

**INTEGRATING ENVIRONMENTAL ISSUES INTO URBAN
PLANNING AND MANAGEMENT:
THE CASE OF THE SUNYANI MUNICIPALITY.**

By

**EMMANUEL KAAVIELE TINSARI
BSc. (HONS) LAND ECONOMY**

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ABSTRACT

The modern trends in urban planning and management is to achieve sustainable development of urban areas, the study therefore looked at how environmental issues can best be put at the forefront of urban planning and management in the Sunyani Municipality. The study also looked at the modern trends in urban planning and management with respect to sustainable development and the current state of urban planning and management in the Sunyani Municipality and the problems that confront planning.

The study adopted the case study approach focusing on a specific geographic location to assess how environmental issues are integrated in planning and management of the Sunyani Municipality. The sources of data was basically from literature review, interviews, observation and questionnaires administered to the planning institutions in the area, the main focus was the Municipal Town and Country Planning Department (MT&CPD) and related institutions. An analytical framework for the study was also developed to direct the study and the tools for integration were also considered.

This study, has revealed that urban planning and management requires inter sectoral and interdisciplinary approach and the need for partnership in urban planning and management by all stakeholders. Urban planning and management institutions have been making efforts at achieving improved standards of planning in the face of several constraints that bedevil them.

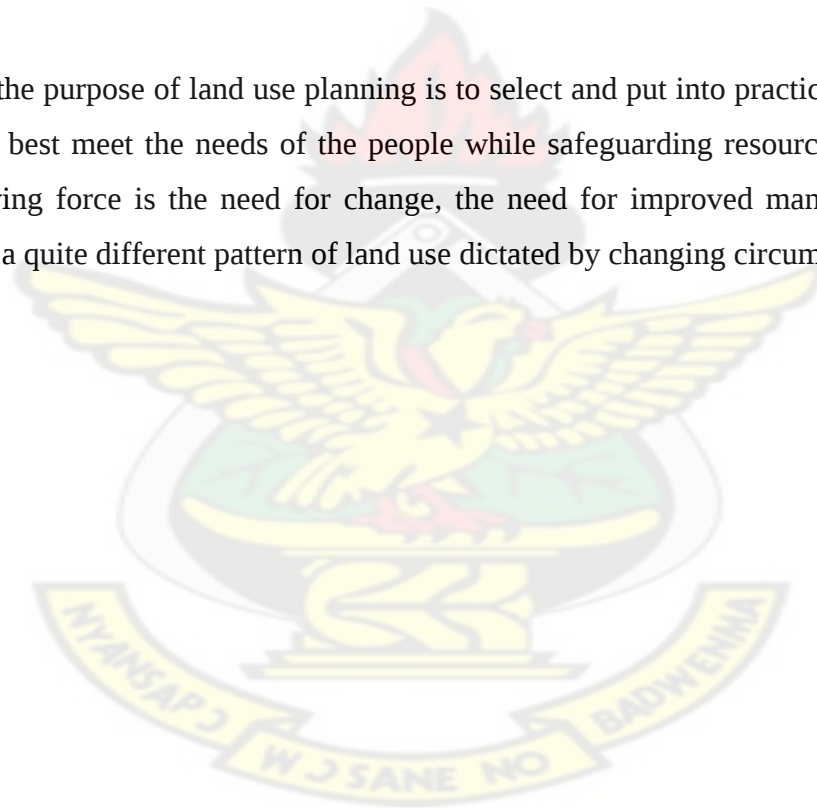
Major constraints facing these institutions and urban planning and management were identified to include inadequate legal framework for planning, inadequate logistics and funding, inadequate human resource especially professional and technical shortages, weak institutional linkages and inadequate spatial information.

The study clearly shows that moving from simple mechanisms to regulate land use to a healthy and sustainable urban planning process is not straightforward, but an appropriate

national planning framework that encourages an integrated approach and puts the quality of life and sustainable development high on the urban agenda.

From the foregoing, the study recommends among others sustainable urban planning and management with priority attention on the protection of the urban environment through the integration of environmental issues in urban planning and management. Planning laws should be revised to reflect current trends and provide the necessary framework for planning, the need for effective human resource development, strengthening of planning institutions, effective public participation in planning, and integrated urban planning and management.

Finally, the purpose of land use planning is to select and put into practice those land uses that will best meet the needs of the people while safeguarding resources for the future. The driving force is the need for change, the need for improved management and the need for a quite different pattern of land use dictated by changing circumstances.



DECLARATION

I hereby declare that this submission is my own work towards the MSc. in Development Policy and Planning and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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EMMANUEL K. TINSARI
(PG. 1089608)
(STUDENT NAME & ID)

.....
SIGNATURE

.....
DATE

CERTIFIED BY:

DR. K.O. AGYEMAN
(SUPERVISOR)

.....
SIGNATURE

.....
DATE

CERTIFIED BY:

DR. IMORO BRAIMAH
(HEAD OF DEPARTMENT)

.....
SIGNATURE

.....
DATE

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LIST OF ABBREVIATIONS

BIU	Building Inspectorate Unit
CA	Cities Alliance
CBD	Central Business District
CDS	City Development Strategy
eB	ecoBudget
ECP	Eco City Planning
EF	Ecological Footprint
EIA	Environmental Impact Assessment
EI	Executive Instrument
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Product
GHA	Ghana Highway Authority
GIS	Geographic Information Systems
GNFS	Ghana National Fire Service
GPRS II	Growth and Poverty Reduction Strategy
GTZ	German Agency for Technical Cooperation
GWCL	Ghana Water Company Limited
ICLEI	International Council for Local Environmental Initiatives
IDP	Integrated Development Planning
IMEP	Integrated Metropolitan Environmental Policy
LC	Lands Commission
LI	Legislative Instrument
MDGs	Millennium Development Goals
MCE	Municipal Chief Executive
MPCU	Municipal Planning Coordinating Unit
MT&CPD	Municipal Town and Country Planning Department
OECD	Organisation for Economic Cooperation and Development
PPPs	Policies, Plans, and Programmes
SD	Survey Department
SEA	Strategic Environmental Assessment
SMA	Sunyani Municipal Assembly
SPC	Statutory Planning Committee
SWOT	Strength, Weakness, Opportunities and Treats
T&CPD	Town and Country Planning Department
UN	United Nations
VRA	Volta River Authority

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Protecting and improving the urban environment is fast becoming a necessity rather than a luxury. Rapid urbanization in the developing world is threatening health, the environment, and urban productivity. Cities have become the powerhouse of economic growth, with 80 percent of Gross Domestic Product (GDP) growth in developing countries expected to have come from cities in the last decade, but the environmental implications of such growth need to be assessed and managed better (Bartone et al, 1994:1).

In Ghana all human settlements with a population of 5,000 and above are regarded as urban areas, the current growth rate of urban areas averages 3.4 per cent with Accra and Kumasi growing at 4.2 per cent and 5.2 per cent respectively (Afrane, 2006:17). The high growth rate of our urban centres and cities has enormous implication for their development and management in terms of waste management, slum avoidance, public health management, poverty reduction, employment generation and infrastructure provision and maintenance (ibid).

Urban centers in Ghana generate a large proportion of the economic activity and consume most of the country's natural resources and produce most of the pollution and waste. Urbanization can yield important social and economic benefits, but only if urbanization takes place within a rigorous planning framework, which integrates environmental issues with development.

In the search for answers, it has been found that effective urban planning can be used like a community road map to achieve efficient land use (Barlowe, 1998:485). Land use planning is the systematic assessment of land and water potential, alternatives for land

use and economic and social conditions in order to select and adopt the best land-use options. Its purpose therefore, is to select and put into practice those land uses that will best meet the needs of the people while safeguarding resources for the future. The driving force in planning is the need for change, the need for improved management or the need for a quite different pattern of land use dictated by changing circumstances (FAO, 1996:1).

Land use planning, therefore, aims to make the best use of limited resources by assessing present and future needs and systematically evaluating the land's ability to supply them; identifying and resolving conflicts between competing uses, between the needs of individuals and those of the community, and between the needs of the present generation and those of future generations; seeking sustainable options and choosing those that best meet identified needs; planning to bring about desired changes; and learning from experience (FAO, 1996:2).

The tool for achieving this in urban areas is through urban planning which shapes patterns of land use and the built environment in and around cities to solve and prevent challenges of urbanization, including providing shelter and other basic necessities of life, protecting and conserving the natural environment, and assuring equitable and efficient distribution of community resources, including land (Dresher 2001:3).

As Keeble (1969) puts it, planning as a complete process, requires all aspects and implications of the physical development of land to be taken into account and fitted into a pattern devised with the object of making a region or a community as a whole into an effective, and within limits, self contained organism and that the four characteristics of successful planning which are of prime importance are; firstly, the promotion of accessibility. Accessibility of homes to work, shops, schools and entertainment, of industry to sources of labour, power and raw materials and so on.

