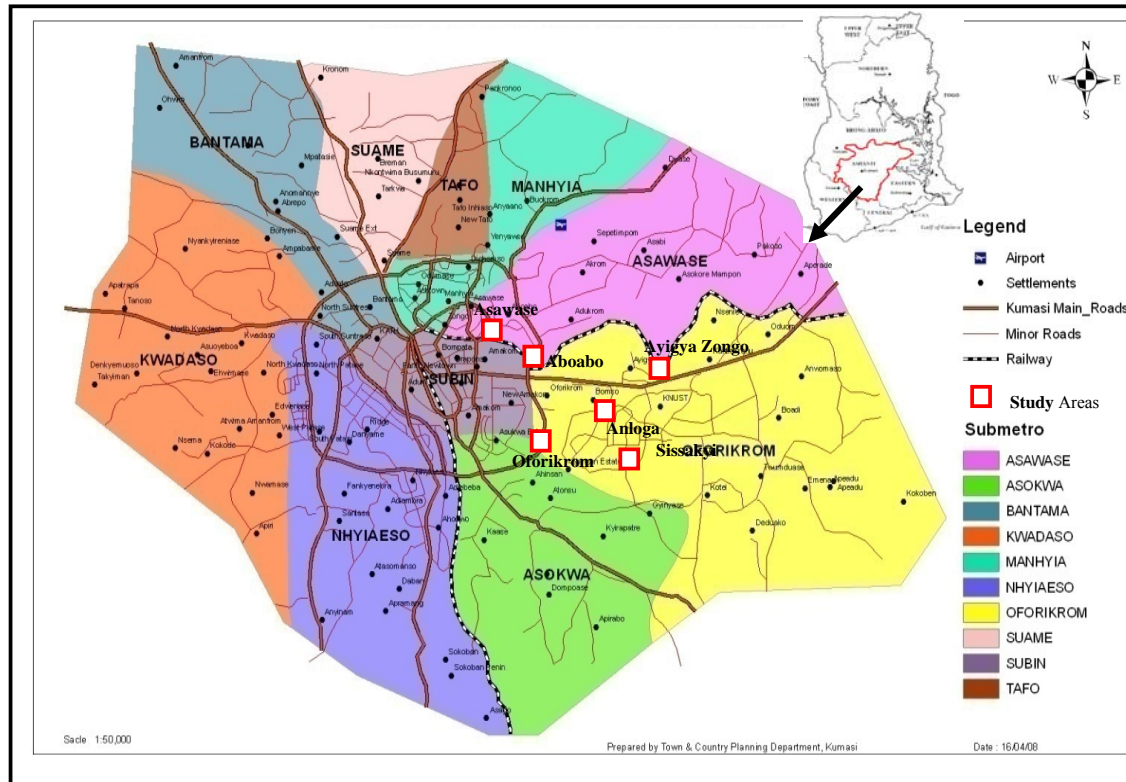
an agreement between the government and the slum dwellers (Sietchiping, 2005). However, the relocation of some new settlements far from places of work is compelling some slum dwellers to return to the slums. Again, the lack of participation of slum dwellers makes the relocation process delicate and unsustainable. The foregoing presents mixed results from the various slum improvement approaches implemented in the cities of developing countries which were fraught with sustainability challenges. The literature review thus provides theoretical basis for assessing the impacts of slum interventions in Kumasi.

## **STUDY CONTEXT AND METHODS**

### **Study Context**

Kumasi is the capital of the Ashanti region and the second largest city in Ghana. It has a land area of 250 square kilometres (km<sup>2</sup>) and is located in the transitional forest zone of Ghana. The unique centrality of Kumasi as a traversing point from all parts of the country and a commercial hub of Ghana attract migrants from all over the country which is contributing to increasing slum development (see Figure 1). With a population of 1,634,898 and an estimated growth rate of 5.4, Kumasi is the fastest growing city in Ghana (Millennium City Initiative (MCI), 2010; Cobbinah & Amoako, 2012). Kumasi's growth rate is unprecedented as it exceeds the regional and national annual population growth rates of 2.6 and 2.4 respectively (Ghana Statistical Service (GSS), 2011). With a housing growth rate of 8.6 percent per annum (Owusu-Ansah & O'Connor, 2010), Kumasi accommodates two-thirds of Ashanti region's population. A major result of this is the formation and expansion of slums in Kumasi. Figure 1 shows selected slum communities in the Kumasi metropolis.

**Figure 1: Location of Selected Slum Communities in the Sub-Metros of Kumasi**



Source: Kumasi Town and Country Planning Department, Kumasi (2008).

### Study Methods

The study is a result of an empirical data collected from six slum communities in Kumasi in 2010 (see Figure 1). It builds on an urban upgrading project ‘Urban Environmental Sanitation Project II’ implemented in 2008. The project was a follow-up to several interventions that were implemented in ‘bits and pieces’ in the early 2000s. Case study approach was used to understand the peculiarity and uniqueness of slum communities while comparing the slum conditions under a comparative study framework. Six slum communities were purposively sampled: Asawase, Aboabo, Oforikrom, Anloga, Ayigya Zongo and Sisaakyi. These communities constitute slum areas in Kumasi that have received some form of slum intervention(s) over the past decade. Additionally, seven decentralised institutions –Kumasi Metropolitan Assembly (KMA), Ghana Water Company (GWC), Electricity Company Ghana (ECG), Department of Urban Roads (DUR), Town and Country Planning Department (TCPD), Oforikrom and Asawase Sub-Metros- were purposively selected to give their perspectives on the state of slum development in Kumasi.