Secondly, the utilization of resources as economically as possible, so as to achieve the greatest possible measure of improvement with necessarily limited means. Thirdly, the separation of incompatible land uses from each other and the association of compatible or

mutually helpful uses and finally, the carrying out of all development in as visually pleasant a manner as is practicable. Thus, urban planning can not be done in isolation of the environment, it is necessary to adopt an integrated approach where serious consideration is taken of urban environmental issues.

The critical and most immediate environmental problems facing urban areas are the health impacts of urban pollution that originate from inadequate water, sanitation, drainage and solid waste services, poor urban and industrial waste management, and air pollution, especially from particulates (Bartone et al, 1994:1).

Important underlying or related issues typically involve inappropriate land uses, precarious housing, the depletion of water and forest resources, the degradation of environmentally fragile lands, the occupation of areas prone to flooding, overcrowding, degradation or loss of historical and cultural property, and noise pollution problems.

The object of urban planning is to achieve sustainable development of the urban area taking into consideration the needs of the present as well as future generations. In the urban environment, the natural environment is exhaustible, thus to plan for future generations requires that urban planning integrates environmental issues as identified in order to forestall future environmental problems.

1.2 Problem Statement

Urban land use decisions are critical determinants of environmental quality. Distortions in urban land markets and ineffective land management policies and practices in developing countries have resulted in: air pollution; degradation of environmentally fragile lands (wetlands and coastal resources); occupation of hazard-prone areas (steep slopes, flood plains, and vacant land adjacent to waste disposal sites); and the loss of cultural resources, open space, and prime agricultural land (Bartone et al, 1994:13).

According to Afrane (2006), the mission of urban planning is to fulfill society's interest in assuring conditions in which people can live in good health, and that the activities that

fall within the purview of urban planning include land use and transportation planning; waste treatment, recycling and reuse; water and sewage operations; energy saving measures for public and residential buildings and urban greening among others.

Thus, the basic rationale for undertaking town planning is to achieve; convenience and harmony in the use of space for all land uses; economy and efficiency in the use of resources and space; enhanced safety and adequate health standards in the space economy; and enhanced aesthetics and serenity in the built environment (Afrane, 2006:17).

However, it has been revealed that urban planning have failed in practice the world over because planning has mostly being over-ambitious, considering the capabilities of the administrative system to enforce their implementation. The reasons for this include the lack of a proper legal and administrative framework, inadequate technical skills and financial resources, unrealistic assumptions emanating from the foreign base of the plans and lack of participation by the population (UN-HABITAT, 1996:255).

It has also been suggested that traditional land-use systems generally do not adequately control the quality, pace or distributional effects of land development and that, even when a plan exists, development activity is too often disorganized. This is mostly because the stated goals are unrealistic, and because there is lack of co-ordination between planning and financing agencies, or because there is a shortage of trained personnel (ibid).

In Ghana, the established procedure for overseeing town planning involves the regulation and control of physical development and management as well as ensuring compliance with public health and sanitation requirement/standards through an approved development scheme, development permit, building permit, occupancy permit and user-conversion permit. The outcome of urban planning in Ghana has been a reversed development process whereas the approved process is land acquisition, planning, services, building and occupation. The process now is land acquisition, building,

occupation, services and planning hence a reversal of the approved process (Afrane, 2006:17).

Another problem of urban development in Ghana is unauthorised/unapproved developments resulting from the lack of effective planning and inadequate monitoring systems which have promoted the development of unapproved and unauthorised structures. This has led to the prevalence of slums, blight development, poor aesthetics and poor environmental sanitation (ibid).

These, coupled with the slow development of infrastructure resulting from poor planning practices and lack of adequate resources have combined to contribute immensely to relatively low development of social and economic infrastructure in our urban areas. The high population growth rates and the slow development of infrastructure leads to intense pressure on the existing services and facilities and this causes rapid deterioration, daunting management and maintenance problems and adverse environmental and social consequences (Afrane, 2006:17).

These problems of development control results in environmental issues such as poor sanitation and sewage problems, water pollution, municipal solid waste and storm water control within the urban setting. This also leads to environmental resource losses evident in ground water contamination and depletion due to unsustainable extraction linked to unclear property rights and treatment as free resource (Bartone et al, 1994:39).

The environmental hazards are from natural hazards resulting from poorly functioning land markets; ineffective land policies and poor construction practices. These hazards results in inadequate regulation and enforcement, low income settlements alongside hazardous activities. The position is now to find ways of incorporating such environmental considerations into policy decision making (Ibid).

The natural environment provides cities with countless ecosystem services. Some of these are so fundamental to urban liveability that they may seem invisible to urban managers:

air, water, open space, parks and greenbelts, biodiversity, forest and wetlands. Environmental resources are frequently taken for granted, rather than being utilised, enhanced, and invested in (Cities Alliance, 2007:4).

Urban Planning has been a major force protecting the environment and had provided an increasingly effective protection for the most valued features of the environment. In the recent past however, it is becoming evidently clear that the quality of the environment is deteriorating in many respects due to severe pressures on the environment and sustainable ways of managing them must be explored. These pressures include dramatic changes in land use in the urban area, increased volumes of waste produced and the need to find more efficient ways of using natural resources such as water and as well protecting the existing water bodies, open spaces and greenbelts.

Planning in the municipality is only seen in the zoning of land use without the provision of conditions that will preserve the natural environment as well as forestall the problems that have occurred in some of our communities due to lapses in planning. This is evident in the lack of storm and flood control systems in the Municipality. These, coupled with the deliberate degradation of the natural environment are all issues that need to be taken seriously in the planning of the town by the authorities.

These problems certainly pose major challenges for the planning and regulation of land use in the Municipality and the solutions to these problems will require new policies in many fields. The environmental issues observed in the municipality that has not been taken seriously in urban planning and management includes:

1. Inadequate solid waste management and disposal;
2. Development in flood prone areas and catchment areas of water bodies;
3. Inadequate storm water and flood control mechanism; and
4. Unauthorised developments and degradation of the natural environment.

1.3 Research Question

In view of the problem stated above the research sought to find answers to the following questions which indicate what the researcher wants to know.

1. What is the nature of urban planning in the Municipality?
2. What ecosystem services (forests, rivers, streams, greenbelts etc) are provided by the natural environment in the Municipality?
3. How can urban planning be used to effectively protect the varied ecosystem services provided by the natural environment?

1.4 The Objective of the Study

The overall objective of the study is to examine urban planning and management practice and how environmental issues are integrated into the process of planning and management of the Sunyani Municipality. The specific objectives however, of the study are to;

1. Examine the urban planning and management system in the Municipality;
2. Assess the nature of ecosystem services provided in the urban environment of the municipality;
3. Find out how the urban planning and management system in the municipality is used to protect the urban environment;
4. Examine the methods utilized in the municipality for integrating environmental issues into the urban planning and management process; and
5. Make recommendations for improving urban planning and management with much emphasis on environmental sustainability based on the findings of the study.

1.5 Scope of the Study

The focus of the study is the Sunyani Municipal area of the Brong Ahafo Region of Ghana. In respect of the content, the study focused on urban planning and management in the Municipality which is now in prospect in the peri-urban area taking into consideration the incorporation of environmental issues in the planning and management of the area. The physical development process in the area is also examined.

1.6 Significance of the Study

- The study would provide basic information and present much insight into the current state of urban planning and management as well as issues that relate to the urban environment.
- The information provided will thus, help central and local government planning and management institutions, environment related organizations and other environmentally conscious persons in making and reshaping policies relating to the urban environment and land use practices in newly urbanizing districts and the country at large.

1.7 Choice of Study Area

The research used a case study of the Sunyani Municipal Assembly of the Brong Ahafo Region of Ghana. The land management system of the area lays the foundation for effective urban planning and management. The lands in Sunyani have been vested in the President of the Republic of Ghana by virtue of Executive Instrument (E.I.) 46 of 1961, the lands are therefore managed by the government through the Lands Commission for and on behalf of the people, and this to all intents and purposes limits litigation with land in the area unlike other areas which militates against effective planning and management.

One reason for the vesting of the lands was to ensure effective planning of the area, for this reason, land use standards, zoning ordinances and compliance can be effectively enforced through monitoring and regulation. However, this is not the situation; the area still faces urban planning and environmental problems despite this framework which can be effectively used to enhance liveability of the area.

The increasing rate of urbanisation being experienced in the Sunyani Municipality demand that modern management techniques be adopted to make the Municipality devoid of environmental issues and other urban management problems, hence the choice of the area.

1.8 Limitations of the Study

The study has shown that even though urban planning can be used to protect the urban environment this has not been the case since in the face of planning, environmental issues still persist in the area, the extent of these issues could however, not be estimated because the researcher could not employ scientific methods to determine this due to time and budget constraint. The study has not also provided the rate of environmental degradation resulting from urban development in the Municipality; this is because environmental degradation though related to the study was not the subject for study.

These limitations notwithstanding, the multiple sources of data, the observation of planning and management in the area, and the approaches employed in gathering and analyzing the data, offer the information obtained a great degree of reliability.

1.9 Organisation of the Study

The study is presented in five chapters. Chapter one gives a general introduction to the study. This covers the background to the study, the problem statement, the research questions and objectives. The other subjects included in this chapter are the significance of the study, the scope of the study, choice of the study area, limitations of the study and the organisation of the study.

Chapter two is on the conceptual framework for integrating environment issues into urban planning and management. Chapter three reviews the research methodology employed in undertaking the study. The data analysis and discussion of results is the subject matter of chapter four while the final chapter presents the findings, policy recommendations and conclusion of the study.

CHAPTER TWO

CONCEPTUAL FRAMEWORK FOR INTEGRATING ENVIRONMENTAL ISSUES INTO URBAN PLANNING AND MANAGEMENT

This chapter is a review of the relevant literature that clearly explains the issues in the background to the study and the problem statement as discussed in the previous chapter. The chapter expatiates on critical issues that have been identified in chapter one and opens up the study by linking these issues to existing theory. The identified environmental issues that have been discussed briefly in chapter one, and urban planning and management generally have been elaborately discussed in this chapter.

This chapter – the conceptual framework for the study, therefore seeks to outline possible courses of action or to present a preferred approach to the study and serves as a type of intermediate theory that connects to all aspects of the study. The chapter, therefore, gives a review of relevant concepts which is intended to assist in understanding the research topic and provides in clear detail issues on the environment and urban planning and management.

2.1 Conceptual Framework for the Study

The significance of global policies on the environment and spatial planning has been growing since the 1990's. The most recent and well known are the Rio Declaration and the Programme of Action for Sustainable Development (Agenda 21), approved in 1992 at the United Nations conference in Rio, the Istanbul Declaration and the Habitat Agenda, approved in 1996 at the United Nations Conference in Istanbul on Human Settlements (Habitat II). Globally, environmental protection and long term management of resources are linked together with human rights, social and economic development. Integrated physical and land use planning are cited as necessary and practical instruments in actions for sustainable development.

Concerning sustainable development, the Rio Declaration indicates that human beings are at the centre of concerns for sustainable development and are entitled to a healthy and

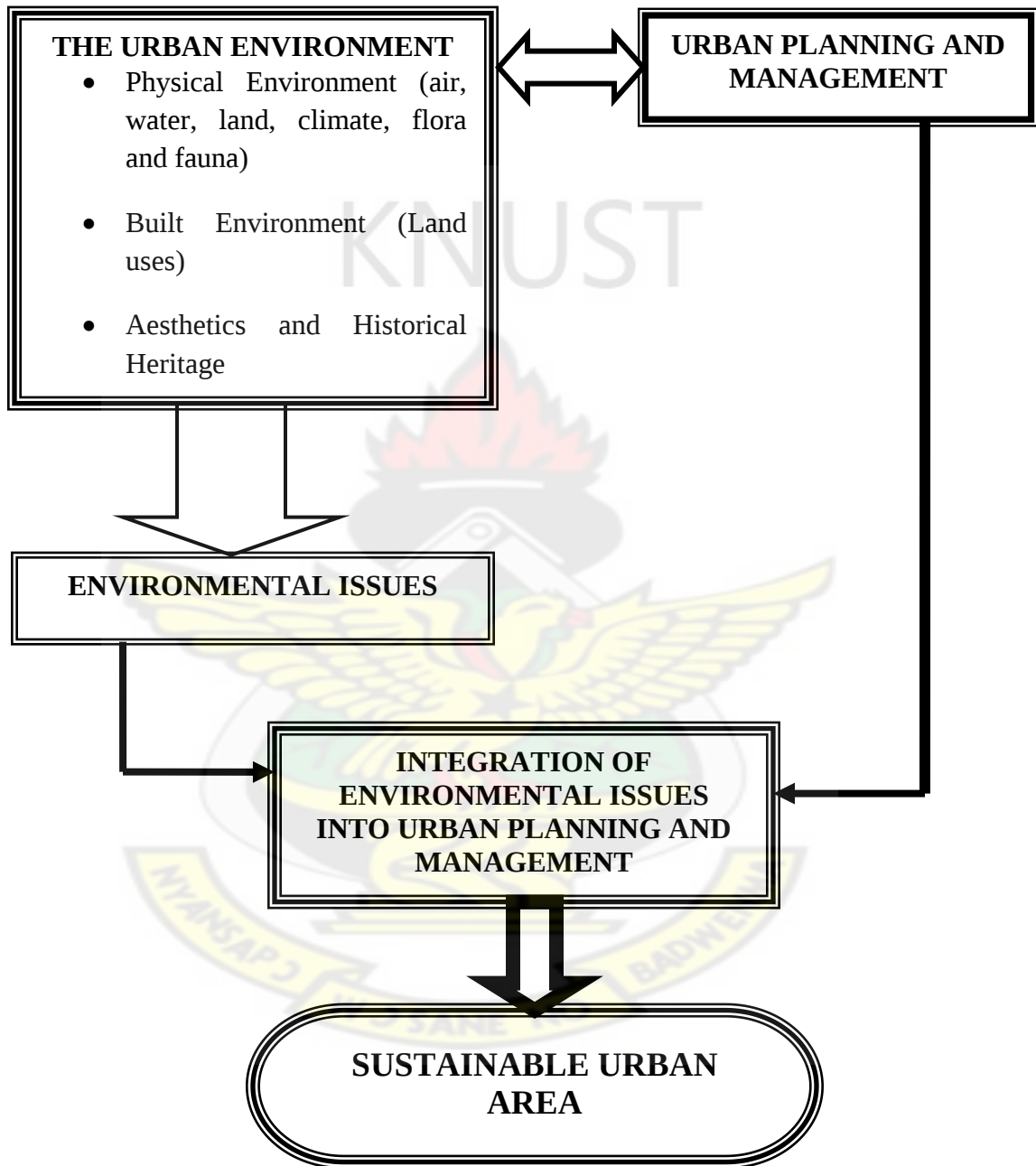
productive life in harmony with nature. Further on, it states that the right to development must be fulfilled so as to equitably meet the developmental and environmental needs of present and future generations. In order to support sustainable development, environmental protection constitutes an integral part of the development process and cannot be considered in isolation from it (Damsgaard and Niels, 1998:24).

Following from above is the UN Millennium Development Goals (MDG's) of 2000 specifically, MDG seven (7) which is to ensure environmental sustainability with a general target to integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resource. Within the context of this global agenda, Ghana in its Medium - Term Development Framework, Growth and Poverty Reduction Strategy (GPRS II) 2006 - 2009 has undertaken to focus on urban development, housing and slum upgrading with one major policy of promoting urban infrastructure development and provision of basic services.

The strategies to be used were to provide and implement strategic development plans for urban centres, enforce implementation of land use plans, coordinate all aspects of town development, ensure efficient and effective management of flood control and drainage systems and promote and facilitate private sector participation in flood control systems and coastal protection (GPRS II, 2005:53).

Land is viewed as a finite resource and expanding human requirements and economic activities place ever increasing pressures on land resources, creating competition and conflicts, and resulting in sub-optimal use of both land and land resources. Land is meant as space and land resources as resources tied to the ground or soil. If future human requirements are to be met in a sustainable manner, it is essential to resolve these conflicts and move towards more effective and efficient use of land and its resources (Damsgaard and Niels, 1998:24). Integrated spatial planning and management is an eminently practical way to achieve this goal.

Figure 2.1: Conceptual Framework for Integrating Environmental Issues into Urban Planning and Management.



Source: Author's construct, 2009.

Figure 2:1 above shows the organogram for integrating environmental issues resulting from the urban environment into urban planning and management. The urban environment is a patchwork of the physical environment (air, water, land, climate, flora and fauna), the built environment (Land uses), and the aesthetics and historical heritage of communities and the tool used for managing this urban environment is urban planning and management which shapes urban land uses and manages urban land, the natural environment, infrastructure, shelter and community facilities, social services and economic development.

Environmental issues such as environmental degradation, waste management problems, development in flood prone and catchment areas of water bodies and unauthorized developments among others are the by product of the urban environment. Therefore, in planning and management of the urban environment if environmental issues are consciously integrated in the process, then a sustainable urban area can be achieved devoid of these environmental problems.

2.2 Urban Management

Managing the affairs of a city, especially rapidly developing ones, is a complex task. It is never - ending and often a thankless job. But it has to be done if the needs of its residents - both present and future are to be met. To do so requires cities to exercise effective, efficient, equitable and economic management.

Local governments - whether they be towns, cities, metropolitan regions, or states - typically carry out the principal responsibility of managing six inter-related urban sectors: urban land, the natural environment, infrastructure, shelter and community facilities, social services (including poverty alleviation) and economic development (Leman, 1994:1).

Urban management refers to a proactive process of achieving priority objectives in a city. Urban development will be boosted or hindered depending on its institutional framework,

the financing of the city or town, and the physical planning and implementation of its development (ibid).