Using the following sampling model:  $n = N/1+N (\alpha)^2$  where  $n$  = sample size,  $N$ = sampling population and  $\alpha$  = margin of error (Miller & Brewer, 2003), 862 respondents were sampled with 0.08 margin of error from total households of 27609 in the six selected slum communities (see Table 1). Household surveys in the six selected communities, interviews with decentralised government institutions and observations were the techniques employed in collecting the data. The main

variables studied were household characteristics, access to utilities, housing conditions, slum control efforts and challenges associated with these interventions. Both quantitative and qualitative techniques were used to analyse the data employing statistical analysis such as tabulations, percentages and averages. A qualitative method of analysis was used to describe and interpret data mainly from the interviews, secondary data sources and observations.

**Table1: Sample Size of Selected Slum Communities in the Kumasi Metropolis**

No.	Community	Total No. of Households	Sample Size
1	Asawase	9,144	154
2	Aboabo	6,626	152
3	Oforikrom	7,694	153
4	Anloga	1,097	137
5	Ayigya Zongo	2553	147
6	Sisakyi	495	119
	<b>Total</b>	<b>27,609</b>	<b>862</b>

Source: Field Survey, 2010

## RESULTS AND DISCUSSIONS

### Environmental Conditions of Slum Communities in Kumasi

Environmentally, slum development in the case study communities is characterised by poor sanitation, sub-standard buildings and poor utility services provision among others which inhibit sustainable planning and management of these communities. While most of these manifestations overlap, others are peculiar to the various study communities as shown in Table 2.

**Table 2: Manifestations of Slums in the Sampled Communities**

No.	Study Areas	Environmental and Social Characteristics of Slums
1	Aboabo	Poor sanitation, large household sizes, poor provision of utility services, sub-standard buildings, congestion and unapproved extension of buildings.
2	Anloga	Poor urban planning system, blockage of main access road from the western by-pass from Anloga junction to Asokwa, flooding, poor sanitation, unapproved extensions of buildings, poor utility services provision.
3	Oforikrom	Cattle rearing in residential areas, poor sanitation, poor access roads, sub-standard buildings, and poor utility services provision.
4	Asawase	Animals and human cohabitation, poor utility services provision, poor sanitation, unapproved extension of buildings, sub-standard buildings, congestion and poor roads.
5.	Ayigya Zongo	Poor sanitation, large household sizes, poor provision of utility services, sub-standard buildings, congestion, extension of buildings
6.	Sisaakyi	Poor sanitation, large household sizes, poor provision of utility services, sub-standard buildings, congestion, extension of buildings

Source: Field Studies, May 2009

### Physical Housing Conditions



The study identified wood, mud, bricks, scrap materials and sandcrete blocks as the main building materials for construction in the slum communities. It was revealed in the survey that 37 percent of the houses were built with sandcrete blocks. However the remaining 63 percent of the houses were built with non-durable materials such as landcrete bricks (28%), wood (16%), mud (14%) and scrap materials (5%). About 95 percent of houses in the selected slum communities have their foundations exposed due to erosion and poor maintenance culture. Another common characteristic observed was leaking roofs as 76 percent of the respondents live in houses with weak and leaky roofs made of old corrugated iron sheets. This situation causes discomfort to the slum dwellers especially during rainy season. As a mitigation approach, the slum dwellers used materials such as car tyres and polythene bags to prevent the roof from ripping off and leaking during heavy thunderstorms.

#### *Environmental Sanitation in the Slum Communities*

The slum communities are characterised by degraded and abysmal environmental conditions with increasing problems of encroachment on unauthorised land especially on river banks and flood plains, and inadequate sanitation facilities leading to dumping of household waste into nearby water bodies. For example with a total household of 2553, Ayigya Zongo has only four public toilet facilities serving 67 percent of the slum dwellers. This is a common phenomenon in the six selected slum communities as 91 percent of the respondents expressed their dissatisfaction to the worsening state of sanitation in the communities. This situation puts pressure on the available facilities resulting in poor management and indiscriminate defecation especially in open spaces (nature reserves), and has been a major cause of diseases like cholera, typhoid and malaria in these communities. Additionally, considering the planning implications of the location of these toilet facilities (KVIP), it was noted that the KVIPs are located in close proximity to residential houses which contravenes Ghana planning standards and building regulations. This produces obnoxious stench and has adverse health implication on the slum dwellers who live close to these facilities.

Regarding liquid waste management, the predominant methods of disposal in these communities are gutters created by gullies (51%) and open surface (29%). This was more pronounced in Sisakyi where 92 percent of households use open space liquid waste disposal method, thus serving as a breeding ground for mosquitoes.

#### *Access Roads*

The slum communities are characterised by deteriorated access roads with narrow width and un-tarred. Only 35 percent of access roads in these communities are tarred and in good condition while the remaining are un-tarred, dusty and eroded with many potholes. Characteristic of the slum communities is encroachment on the right of way of roads. In Sisaakyi community for instance, all the proposed access roads have been encroached upon leaving only two, which are un-tarred and dusty with numerous potholes. The Department of Urban Roads-Kumasi emphasised on the difficulty of construction access roads in these communities due to the haphazard and unauthorised development. Efforts made to construct access roads by demolishing the unauthorised structures were marred by the payment of huge compensation leading to project delays and increasing construction cost.

However, Ayigya Zongo is currently benefiting from a road improvement project of the Asokore Mampong Affordable Housing Project by the Government of Ghana. Again, Asawase and Aboabo have relatively good roads because they benefited from the Government Urban II Programme implemented in 1985. Through this programme, many of the local

roads in these two communities were tarred. Sisaakyi and Oforikrom are yet to benefit from a World Bank Urban Roads Improvement Project.