Urban management is concerned with the policies, plans, programmes, and practices that seek to ensure that population growth is matched by access to basic infrastructure, shelter, and employment. While such access will depend as much, if not more, on private initiatives and enterprise, these are critically affected by public sector policies and functions that only government can perform (Davey, 1993: vii-vi).

The performance of government is critical to the effective management of urban growth and the effectiveness of urban government is clearly dependent on a range of contextual factors: political stability, social cohesion, and economic buoyancy, to name only the most obvious. It also depends on the skills and motivations of its policymakers and the staff who serve them. But the widespread concern to change and improve the management arrangements suggests a belief that the structures, processes, and resource bases are themselves factors that contribute to effectiveness. Institutional characteristics of urban government play a part in determining its effectiveness, along with the people who run it and the environment within which it operates (ibid).

Urban Management is the activity of attempting to mobilise diverse resources to work in a co-operative manner in the fields of planning, programming and budgeting and implementing development and its operation and maintenance in order to achieve city development objectives (Davidson, 1996:445-462).

From the literature, Leman (1994) for instance, sees urban management as the management of six inter-related urban sectors, namely urban land, the natural environment, infrastructure, shelter and community facilities, social services (including poverty alleviation) and economic development. Davey (1993), on the other hand believes urban management has to do with policies, plans, programmes and practices that seek to ensure that population growth is matched with access to basic infrastructure, shelter and employment within the urban area, while Davidson (1996), thinks Urban

Management is the activity of attempting to mobilise diverse resources to work in a co-operative manner in the fields of planning, programming and budgeting and implementing development and its operation and maintenance in order to achieve city development objectives.

From all these definitions of urban management, to achieve city development objectives will require the identification of the cities problems and strategies towards resolving these problems within the medium to long term. Therefore, for the purpose of this study, Urban Management connotes the activities, strategies and practices that seek to ensure access to basic infrastructure, shelter and employment by the growing urban population.

2.3 Urban Planning

Urban Planning has been interchangeably called ‘Town and Country Planning’, ‘Land Use Planning’, and ‘City Planning ’or ‘Physical Plans’ and in some cases Spatial Planning. Keeble (1969) defines town planning as the art and science of ordering the use of land and the character and siting of buildings and communication routes so as to secure the maximum practicable degree of economy, convenience and beauty.

Keeble’s definition has given rise to four characteristics of successful town planning which are of prime importance; firstly, the promotion of accessibility: accessibility of homes to work, shop, school and entertainment, of industry to sources of labour, power and raw materials and so on; secondly, the employment of resources as economically as possible so as to achieve the greatest possible measure of improvement with necessarily limited means; thirdly, the separation of incompatible land uses from each other and the association of compatible or mutually helpful uses; and finally, the carrying out of all development in as visually pleasant a manner as is practicable.

Town planning is therefore not mere layout plans of residential, industrial, commercial or recreational activities, but a combination of components and elements which help to make the complete living, working and play environment which determines the quality of life of its inhabitants.

According to Chapin Jr. (1972), the objectives of land use planning include providing for the orderly growth and development of the region while preserving a measure of diversity among its parts; and allocation of land in the region, recognising that it may become a scarce resource to be conserved rather than wasted; and to satisfy the multiple needs of a society with increasing amounts of leisure time in general and preserve the amenities associated with the region's 'open character' in particular and also to maximize the opportunity for a wide range of choice in residential living arrangements in general, and serve the varying housing needs of the region's population in particular.

Other objectives of land use planning include, helping promote sound economic development and assure employment stability of both the region and the state; and finally, minimize conflicts with residential areas and facilitate the provision of required public services, particularly transportation and utilities (Chapin Jr., 1972:360).

Analysing the role of physical planning is vital in understanding how planning can help to achieve a balanced development. Generally, physical planning has the role of translating socio - economic and other policies into spatial and physical forms. To attain this strategy, all socio - economic policies have to be evaluated on its spatial and physical implications; emphasizing on the aspect of environmental quality in physical planning; providing facilities to ensure an equitable and higher standard of living for all; and physical planning policies take into consideration the latest development in science and technology, which in turn, can help achieve a higher quality of living.

Translating the above, physical planning therefore encompasses the development plan system, which consists of four major levels of planning, that is the National Physical Plan, the Structure Plan, the Local Plan and the Special Area Plan (Sukuran bin Taib and Siong, 2008:6). The other important aspect of physical planning is the fulfillment of national integration. Thus, and as a pre-requisite for the proper functioning of the planning system it is important that regional land policies should be integrated with that local land policy.

From the review of concepts generally, Keeble (1969) defines urban planning as an art and science of ordering the use of land, siting of buildings and communication routes with the aim of securing maximum practicable degree of economy, convenience and beauty. In the definition, the focal point is on an art and a science which sees to the ordering of land use, siting of buildings and communication routes, securing maximum practicable degree of economy, convenience and beauty in planning of urban areas.

Based on these essentials on planning and within the context of this study, Urban Planning is the art and science of organizing buildings and communication routes on land with the aim of achieving convenience, economy and aesthetics of urban areas.

2.3.1 Planning Goals

Planning for sustainable development is closely related to bridging issues of development with those of conservation. This emphasis is not new to spatial planning. However, it broadens and deepens the effort to balance planning for development with the conservation, management and use of natural resources and the protection of cultural heritage.

The goals of urban planning include; safeguarding private ownership and public interests; economising the use of land resources; improving accessibility; economising the exploitation of non-renewable resources; and conserving and protecting nature and cultural heritage from unintended consequences of development and from hazardous use of land (Damsgaard and Niels, 1998:7).

Other planning goals include promoting the functional and geographical co-ordination of infrastructure and the built environment; ensuring standards of sanitation, fire protection and safety; balancing the location of private and public services, reducing inequalities in standards of living due to differing development in prosperous and less prosperous regions and between centres and peripheries of growth; and harmonising sectoral activities spatially (ibid). Some of these goals are related largely to regional and national planning, while others are related mostly to local planning.

2.3.2 Planning Principles

Town planning is related to space in the contexts of locality, territory or region and tries to solve the spatial aspects of all problems in one locality. It follows that spatial planning *per se* is cross - sectoral and is closely connected to the functioning of communities.

The key principles of spatial planning are the founding of planning schemes on territories that shows functional, economic, administrative and/or cultural coherence - ranging from districts of public services and neighbourhoods to towns and even trans-national regions (Damsgaard and Niels, 1998:8).

Concentrating issues on present and future functioning, liveability and environmental quality of the territories in question and dividing land into zones of different kinds of land use in order to separate inconsistent kinds of land use, as well as regulating land use in order to create specific environmental qualities or reduce inconveniences provided by a certain kind of land use and finally, the regulation of the density of the built environment in order to provide public space and light and to provide general accessibility in the area (Damsgaard and Niels, 1998:9).

2.3.3. The Planning Process

Every land use planning project is different and objectives and local circumstances are extremely varied, in effect each plan will require a different treatment. However, a sequence of steps has been found useful as a guide with each step representing a specific activity or set of activities and their outputs provide information for subsequent steps (FAO 1996:13).

In a broad view, the steps of planning can be grouped into four main logical sequences with various steps being followed under each main step. The first step under the process is to identify the problem and this involves establishing goals and terms of reference. This is done by ascertaining the present situation; finding out the needs of the people and of the government; deciding on the land area to be covered; agreeing on the broad goals and specific objectives of the plan; and settling on the terms of reference for the plan.

This is then followed by organizing the work, here, the main activities are deciding on what needs to be done; identifying the activities needed and selecting the planning team; as well as drawing up a schedule of activities and outputs; then ensuring that everyone who may be affected by the plan, or will contribute to it, is consulted. This step is then followed by analysing the problems. This involves studying the existing land-use situation, including in the field; talking to the land users and finding out their needs and views; identify the problems and analyse their causes; and also identify constraints to change.

The second major step is to determine what alternative solutions exist, and the steps are first to identify opportunities for change. Identify and draft a design for a range of land-use types that might achieve the goals of the plan; present these options for public discussion. This step is followed by evaluating land suitability. For each promising land-use type, establish the land requirements and match these with the properties of the land to establish physical land suitability.

This major step ends by appraising the alternatives: environmental, economic and social analysis. For each physically suitable combination of land use and land, assess the environmental, economic and social impacts, for the land users and for the community as a whole. List the consequences, favourable and unfavourable, of alternative courses of action.

Following from above, the next major step is a decision point where the planners decide which is the best alternative and prepares the plan accordingly. The first step at this stage is to choose the best option. Hold public and executive discussions of the viable options and their consequences. Based on these discussions and the above appraisal, decide which changes in land use should be made or worked towards.

Based on the above prepare the land-use plan. Make allocations or recommendations of the selected land uses for the chosen areas of land; make plans for appropriate land management; plan how the selected improvements are to be brought about and how the

plan is to be put into practice; draw up policy guidelines, prepare a budget and draft any necessary legislation; involve decision-makers, sectoral agencies and land users.

Finally, put the plan into action, see how it works and learn from this experience. This then involves implementing the plan. This could be done either directly within the planning process or, more likely, as a separate development project, put the plan into action; the planning team should work in conjunction with the implementing agencies and after this step monitor and revise the plan. Monitor the progress of the plan towards its goals; modify or revise the plan in the light of experience (FAO 1996:13).

2.3.4 Challenges of Urban Planning

The main approaches to urban planning essentially set out to document a finite long term plan which, once legally adopted, forms the basis for public sector infrastructure and services investment and a detailed system of land use regulation and control. A study of urban planning concluded that many urban plans fail in practice because they are over-ambitious, considering the capabilities of the administrative system to enforce their implementation. The reasons for this include the lack of a proper legal and administrative framework, inadequate technical skills and financial resources, unrealistic assumptions emanating from the foreign base of the plans and lack of participation by the population (UN-HABITAT, 1996:255).

It has also been suggested that traditional land-use systems generally do not adequately control the quality, pace or distributional effects of land development and that, even when a plan exists, development activity is too often disorganized. This is mostly because the stated goals are unrealistic, and because there is lack of co-ordination between planning and financing agencies, or because there is a shortage of trained personnel.

In addition, the institutional capacity of many countries to absorb change is usually disproportionately small compared with the level of their aspirations. The analogy of the master plan as a building 'blueprint' has often been stressed. Implementation of such plans assumes the involvement of formal organizations in the residential, commercial and

industrial sectors through processes of institutional bargaining, where the rules of the game are known and development is meant to conform to set procedures, planning/building applications, development briefs, and public hearings (UN-HABITAT, 1996:255).

2.4 The Urban Environment

The urban environment, the physical environment in urban areas, is a complex mix of natural elements (including air, water, land, climate, flora and fauna) and the built environment (i.e. a physical environment constructed or modified for human habitation and activity encompassing buildings, infrastructure and urban open spaces). Its quality is much influenced by its geographical setting; the scale and nature of human activities and structures within it; the wastes, emissions and environmental impacts that these generate; and the competence and accountability of the institutions elected, appointed or delegated to manage it (OECD, 1996:5).

A city's built environment also includes its aesthetic and historical heritage. The architecture, site layout and the form given to private and public open space often give visible form to important historical or contemporary values. This heritage often includes forms of buildings and designs of neighbourhoods and public spaces that respond to local climatic conditions as building designs, the materials used and the organization of public and private spaces help to moderate extreme temperatures, provide protection from rain and wind and, where needed, limit risks from extreme weather events and natural disasters.

The physical environment in urban areas is also influenced by and often intimately related to social components such as the values, behaviour, laws and traditions of the residents. In recent years, more attention has been given to such aspects - for instance in the discussions of social capital. The physical environment also influences human behaviour and social relations - and it can include many characteristics much valued by most of or all of the inhabitants which are not easily understood by government agencies,

especially those whose policies and actions give little scope for citizen participation (ibid).

2.5 Environmental Issues

The most critical urban environmental concerns in developing countries include problems related to access to basic environmental infrastructure and services, pollution from urban wastes and emissions, loss or destruction of natural and cultural resources, and exposure of urban populations to natural and man-made hazards (Bartone et al, 1994:25).

These problems are caused in large part by lack of public and political awareness, inadequate governance, inefficient and inadequate economic and regulatory policies, and insufficient knowledge and information. While most cities in developing countries share some of these common problems, the specific environmental concerns of each urban area are different, depending on their economic status, the prevalence of urban poverty and unequal access to urban services, and other factors (ibid).

The problems that relate to access to basic environmental infrastructure and services has been defined to include sanitation and sewerage, municipal solid waste and storm water control within the urban setting. Pollution from urban wastes and emissions comes in the form of water pollution and energy use.

Environmental resource losses is evident in ground water contamination and depletion as a result of unsustainable extraction linked to unclear property rights and treatment as free resource, land and ecosystem degradation as a result of low-income settlements "pushed" onto fragile lands by lack of access to affordable serviced lands and lack of controls over damaging economic activities and finally the loss of cultural and historical property (Bartone et al, 1994:39).

In terms of Environmental hazards, the environmental issues are seen in natural hazards resulting from poorly functioning land markets; ineffective land policies and poor construction practices. Man-made hazards also result in inadequate regulation and

enforcement; low-income settlements alongside hazardous activities. The position is now to find ways of incorporating such environmental considerations into policy decision making and several instruments have been designed accordingly.

Access to basic environmental infrastructure and services, pollution from urban waste and emissions, loss or destruction of natural and cultural resources, and exposure of urban populations to natural and man – made hazards have been identified in literature as environmental issues which translates into problems such as land and ecosystem degradation, urban waste management and disposal problems, soil erosion, deforestation, water resource degradation and depletion and human habitat degradation.

Environmental issues in the perspective of this study are the negative aspects of human activity on the biophysical environment manifesting in environmental and land degradation, waste management problems, development in flood prone and low lying areas and inconveniences inhabitants of the area.

2.6 The Concept of Sustainable Development

Land use planning and management today is at the forefront of the sustainability agenda. The way in which urban land is utilised can have a significant impact on the environment. In today's cities, land is utilised in a very concentrated manner, while land on the outskirts of cities is typically developed in a more spread out and lower density pattern.

Such land use patterns also adversely affect landscapes by consuming large tracts and natural habitats within and around cities. As the trend toward increasing urbanisation continues, governments must support environmentally sound land use policies and initiatives that promote sustainable urban planning and management. Urban land use has to be developed in a way that is both sensitive to human needs and minimises negative environmental impacts.

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It was in this

manner the idea of sustainable development was propagated by the Bruntland Commission in 1987.

Based on this basic idea, planning for sustainable development may be described as guiding the development of the present without compromising the needs of future generations and without promoting one single development goal to the detriment of other development goals. Planning for sustainable development is of a cross-sectoral nature intending to promote economic and social development while simultaneously ensuring the protection, use and conservation of the natural environment and cultural heritage (Damsgaard and Niels, 1998:6).

Sustainable development puts a high premium on the conservation of natural systems and the resource base on which all development depend. Issue of equity within the society at present and between the rich and the poor countries and a planning-horizon that takes into consideration the needs and aspirations of the current and future generations is given prime attention. It requires an integration of environmental and socio-economic considerations in decision making.

The whole idea of sustainable development is based on the premise that, development meets the needs of the present without compromising the ability of future generations to meet their own needs, and also without promoting one single development goal to the detriment of other development goals. Sustainable development puts premium on the conservation of natural systems and the resource base on which all development depends (Ibid).

Sustainable development in the context of this study, is the promotion of initiatives that can be taken to ensure that urban areas which are the subject matter of urban planning and management are planned in a coherent manner taking into consideration urban environmental issues in the development of towns which are well planned, managed and capable of being passed on to future generations.

2.7 Urban Planning in Ghana

The idea of town planning in Ghana started in the Governor Guggisberg era when he, a surveyor tried to survey the big towns in Ghana to ensure orderly development of the country. The Town and Country Planning Ordinance No. 13 of 1945 (CAP 84) and its subsequent amendment by Ordinance 36 of 1947 and the Town and Country Planning Amendments Act of 1960, established the Town and Country Planning Office in Ghana and defined its mandate. The Town and Country Planning Department is responsible for planning physical development within Ghana.

The Town and Country Planning Department Ordinance 1945 (CAP 84) governs the activities of the department and the ordinance defines the departments statutory functions to include declaration of planning area, preparation and approval of schemes, execution of schemes and compensation and betterment.

However, recent developments has placed the department under the District, Municipal and Metropolitan Assemblies within the new local government system as provided by the Local Government Act, 1993 (Act 462) as part of government's decentralization policy. Sections of the Local Government Act, 1993 (Act 462) integrate with the National Development Planning (Systems) Act, 1994 (Act 480) to constitute the prevailing planning legislation for regulating the development of land and human settlements. These Acts govern the activities of the department while the National Building Regulations of 1996, Legislative Instrument (L.I.) 1630 set standards for structural and zoning requirements.

At the level of the District, Municipal and Metropolitan Assemblies, the department has responsibility for spatial planning and development control and works in collaboration with the Assemblies. The functions of the department at that level includes preparation of land use plans (structure plans) to direct and guide the growth and sustainable development of human settlements in the district, assessment of zoning status of lands and proposal of re-zoning where necessary, and co-ordination of the diverse physical

developments promoted by departments, agencies of government and private developers (Asiama, 2004:15).

Other functions are the administration of land use management procedures in settlements and channeling of day to day physical developments into efficient forms and sound environmental places of residence, work and recreation, processing of development/building permit application documents for consideration by the Statutory Planning Committees and creating awareness about the need to obtain planning and development permits, as well as the right procedure to use.