### **Socio-economic Characteristics of Slums in Kumasi**

Slum dwellers in the selected communities are mainly rural-urban migrants. Many of them have very low educational attainments (30%) and employable skills (45%). The various characteristics of residents interviewed in the in the selected slum communities have been discussed the subsequent sub-sections.

#### *Origin and Ethnic Background*

It was revealed that 80 percent of the slum dwellers in the selected communities were migrants. Further investigations indicated that 22 percent of these migrated from the rural parts of the Ashanti region, while 58 percent migrated from the other parts of the country. Although Kumasi metropolis is dominated by the Asantes, the predominant ethnic group in the slum communities are mainly tribes of northern origin as they constitute 89 percent of the migrant population, except Sisaakyi and Anloga where Ewes form 82 percent of migrants. This reaffirms the assertion that slum communities serve as the first point of destination for most in- migrants (Abrams 1966; UNCHS 2003).

#### *Household Characteristics*

Despite inadequate social facilities and haphazard development in slum communities, slum households are relatively large with an average size of 6.0 compared with Kumasi metropolis household size of 5.1. Moreover, 96 percent of the households in the slum communities are headed by males with female household heads being widows or divorcees. On average, the slum communities have an occupancy rate of five (5) persons per room as 73 percent of households live in single rooms with only 2 percent living in three rooms. The occupancy rate in the slum communities is one of the worst in Ghana as it exceeds the acceptable occupancy rate of 2.5 persons per room.

#### *Security of Tenure*

Although literature and the study reveal that slum dwellers are mainly migrants, about 54 percent of the slum dwellers 'own' their houses with 24 percent being tenants as shown in Table 3. This is higher than the average house ownership in the Kumasi metropolis (33.6%). It must however be indicated that the houses in the slum communities are of low quality in locations without authorisation. It is therefore not surprising that 64 percent and 45 percent of the house owners in the slum communities are without building permit and land titles respectively. The land belongs to either the Stool, the State or has been declared a nature reserve zone.

**Table 3: Housing Ownership Characteristics in Selected Slum Communities**

Slum Area \ Ownership Type	Asawase	Aboabo	Oforikrom	Anloga	Ayigya Zongo	Sisakyi	Total	%
Owner	89	76	107	82	49	62	465	54
Free Occupancy	39	39	31	27	27	27	190	22
Tenant	26	37	15	28	71	30	207	24
<b>Total</b>	<b>154</b>	<b>152</b>	<b>153</b>	<b>137</b>	<b>147</b>	<b>119</b>	<b>862</b>	<b>100</b>

Source: Field Survey, February 2010

#### Provision of Utilities

Electricity supply in the slum communities is not reliable, though the study revealed 70 percent coverage in the slum communities. It was identified that only 26 percent of the inhabitants enjoy regular flow of electricity. This is because many houses are unauthorised and are not known to the utility companies. Consequentially, there is intermittent water supply in the slum communities with 47 percent of the slum dwellers experiencing irregular water supply, and 19 percent were identified to be lacking water supply. The irregular supply of water to the slum communities was as a result of the nature of housing in the slum communities which makes it difficult for every part of the communities to be served. This situation has compelled some slum dwellers to use other alternative sources of water supply. For example in Sisaakyi, 91 percent of the slum dwellers use wells as the main source of water supply, with only 9 percent of slum dwellers using pipe borne water. It was realised from the Ghana Water Company Limited (GWCL) that the low coverage of water distribution in these communities was due to lack of land titles by house owners (86%).

#### Occupational and Income Structure of the Slum Dwellers

It was realised in the slum communities that majority (54.2%) of the respondents are engaged in commercial activities with 21 percent of them being unemployed as shown in Table 4. An unemployment conditions are more pronounced in Sisaakyi and Anloga because of the relocation of the Anloga Carpentry Line to the Sokoban Wood Village. It must be emphasized that the percentage of unemployed population in the slum communities exceeds that of the national average of 13 percent as reported by the World Bank (2002).

**Table 4: Occupational Status of the Respondents**

Types of Economic Activities	All Sampled Communities	
	Frequency	Percentage of Respondents
Commerce	467	54.2
Service	103	12
Industry	93	10.8
Agric	10	1.2
Unemployed	189	21.8
<b>Total</b>	<b>862</b>	<b>100</b>

Source: Field Survey, February 2010

Espousing on the economic characteristics, 85 percent of the slum dwellers were employed by the informal sector undertaking activities such as woodwork, hairdressing, dressmaking, food selling and hawking, among others. This observation confirms the UNCHS (2003), assertion that most slum dwellers derive their livelihood from informal economic activities. The incomes of slum dwellers are very low with an average income of GH¢40 as shown in Table 5.

**Table 5: Monthly Income Level of Households in the Slum Communities**

Range of income (GH¢)	All Sampled Communities	
	Frequency	Percentage of Respondents
Less than 20	40	4.6
20-30	185	21.5
31-40	424	49.2
41-50	120	13.9
50+	93	10.8
<b>Total</b>	<b>862</b>	<b>100</b>

Source: Field Survey, February 2010.

The monthly income levels of the households in the slum communities were very low as compared to the national monthly minimum salary of GH¢93.3. As much as 89.2 percent of the slum dwellers are below the poverty line since they earn less than a dollar in a day. The low income earned by households in the slum communities' shows that slums serve as residents for low income employees (UNCHS, 2003). Their low levels of income have a direct bearing on the quality of housing units in these communities.