The Town and Country Planning Department is by statute required to co-ordinate with the Lands Commission, Survey Department, and the Building Inspectorate Unit under the Assembly's Work's Department. The department co-ordinates with the Lands Commission to ensure that plans brought to the Commission by clients conform to the planning scheme of the area. This is to prevent multiple sales of lands as well as ensure strict adherence to the approved scheme.

The Survey Department undertakes surveys to establish spot heights of the area and to demarcate the area in question for division into plots and the department rely on this to locate suitable areas for utility lines, residential, commercial and other land uses. The Building Inspectorate Unit ensures that the developments are rightly located in the area in accordance with the zoning regulations with respect to the type of development earmarked in the various zones. This is to ensure that incompatible uses are not put together and is achieved through the use of the building permit system.

2.8 Summary

The objective of this chapter was to provide a review of relevant literature and concepts relating to the conceptual framework developed for this study. Key concepts which have been discussed include the conceptual framework for the study, urban planning and management, environmental issues, sustainable development, the concept sustainable development and urban planning in Ghana.

It is indicative that as a result of rapid urbanization, urban planning is now shifting focus to sustainable and accountable management of the urban environment to make it a liveable place for the present as well as future generations. The current situation calls for a new paradigm of urban planning which focuses on solving the current urban problems while minimizing the creation of new problems in the process. This position is supported by Cities Alliances (2007) in their publications where the clarions call is that urban areas should be made liveable for all generations, since the year 2007 marks a watershed in human history, when for the first time, half of the world's population is living in cities.

Since traditional planning practices have been left behind by the pace of urban change, the new paradigm means planning should be proactive, focused on sustainability, and making the connections between people, economic opportunity and the environment. This paradigm seeks to enhance quality of life in human settlements focusing on sustainability, integrated planning, integrating planning with budgets, planning with partners, access to land and using appropriate planning tools. This position is espoused by the FAO (1996), that planning should be comprehensive, taking into consideration all aspects of the urban environment.

Current development trends, international protocols and best practices the world over puts emphasis on the sustainable utilization of all resources, to achieve this in urban development there is the need for innovative ways of planning the urban area, and since this is achieved through urban planning, there is therefore, the need that current urban planning and management practices respond to the dictates of the current trends and internationally best practices.

Indeed, most international agencies that has sustainability and concerns of the built environment as their focus (UN-HABITAT, Cities Alliance, GTZ and some donor agencies) are championing the sustainable use of our natural resources through proactive planning and management in all development projects including the planning of our towns and cities.

CHAPTER THREE

RESEARCH METHODOLOGY

The previous chapter reviewed literature on the study; it was intended to give an understanding of the research topic. The chapter provided in detail, issues on the urban environment, urban planning and management and sustainability of the urban environment. Chapter two also outlined urban planning and management in Ghana, and the focus of this chapter, therefore, is to outline the process of investigating the issues discussed in the previous chapter in the context of the Sunyani Municipality.

The chapter is presented in two parts; the first part looks at the processes used in conducting the study and includes the description of the research design approach, the sampling design and sample size determination and data sources and instruments for data collection. The final part of the chapter reviews modern instruments and tools used in integrating environmental issues into urban planning and management.

3.1 The Research Design Approach

The overall research design is a logical and strategic plan that defines how to get from 'here' to 'there', where 'here' may be defined as the initial set of research questions and 'there' as a set of conclusions concerning these questions i.e. answers and theories. It further links the study's conceptual positioning to the practical conduct of the research by translating and adjusting it to the specific research context and setting (Wamsley, 2007:41). The overall research design of this study is based on (qualitative) case study.

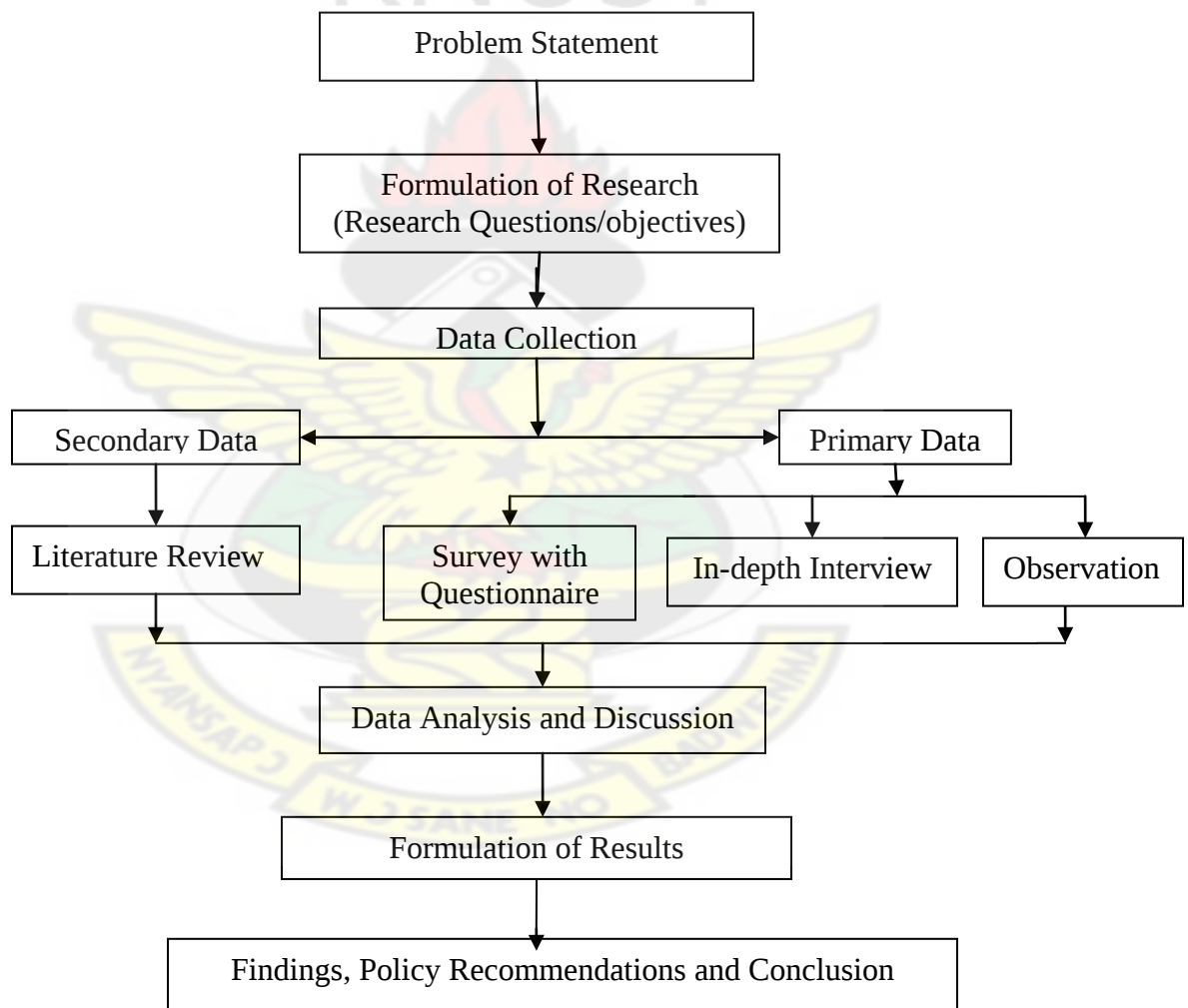
The first phase of the research focused mainly on identifying the research question. This involved reviewing extensive literature on urban planning and management and urban environmental issues so as to be able to set testable research questions which will be consistent with previous researches in the same field.

The second phase involved data collection from the field, this formed the primary source of data which was collected through the administration of questionnaire, conduct of

interviews and direct observation of events and activities related to the research topic. This was undertaken in the Sunyani Municipal area, the case study municipality.

The final phase entailed the analysis and interpretation of data collected from the primary and secondary sources, based on which findings and conclusions were drawn and the relevant policy recommendations made in respect of the subject investigated. The figure below illustrates the various stages in the process.

Figure 3.1: Research Design



Source: Author's construct, 2009.

3.1.1 Research Type and Strategy

The study is exploratory because it seeks to explore what is happening in the field of urban planning in the Sunyani Municipal area and to ask questions about the current practice. The research uses two strategies to answer the research questions. These are the survey, and case study strategies. The survey and case study strategies are used because the research seeks to answer the ‘what’ and ‘how’ research questions, the researcher has no control over actual behavioural events, and because the study focuses on the contemporary issue of the environment which has gained a lot of attention in the developing world.

The specific case of using a geographical area – the Sunyani Municipality has been used to illustrate the concept of integrating environmental issues into urban planning and management. The Case Study in this case has been defined as an exploration of a “bounded system” or a case over time through detailed, in-depth data collection involving multiple sources of information rich in context (Creswell, 1998:61). This study therefore, deals with detailed studies of a specific unit, in this case, urban planning and management and environmental issues through the use of in-depth interviews.

The strategy is appropriate for this research in terms of answering questions that aim primarily to (a) gain an understanding of the underlying reasons for an existing and contemporary phenomenon within its real-life context, where the boundaries between that phenomenon and its context are not clearly evident; (b) provide insight into the setting of related problems; and (c) generate possible ideas for solutions and recommendations that cannot a priori be foreseen (Yin, 2003) as cited by Wamsley (2007:42).

3.2 Sampling Design and Sample Size Determination

The subject of study led to the selection of a sample which was influenced by the issues of interest and their dynamics, respondents with the relevant information, knowledge and experience in the field of urban planning and management and the environment were selected.

The selected respondents were mainly urban planning and management institutions within the Sunyani Municipality. This was because there was no appropriate sample frame from which respondents could be selected, except from these institutions which could give the relevant information on the processes of the urban planning and management and how environmental issues were integrated into the process within the municipal area, eight respondents from five institutions were selected and interviewed as shown in table 3.1 below.

Table 3.1: Distribution of respondents in Sunyani Municipality

Institution	No. of Respondents	Data/information collected
MT&CPD	2	Urban planning & management process and practice, integration of environmental issues.
Lands Commission	1	Land management and administration
BIU	2	Development control, environmental issues
MPCU	1	Development planning, role in urban planning, environmental issues
EPA	1	Environmental issues and standards
Survey Department	1	Preparation of base maps, pillaring
TOTAL	8	

Source: Author's construct, 2009.

These respondents were selected using the purposive sampling technique. This is because in purposive sampling, the units of the sample are selected not by a random procedure, but are intentionally picked for study because of their characteristics or because they satisfy certain qualities which are not randomly distributed in the universe, but they are typical or they exhibit most of the characteristics of interest to the study.

Thus, in purposive sampling, judgement and knowledge of the characteristic of the units of the universe as to the object of the study is important where it is known that certain individual units, by their very characteristics, will provide more and better information on a particular subject than randomly selected units, then such units are purposively selected (Kumekpor, 2002:138).

3.3.1 Unit of Analysis

The unit of analysis which refers to the actual empirical units, objects and occurrences which must be observed or measured in order to study a particular phenomenon, and having defined the problem to be investigated, it was important to identify how the problem will be measured, this pointed out the key factor for decision making about the appropriate unit of analysis the researcher wanted to discuss and draw conclusions from at the end of the research.

The research was based on two main units of analysis, the unit of analysis was a review of urban planning and management in the municipality taking into consideration the processes and procedures, challenges and relevance of urban planning to city development and the other unit of analysis had to do with the urban environment, and how environmental considerations were incorporated into urban planning in the municipality and how these considerations were enforced.

3.4 Data Sources and Instruments for Data Collection

This is the stage of a research where plans were executed, the subjects approached and the information required for the study was gathered. Data collection in the case – study is accomplished by means of methods defined in the case study protocol. Such methods include the use of documents, archival records, interviews, observation and physical artifacts (Sarantakos, 1993:292).

Therefore, the primary source of data was from semi – structured interviews administered as a first step to gather data for the study; this facilitated interaction with respondents in a guided manner to enhance the collection of the required data. Primary data was collected through a fieldwork; the data was collected from the respondents as shown in table 3.1 above. The field survey was conducted personally during the second and third week of May, 2009, the first two days on the field was used to familiarise myself with the study area and the institutions with responsibility for urban planning and management. This was then followed by the interviews with the selected respondents over a period of eight days and complemented with observation of urban planning and management in the area.

The data collection methods were a combination of survey with questionnaire, in-depth interviews and observations. In-depth interviews were used to collect data from the respondents. Observations were carried alongside with the questionnaire administration. The researcher facilitated the interviews and observed any apparent contradictions of the respondents and took note of the planning conditions.

Use was also made of secondary sources of data, relevant existing literature relating to the study was collected and reviewed and the World Wide Web (internet) was consulted for relevant information and best practices as pertains in other jurisdictions.

The research is based on qualitative and quantitative data collected from planning and related institutions in the municipality. The purposive sampling method was used for the conduct of interviews on a wide range stakeholders; planning authorities, land sector agencies, and environmental agencies.

One of the strengths of the research being designed around case study is that this allows and necessitates the use and mix of many different techniques for collecting and analysing empirical data. The selection of the specific methods used was dictated by the research setting, the research's conceptual positioning and design, and the resulting data requirements (Wamsley, 2007:51).

The data collection methods selected for this research are described in the following sections. They include literature reviews, interviews, questionnaire administration, and observations. These methods were applied to discover: (a) the inter linkages between urban planning and management and environmental issues, (b) the current practices in the working fields of urban planning and management and the urban environment – and the relationships between them; and (c) the opportunities for overcoming existing challenges and gaps so as to increase the potential of urban planning to ensure urban sustainability.

3.4.1 Literature Review

Secondary data on the study, methodologies and international model cases were collected through review of literature from Text Books, Journals, Articles and working papers from Cities Alliances publications, the Libraries and the World Wide Web.

The review of literature was conducted constantly during the research process with the aim of identifying relevant past and present studies, research-related theories, appropriate research methods, and experts in the field.

3.4.2 Interviews

Interviews are usually one of the most important primary sources of case study information, especially as they are excellent tools for understanding complex phenomena, beliefs and attitudes in less well known research domains. Interviews were crucial because of the limited literature available on the specific topic of this research.

Most of the interviews were semi-structured – this is the type of interview generally used and recommended for case study research (Yin, 2003) as cited by Wamsley (2007). Semi-structured interviews are embedded in the contradictory context between qualitative interviews and structured interviews (i.e. questionnaires), and are based on the assumption that the relationship between researcher and interviewee is part of the research process. A consistent line of inquiry was pursued; the interviews appeared, in practice, to be guided conversations rather than structured queries.

3.4.3 Questionnaires

The interviews were based on questionnaires and since case studies involves seeking the in-depth opinion and perspectives of a small number of respondents, structured questionnaire were completely inappropriate but rather open – ended questions, adopting a descriptive approach was used for the study (Gray, 2007:187).

The questionnaires were used to collect information on the practice of urban planning and management in the Sunyani Municipality by institutions in charge of planning and

management of the Municipality. The questionnaires were also used to collect data on the geographic profile and environmental issues in the municipality as well as the extent to which these issues are integrated into urban planning and management in Sunyani.

3.4.4 Observation

Direct observation was of great importance to the case study and during the visits to the case study area, a range of aspects crucial to the research were observed. Examples of such aspects are the real-life context of the case; the way the area is planned; the degree of enforcement of planning regulations; success and/or failure factors; local relevance and acceptance of urban planning; urban environmental issues; physical conditions and layout of settlements; as well as existing urban environmental conditions.

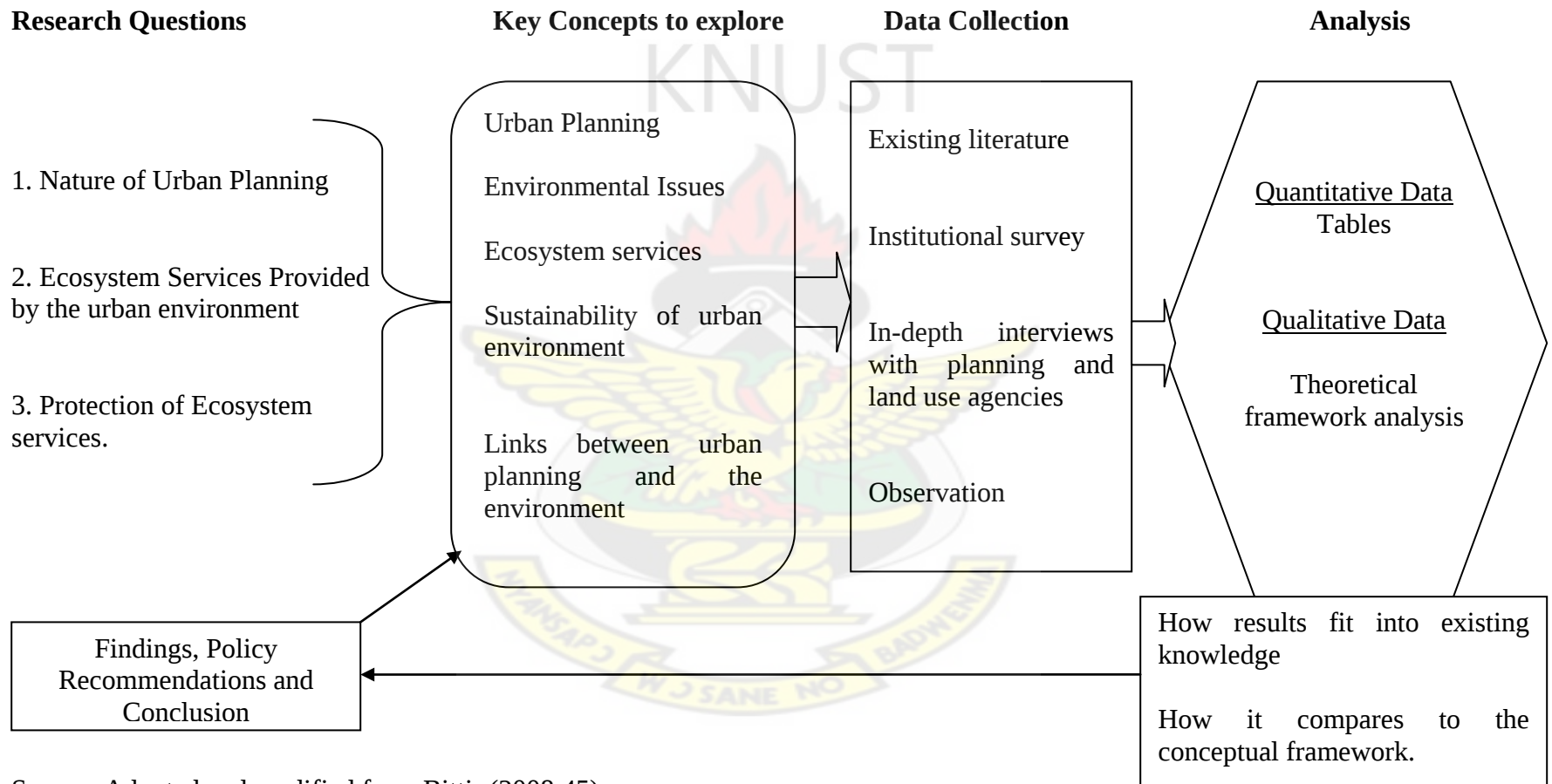
Observation was especially important for crosschecking/triangulating information from other sources, for instance, that obtained from interviewees who could overemphasize or downplayed their responses to the questions. The storage of the data gathered by observation was in the form of field notes and supported by photographs where necessary.