### **Slum Control Approaches and Impacts in the Kumasi Metropolis**

Many attempts have been made to manage and control the slum menace in Kumasi, and include measures initiated by KMA and her Development Partners, the Government of Ghana, and the Kumasi Sister City Partnerships as shown in Table 6. The study revealed that KMA has undertaken a number of projects to improve the conditions of slums in the Kumasi metropolis through collaborations with development partners such as the European Union, UNCHS, World Bank, USAID, and the African Development Fund (ADF). The nature, aims and challenges of the interventions are discussed in the following sub-sections

#### Urban Environmental Sanitation Programme (UESP) I and II

The UESP I and II are urban improvement strategies initiated by ADF, Metropolitan Assemblies, Government of Ghana and Nordic Development Fund (NDF) to improve the living condition in the urban areas. The programme started in 1992 and it is still being implemented in other cities in Ghana. The purpose of this programme was to improve urban environmental health sanitation, drainage, community infrastructure upgrading, vehicular access and solid waste management in a sustainable fashion with special emphasis on the poor in the five major cities of Ghana namely Accra, Sekondi-Takoradi, Kumasi, Tema and Tamale. Major areas of interventions included the construction of storm drainage, improvement in urban sanitation, solid waste management, community infrastructure development and institutional strengthening. The project seeks to achieve the following specific objectives at the end of 2009: (1) At least half the people living or working near the newly lined drains report reduced flooding; (2) At least 230,000 people and 70,000 children in school gain access to satisfactory latrines; (3) Refuse collection increased by at least 5% per year in each of

the five (5) project towns; (4) At least 11.5km of access roads are surfaced in low-income communities, with roadside drains; and (5) At least 60% of the serviceable waste management equipment is in operating condition in all Waste Management Departments (WMDs) by the end of the project. The Kumasi metropolis however benefited from only community infrastructure (road construction) and waste management. These interventions were however carried out in two slum communities (Aboabo and Asawase) as shown in Table 6. Efforts in improving waste management in the slum communities have been faced with many challenges due to lack of involvement and awareness creation among the slum dwellers. Moreover, the maintenance of community facilities provided have been left in the care of sub-metropolitan institutions which lack the logistical capacity to maintain them.

**Table 6: Some Slum Control Programmes in Slum Communities in Kumasi**

Programme	Duration	Slum Communities	Projects Implemented	Sustainability Challenges
Urban Environmental Sanitation Programme (UESP) I & II	1996-2002	Aboabo Asawase	Waste Management and Construction of Roads	Inadequate support from slum dwellers
(EU) Micro Projects	1996- 2002	Anloga,	Construction of Public Places of Convenience	Litigations, lack of coordination
Community Infrastructure Up-Grading	2000-2004	Asawase, Oforikrom, Anloga	Construction of public places of convenience, roads and drains, provision of water and electricity	Inadequate involvement of slum dwellers
Government Accountability Improvement Trust (GAIT)/KMA	2006-2009	Asawase	Community Education and Sensitization	Political interference
Urban Poverty Reduction Project (UPRP)	2008- 2011	Aboabo, Oforikrom, Anloga	Social Capital Investment	Inadequate education
U.NCHS Slum Up-Grading Facility (SUF)	2005-2009	Aboabo, Anloga, Oforikrom, Asawase	Eradication of Slums, Prevention of new ones	Lack of involvement of slum dwellers
Kumasi City Alliance Programme	2001-2010	Aboabo, Anloga, Oforikrom, Asawase, Anloga	schools, training of street children, sanitation	Over reliance on donor support
Kumasi City Development Strategy (KCDS)	2006-2020	Ayigya, Asawase, Aboabo, Sissakyi	Community involvement in decision making	Lack of coordination and collaboration

Source: Derived from KMA Development Planning Department, May 2009

#### European Union (EU) Micro Projects

The EU micro projects have been implemented in a number of districts in the Ashanti Region including Kumasi metropolis. The Kumasi metropolis has benefited from over 35 projects since 1996 under the EU Micro Projects Programme. The projects cover the educational, health, sanitation, income generation and water sectors of poor communities in the Kumasi metropolis including Anloga. The EU Micro projects intervention had brought a variety of developments to the beneficiary communities and had created employment avenues for a number of unemployed youth. However, litigations among community leaders, lack of coordination and commitment among implementing agencies have been major barriers to EU projects in slum communities in Kumasi.

### Community Infrastructure Upgrading

The Community Infrastructure Upgrading project is a component of the second phase of Urban Environmental Sanitation Project (UESP II) covering Ghana's five main cities. The Community Infrastructure Upgrading project seeks to develop basic infrastructure that would revitalize the socio-economic activities in depressed and poor communities in the Kumasi metropolis. The identified priority needs of the communities included roads, drainage, water supply, street/security lighting, public/school toilets and waste management facilities. The project is being managed by the Ghana Government and the World Bank, and seeks to give access to in-accessible areas by the construction of roads, extension of water supply distribution network to areas without water, and improvement in the environmental health and sanitation sectors. In Kumasi, the project was implemented in three phases: lots One and Two comprised of the construction of approximately 1.90 kilometers and 1.65 kilometers of single carriage bituminous single seal roads, with an average width of 6.0-7.0 meters. The third phase consisted of the installation of street lights in poor communities in the metropolis. Slum communities in Kumasi that benefitted from this project include Ayigya, Anloga, Oforikrom and Asawase

The Ghana Government's intervention in the slum communities have been in the area of road construction. The government through the Department of Urban Roads-Kumasi, as part of reducing increasing traffic congestion, has embarked on the construction of a 3 km Oforikrom-Anloga Junction-Asokwa portions forming the western by-pass of the ring road. Additionally, government's effort to improve slum conditions has been reflected in the relocation Anloga wood processing and creation of Wood Processing Village at Sokoban. Nonetheless, 89 percent of slum dwellers in the selected communities expressed dissatisfaction with government efforts in improving their living conditions.

### Government Accountability Improvement Trust (GAIT)

As part of efforts to strengthen the country's democratic processes, the GAIT, a Non Governmental Organisation, has been formed as a model for stimulating local level development and creating awareness in poor communities. The complexity of development issues coupled with government inability to address all development concerns gave birth to GAIT. The project educates local residents especially from poor communities to be conscious of development and governance issues and be involved in the political discourse in the country. In the Kumasi metropolis, the project spans from 2006-2009 and focused on Asawase sub metropolitan area, and is being funded by the United States Agency for International Development (USAID). The project has specific objectives of; strengthening District Assembly capacity for democratic governance; improving sectoral advocacy; and increasing community advocacy for and contribution to quality education. Slum dwellers in Asawase have educated on civic engagement and issues of good governance, however, political interference is a major obstacle inhibiting this project.

### The Kumasi City Alliance Programme

The Cities Alliance Concept refers to a sister-city relationship that Kumasi has established with a number of cities in the developed countries including Kumasi-Almere (Netherlands) Sister Cities Agreement, and the Kumasi-Atlanta Partnership (KAP) which is a partnership between Kumasi and Atlanta in the State of Georgia, United States of America. The research revealed that some slum communities including Asawase and Aboabo have benefited from community projects such as schools, training of street children, sanitation and waste management, and gender advocacy

programmes through the Kumasi-Almere relationship. The Kumasi-Atlanta partnership focused on strengthening the social and economic capacity of the Kumasi metropolis to reduce urban poverty. The partnership enabled Kumasi to utilise Atlanta's institutional knowledge and expertise in effectively expanding business, trade and employment in poor communities in the Kumasi metropolis including Oforikrom, Anloga and Aboabo, although the slum dwellers complain of inadequate intervention. Again, examining the characteristics of these slum communities (see Tables 2, 4 and 5) indicate that this intervention has had little impact.

#### *The Kumasi City Development Strategy (KCDS) 2006 – 2020*

The Kumasi City Development Strategy was borne out of the Cities Alliance Concept. The City Development Strategy (CDS) Programme has been designed with broad local participation and with strong links to national government and National Association of Local Governments (NALAG) that will enhance prospects for mobilizing internal and external funding for the CDS process and for a sustainable process resulting in coherent and implementable development plans. The project is in collaboration with the Cities Alliance, World Bank, aimed at drawing up a long development plan for Kumasi. The ultimate aim of the Kumasi Development Strategy is the alleviation of urban poverty targeting communities such as Asawase, Sisakyi, Anloga, Ayigya and Aboabo. Other objectives of this strategy include generating increased revenue for the city, improving city governance that allows a broad segment of the society to participate in decision-making and expanding opportunities for increasing social capital. Currently, the Kumasi City Development Strategy Process has gone through broad city consultations with all major stakeholders culminating in the profile of the KCDS which is the first phase. Although the project is at its development stage, inadequate coordination and collaboration among the various partners is delaying efforts to implement the project.

#### *Urban Poverty Reduction Project*

The Urban Poverty Reduction Project (UPRP) was introduced in 2004 as a second phase of the Social Investment Fund (SIF). The SIF intervention first started in the Subin Sub Metropolitan District Council in 2002 and later extended to cover the entire metropolis. The project was financed by African Development Fund and aimed at:

- Improving the livelihoods in urban and peri-urban zones through increased access to basic quality services and socio-economic infrastructure;
- Improving the socio-economic growth of poor urban settlements through better participatory management, job creation, public/private partnership and governance at local level; and
- Facilitating access to income generating activities through capacity building and strengthened urban Small Scale enterprises.

This a five-year project aimed at contributing to Ghana's efforts to achieving the Millennium Development Goals (MDGs) that calls for a reduction by half of the proportion of the poor living on less than a dollar a day. The implementation of the UPRP under SIF was to provide safeguards and empower individuals and households living under the extreme conditions of poverty to become responsible managers of their livelihood and claim their societal rights and entitlements. The UPRP has four sub-components namely: capacity building for pro-poor urban development and management; Social capital investment support; urban small scale enterprise development; and project management and coordination. The aim is to integrate the critically poor and non-viable households into the Ghana Poverty Reduction Strategy (GPRS) policy and budgeting process. The development and strengthening of social inclusion at local level

targeted people below the extreme poverty line to receive Social Inclusion Transfers (SIT) through a scheme that promotes the principles of social protection provision to the poorest as a “right”. In Kumasi, slum communities such as Oforikrom, Aboabo and Anloga benefited from this project through social capital investment. However, inadequate education and involvement of the slum dwellers impeded the implementation of the project.

#### The UN Habitat Slum Upgrading Facility

The Slum Upgrading Facility (SUF) of the U.N. Habitat in collaboration with the Cities Alliance is a project aimed at the eradication of slums and the prevention of the emergence of new ones. This project also forms part of the international commitment in reducing poverty (Millennium Development Goals). The central objective of SUF is to assist developing countries to mobilize domestic capital for their own slum and urban upgrading activities. The Aboabo, Anloga, Oforikrom and Asawase communities have benefitted from this facility. However, the neglect of local communities, and lack of coordination among other slum improvement interventions have resulted in counter-productive efforts.

However, the above mentioned interventions have had mixed impacts because of lack of involvement of slum dwellers, inadequate education and inadequate collaboration and coordination among the city management institutions. Additionally, these interventions have failed to address the underlying causes of slum development such as increasing migration and haphazard and unauthorized development. The nature, aims, successes and challenges of the intervention are discussed in the following sub-sections

#### **Controlling Slums in the Kumasi Metropolis: Planning and Management Challenges**

Although the study revealed that slum communities in Kumasi have received some form of interventions, these measures have achieved little successes, with increasing numbers and proportions of slum dwellers in the city. Thus the relationship between slum development and planning in Kumasi is similar to that of developing countries in general. It can be said that slums have developed through the failure of planning systems to address fundamental urban problems. For slums to be controlled, it is pertinent that planning in Ghana and in Kumasi respond to the following thematic issues:

#### Rural-Urban Migration

Planning in Ghana has failed to respond to the problem of rural urban migration into cities. As a result 80 percent of slum dwellers in Kumasi have their origins from rural areas in Ghana. Unless measures are put in place to curtail rural-urban migration, the slum menace will persist and escalate in the near future. Thus the push factors such as access-type disadvantages prevailing in rural areas must be addressed to overcome the challenge.

#### Accessibility and Provision of Services

This is a major manifestation of the shortcomings of urban planning in the Kumasi metropolis. Weak development control and lack of enforcement has resulted in encroachment of ‘no go areas’ such as nature reserve, and right of ways of roads. These make some of the roads non-motorable and further limits future expansion. The provision of social services such as electricity and water in the slum communities has become very difficult hence utility lines are laid within road reservations. Poor accessibility in these areas makes it difficult to track crimes due to poor numbering of houses as indicated by the Oforikrom Police Station. Weak enforcement of building laws and regulations in the slum



communities has resulted in haphazard and unauthorised development with no consideration for facilities like open space and sanitary areas.

#### Development Control and Security of Tenure

Lack of enforcement of laws and weak development control have resulted in unauthorized extension of buildings by slum dwellers and the accompanying erection of wooden structures which do not conform to the zoning regulations. According to the TCPD 92 percent and 50 percent of the housing stock in Sisaakyi and Ayigya Zongo respectively do not have development and building permits. This makes it difficult for city authorities to ensure orderly development. This problem of weak development control contributes to poor state of sanitation, difficulty in services provision and sub-standard buildings in these slum communities.

#### Urban Poverty

The study has confirmed the assertion that slums are the manifestations of poverty in urban areas (Hari, 2006). Using the human-based approach to development, it can be concluded that the lack of good environmental sanitation, inadequate water supply and inadequate social amenities (schools and health facilities), lack of good access roads and poor housing conditions are a manifestation of poverty. Accordingly, the low income of slum dwellers (GH¢40) indicates that economically, slum dwellers in Kumasi are poor.

### **POLICY RECOMMENDATIONS**

#### **Control of Rural-Urban Migration**

It has been established from both the theoretical and empirical perspectives that most slum dwellers are migrants from rural areas. In Kumasi for instance, the study revealed that 80 percent of slum dwellers are migrants from the Northern and Volta regions of Ghana. Measures should be put in place to check rural-urban migration by reducing access-type disadvantages through the provision of services and facilities. This will serve as a motivating factor in retaining people in the rural areas.

#### **Regularising and Legalising Security of Tenure**

KMA and TCPD as well as city engineers should conduct routine inspection to ascertain the number of buildings and informal activities without permits in the slum communities. They should also identify structures and activities that can be legalised and regularise these activities and buildings into development plans.

#### **Participatory Slum Upgrading as a tool for Poverty Reduction**

The provision of facilities and services in slums areas will improve the lives of slum dwellers in Kumasi. The GWC should be well resourced to extend potable water supply to slum communities. Department of Urban Roads should improve the major access roads in the slum communities. The Department should be empowered to take full control of all lands zoned for road construction and protect them from encroachers. Drains must be provided along the roads in the slum communities. The KMA Waste Management Department should provide skip bins in these slum communities. In addition, the Assembly should introduce regular collection and evacuation of refuse from these skip bins. The assembly

should promote household construction of toilet facilities through subsidies. This will motivate landlords to provide toilet facilities in their houses to help ease the pressure on the public toilet facilities.

The efforts made by the K.M.A to control slums are based on the GPRS II and the current National Medium Term Development Framework and mostly according to the dictates of donor partners. These national policies prescribe strategies that are deeply rooted in the traditional slum upgrading which lays emphasis on improving sanitation infrastructure facilities and water provision. The solutions the documents prescribe isolate poverty reduction and categorize them in other sectors. It specifically does not capture them under the slum upgrading strategies and prevention. The KMA should therefore introduce poverty reduction strategies in its upgrading programmes rather than concentrating solely on infrastructure improvement.

### **Institutional Strengthening and Collaborations**

Government should equip the KMA and TCDP with modern management tools like GIS to guide and control development in the metropolis. Government should also organise capacity building programmes to train the staff on the use of modern urban management tools. Also KMA and TCDP should be resourced with funds and personnel to enforce and monitor development in the slum communities effectively. The KMA should be empowered to ensure that houses are built with standard materials. There should be a co-ordination between utility providers and the institutions in charge of development control. The TCPD should facilitate the preparation of a composite plan to guide and promote infrastructure provision. The improvement of co-ordination will help reduce some of the problems faced by utility providers.

### **Planning for Secondary and Tertiary cities from a Regional and National Planning Approach**

The idea of secondary and tertiary cities is missing in the Ghanaian systems of planning. The idea of developing and strengthening secondary and tertiary cities which will act as intervening opportunities to attract or sieve migrant population to Accra and Kumasi should be sought after. This can be done through the creation of national and urban policies and enabling laws and infrastructure to support the secondary and tertiary cities. This will inevitably reduce and diffuse the impact of urbanization in the metropolis which is a major challenge in Ghana.

### **CONCLUSION**

Despite several attempts by city authorities, central government and development partners to improve slum conditions in Ghana, very little has been achieved in terms of sustainable urban planning and management. The study unearths increasing rural-urban migration and lack of enforcement of planning regulations and coordination among slum improvement interventions to be the major driving forces of slum proliferation in the Kumasi metropolis. Again, the sustainability of interventions in terms of community ownership, periodic maintenance regimes and effective management of facilities provided needs very much to be desired. Funding of slum intervention approaches has largely been donor supported as a result raises questions of financial sustainability of these projects especially when donor funding runs out. Community acceptance and understanding of slum intervention projects in Kumasi have also been a major challenge in ensuring the sustainability of these interventions as slum dwellers are not involved. Accordingly, slum communities in Kumasi are exposed to physical, socio-economic and health hazards as a result of poor quality housing, lack of land titles, inadequate social services provision and poor environmental sanitation conditions. However, these

causes and challenges of slums especially in Kumasi are fundamentally engineered by short sighted policies which focus solely on the symptoms of slums, and further lack sustainable development basis.

To combat slum development in the metropolis, the study proposes the creation of secondary and tertiary cities to absorb the increasing migrants from the rural communities; participatory slum upgrading programmes to ensure the involvement and contribution of slum dwellers to improving their living conditions; and building institutional capacity and collaboration as critical measures in curtailing slum proliferation in the Kumasi metropolis and other cities in Ghana. To ensure sustainable urban planning and management in slum communities and to prevent further development of slums, both the national and local governments in collaboration with the private and non-governmental organisations should initiate and undertake policies geared towards the provision of low cost environmentally friendly housing with locally made materials to accommodate slum dwellers and the middle income group. This has the tendency of avoiding the proliferation of slums as well as improving the quality of slum dwellings especially in cities of developing countries.

Sustainable urban planning and management thus requires the creation of cities which are functional in terms of promoting harmony among the various land uses, enhancing the aesthetics of the urban environment, achieving economy in the use of resources (land, water, human, finance, logistics), improving the safety of the urban dwellers, ensuring convenience in the urban setting as well as maintaining continual and sustainable growth. These requirements of sustainable urban planning are at variance with slum formation and development and are important in meeting the needs of both the current and future generation. City authorities especially in Africa should incorporate some, if not all, of these requirements into their plans, schemes and projects to ensure the creation of a sustainable and liveable urban environment.

## REFERENCES

- Abrams, C. (1966). *Squatter Settlements: The Problem and the Opportunity: Ideas and Methods Exchange*. Washington D.C.: Office of International Affairs Department of Housing and Urban Development.
- Adarkwa, K. and Post, J. (ed.) (2001). *The Fate of the Tree: Planning and Managing the Development of Kumasi*. Accra: Woeli Publishing Services.
- Agyarko- Oduro, F. (2009). Slum Upgrading and Prevention - The Time to Act is Now in *Urbanisation and Decentralisation*. <http://www.modernghana.com> (Accessed on 7<sup>th</sup> June, 2009).
- Butala, N. M., VanRooyen, M. J. and Patel, R. B. (2010). Improved Health Outcomes in Urban Slums through Infrastructure Upgrading. *Social Science & Medicine* 71, pp. 935-940
- Carr, M. (1987). *Pattern, Process and Change in Human Geography*. London: Macmillan Education Ltd.
- Carter, H. (1981). *The Study of Urban Geography*. Australia: Edward Arnold Publishers Ltd.
- Clark, D. (1982). *Urban Geography; An Introductory Guide*. London: Croom Helm.
- Cobbinah, P. B. and Amoako, C. (2012). Urban Sprawl and the Loss of Peri-Urban Land in Kumasi, Ghana. *International Journal of Social and Human Sciences* 6(2012). 388-397
- Cox, K. R. (1939). *Man, Location and Behaviour*. New York: John Wiley & Son Inc.
- Durand-Lasserve, A. (1996). *Regulazition and Integration of Informal Settlements: Lessons from Experience*. UNDP/UNCHS/World Bank-UMP, Nairobi.
- Ghana Statistical Service (2000). *Population and Housing Census Report*. Kumasi: Author.

- Ghana Statistical Service (2011). The 2010 Population and Housing Census- Provisional Results- Summary of Findings. Accra: Author. (Released on 3<sup>rd</sup> February, 2011)
- Gulyani, S. and Bassett, E. (2008). The Living Conditions Diamond: A Framework for Assessing Quality. *AFTUI Working Paper*. Washington DC: The World Bank.
- Gyabaah, N. K. (2008). *Urbanisation Processes–Environmental and Health Effects in Africa* <http://www.populationenvironmentresearch.org/papers/Nsiah> (Accessed on Feb 2009)
- Hardiman, M. and Midgley, J. (1982). *The Social Dimensions of Development*. New Delhi: Sage Publications
- Harpham, T. and Stephen, C. (1992). Policy Directions in Urban Health in Developing Countries-The Slum Improvement Approach. *Soc. Sci. Med.* 35(2): 111-120.
- Hiraskar, G. K. (1993). *Fundamental of Town Planning*. New Delhi: Dhanpat Rai Publication (pvt) Ltd.
- Hutchinson, F. (1997). *Dictionary of Geography*. London: Brockhampton Press Ltd.
- Jerome, F. (1990). *Human Geography: Landscape of Human Activities (2<sup>nd</sup> ed)*. USA: WCB Publishers.
- Hari, S. (2006). *Poverty and Slums, Its Impact of Changing Economic Landscape*. South Asia: Analysis Groups Co Ltd.
- Mangin, W. (1967). *Squatter Settlements in Cities: Their Origin, Growth and Human Impact*. New York: Readings from Scientific American McMillan Co.
- Millennium Cities Initiative (MCI) (2010). A Water and Sanitation Needs Assessment for Kumasi, Ghana: compiled by Mourié Maoulidi. MCI Social Sector Working Paper Series No. 16/2010 (accessed on 20/04/2011) [http://mci.ei.columbia.edu/sitefiles/file/Kumasi%20Water%20Sanitation%20NA\\_VF %209\\_10.pdf](http://mci.ei.columbia.edu/sitefiles/file/Kumasi%20Water%20Sanitation%20NA_VF%209_10.pdf)
- Miller, R. L. and Brewer, J. D. (2003) *A – Z of Social Research*. London: SAGE Publication Ltd.
- Nahiduzzaman, K. M., Baudouin, A. and Hasan, M.U. (2006), The Myth and Reality of Housing the Urban Poor through Public Participation in Dhaka, *Acta Geographica- Trondheim, Series B*, No. 8, Department of Geography, NTNU, Norway
- Owusu-Ansah, J. K. and O'Connor, K. (2010). Housing Demand in the Urban Fringe around Kumasi, Ghana' *Journal of Housing and the Built Environment* 25 (1), 1-17.
- Rasna, W. (2003). Slum Housing: A Crisis for the Urban Poor in the Developing World. United Nations: *UN Chronicle*, December, 2003.
- Rangwala, S.C. (2002). *Town Planning (17<sup>th</sup> Ed.)*. New Delhi, India: Charotar Publishing House
- Sietchiping, R. K. (2005). *Urban Geography: An Introductory Analysis*. Oxford: Pergan Press.
- Skinner, R., Taylor, J. L. and Wegehn, E. A. (Eds) (1987). *Shelter Upgrading for the Urban Poor: Evaluation of Third World Experience*. Manila, Philippines: Island Publishing.
- Srinivas, H. (1991). Viability of Informal Credit to Finance Low-Income Housing: Case Study of Three Squatter Settlements in Bangalore, India. *Unpublished Master's Thesis*, Bangkok: Division of Human Settlements Development, Asian Institute of Technology
- Timberlake, L. (1991). *Africa in Crisis*. London: Earth Scan Publications Ltd.
- Turkstra, J. and Raitelhuber, M. (2004). *Urban Slum Monitoring*. Delhi: Sage Publication.
- United Nations Commission on Human Settlement (UNCHS) (2008). *UN-HABITAT Annual Report 2008*. (Accessed on 5<sup>th</sup> January, 2012) <http://www.unhabitat.org/pmss/getElectronicVersion.asp?nr%42670&alt%41>
- UNCHS (2003). *The Challenges of Slums; Global Report on Human Settlement*. London Sterling, VA: Earthscan Publications Ltd.

- UNCHS (2002). Defining Slums: Towards an Operational Definition for Measuring Slums. *Background Paper 2, Expert Group Meeting on Slum Indicators*, October. Nairobi
- UNCHS (1986). *Global Report on Human Settlements*. Nairobi: Author.
- UN Department of Economic and Social Affairs. (2008). *MDG Report 2008*. [http://mdgs.un.org/unsd/mdg/Resources/Static/Products/Progress2008/MDG\\_Report\\_2008\\_En.pdf](http://mdgs.un.org/unsd/mdg/Resources/Static/Products/Progress2008/MDG_Report_2008_En.pdf) (Accessed on 4<sup>th</sup> January, 2012).
- United Nations Population Fund (UNFPA), (2007). *State of the World Population 2007: Unleashing the Potential Of Urban Growth*. New York: UNFPA.
- UN Population Division (2001). *World Urban Forum*. Vancouver: TCG International.
- Waugh, D. (1995). *Geography: An Integrated Approach (2<sup>nd</sup> ed.)*. UK: Nelson House, Mayfield Road.
- World Bank, (2002). *Upgrading Low Income Urban Settlements Country Assessment Report*. Accra: Ghana Publishing Corporation.
- World Commission on Environment and Development (WCED), (1987). *Our Common Future*, Report of the Brundtland Commission. U.K: Oxford University Press
- Zwane, A. P., and Kremer, M. (2007). *What Works in Fighting Diarrheal Diseases in Developing Countries? A Critical Review*. Washington DC: World Bank Reserve Obs.

#### **AUTHORS' DETAILS**

Clifford Amoako is a lecturer and director of undergraduate studies at the Department of Planning, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, (e-mail: [camoako.cap@knust.edu.gh](mailto:camoako.cap@knust.edu.gh)).

Patrick Brandful Cobbinah is a PhD student with the Institute for Land, Water and Society, School of Environmental Sciences, Charles Sturt University, Albury-Wodonga Campus, P. O Box 789 Albury, NSW 2640 Australia (phone: +61 0412749960; e-mail: [pcobbinah@csu.edu.au](mailto:pcobbinah@csu.edu.au)).