3.5 Data Analysis Techniques

After collecting the data, all questionnaires were cross checked and edited for mistakes. The analysis of data was to relate the current practice of urban planning and management with the modern and established trends of urban planning and management as identified in literature. Based on the data collected, the views on issues were described in a narrative by summarizing, describing, interpreting and reconciling the data with other qualitative data using the analytical framework as shown in figure 3.2 below and it used the research questions, the key issues explored, the data collection methods employed and this was then analysed to see how the data fitted into existing knowledge and how it compares with the conceptual framework developed, it was from this analysis that the findings, recommendations and conclusion were made. Some of the data collected through observation was presented in the form of photographs.

3.5.1 Analytical Framework

Figure 3.2: Analytical framework



Source: Adopted and modified from Bittir (2008:45)

3.5.2 Instruments for Environmental Integration

The Cities Alliance categorizes instruments that a city can use to integrate the environment into urban planning and management as policy instruments, process instruments, planning instruments and management instruments. Policy instruments provide guiding principles for urban decision-makers. Process instruments provide ways of doing something, steps that can be taken to reach a desired goal. Planning instruments offer a variety of methods by which urban development plans can be developed and implemented. Management instruments provide tools to direct and administer urban planning decisions. For the purpose of this study, Process and Planning Instruments have been discussed.

3.5.2.1 Process Instruments

Urban planning processes take many shapes and forms, from the top down and centralised to the highly participatory. Today, it is generally recognized that increasing the level of stakeholder participation in the planning process results in greater focus, relevance and enhances execution in urban planning strategies. The urban planning process can be used to build consensus, to develop horizontal cooperation, create new partnerships and used to prioritise issues and to create a vision or roadmap for the future (Cities Alliance, 2007:24 - 26).

- Visioning

A visioning conference brings together all stakeholder groups to produce a city vision. It is based on the theory that, by working together for a concentrated period, individuals with diverse backgrounds, knowledge, interests and responsibilities are able to take a holistic view of the issues, recognise that their concerns are linked, and produce a common idea of the future city.

Additional benefits of a visioning conference include: awareness is raised, the public is motivated to become involved, a sense of identity is fostered within the city, everyone's view is valued, and partnerships are formed that can assist implementation, and a basis for conflict resolution is established (ibid).

- Baseline Studies

Often the visioning process starts with the compilation of a list of city assets. These vary from one neighbourhood to another but might include a strong sense of community spirit, a relatively low crime rate, green spaces within the inner city, and a large number of mature urban trees. The compilation of such a list is seldom contentious: it helps stakeholders to work together and focuses minds on what needs to be conserved.

- Participatory Methods

Public participation is important in integrating environmental considerations into urban planning and management, because, as direct users of the city environment, urban residents have first hand experience of environmental challenges. They are also keenly aware of the economic impact of environmental actions, but may not be aware of the impact of these actions beyond their neighbourhood. Public support is essential in ensuring that environmental action plans are workable; this is greatly enhanced through their involvement in the decision making process. Public participation can simply mean keeping local people informed about urban planning activities and decisions.

3.5.2.2. Planning Instruments

Process and planning instruments are intricately related, with specialised planning instruments often providing key support to the planning process. These include:

- Environmental Profiles

An environmental profile is a specialised urban planning tool which focuses on the environment and it works to provide a common understanding of how a city's economic sector interact with the environment in terms of resources and hazards; it provides information about the institutional framework of a city's management systems; and helps both to identify and mobilise local stakeholders with interests in development and the environment. An environmental profile is normally quickly

assembled from existing information and data, not through expensive and time-consuming research (Cities Alliance, 2007:27 – 29).

- SWOT Analysis

According to GTZ (2002), a SWOT—‘Strengths, Weaknesses, Opportunities, Threats’—analysis is an assessment of internal strengths and weaknesses (within the control of the city administration) and external opportunities and threats (outside the jurisdiction and therefore not controlled by the city administration). A SWOT analysis is very helpful in describing the benefits of the environment and can be used to underline the impact of environmental neglect in urban planning (Cities Alliance, 2007:28).

- Rapid Ecological Footprint Assessment

An ecological footprint (EF) is the area of ecologically productive land required to provide the resources consumed by a city and to absorb the wastes it generates expressed in terms of hectares *per capita* for a specific year. When compared to global standards, it indicates whether a city uses natural resources sustainably (Rees, 1992:123).

- Monitoring Systems and Indicators

Effective monitoring is central to strategic planning. It is a vital management tool which enables cities to keep track of progress in implementing a plan to manage urban change. Monitoring is time-consuming, as it involves data collection, analysis and reporting. Monitoring involves taking measurements at regular intervals, recording and storing data for easy recall, making data available to local stakeholders, keeping track of events, analysing trends, and recommending corrective action where it seems that a target will not be reached (Cities Alliance, 2007:29).

- Strategic Environmental Assessment (SEA)

A Strategic Environmental Assessment ensures that the environmental impact of policies and programmes in a development strategy are identified, assessed, mitigated, communicated to decision-makers and the public and monitored. SEA has

become an important instrument to help cities to work towards the long-term goal of sustainable development in public planning and policy making (Ibid).

3.5.3 Analytical Tools for Integrating Environmental Issues in Urban Planning

The arguments for sustainable development are clear and universally accepted. For a city to grow and develop in the long term, it cannot disregard its environment. The environment cuts across all sectors, income groups and management areas. An *ad hoc* approach to environmental issues is fragmentary, expensive and inefficient. For a city to be effective and efficient, it must consciously integrate the environment into its planning and management mechanisms.

The social, economic and environmental challenges which urban settlements face today, coupled with the speed of urban expansion, have encouraged the development of new and innovative approaches to local governance and approaches which encourage urban stakeholders to have a say in the management of their city provide several entry points for the inclusion of environmental issues in urban planning (Cities Alliance, 2007:33-40).

3.5.3.1 Integrated Development Planning (IDP)

Integrated Development Planning, with its statutory citywide strategic development plan and development framework to promote urban integration, seeks to integrate horizontally across departments at the same level and vertically between governments at different levels, for example, municipal, and national. An important IDP strength is that it operates on a nationwide level, and that it is linked to government fiscal transfers and subject to government monitoring (Geyer, 2006:1). IDP methodology focuses on institutional strengthening and reorganization to integrate and co-ordinate urban development and include medium and long-term visioning; five-year strategic objectives and policies for each sector, which include environmental sustainability (Cities Alliance, 2007:34).

3.5.3.2 City Development Strategies (CDS)

City Development Strategies, promoted by Cities Alliance is also a planning system. A CDS can be prepared rapidly and amended quickly. The initial CDS is often prepared

within twelve (12) to fifteen (15) months but can then be adapted and refined to respond to changing demographic, economic and political circumstances. While a CDS does not need to be statutory, its implementation is strengthened by formalisation and integration into the formal decision process, for example, by being translated into a local authority's investment plans and budgets (Cities Alliance, 2006:3). Monitoring and evaluation play a central role in every CDS project and the indicators chosen for monitoring purposes depend on the strategic thrust of a particular CDS and the key priority issues (Cities Alliance, 2006:42 - 45).

3.5.3.3. Eco City Planning (ECP)

Eco City planning (ECP) uses strategic planning to establish a long-term direction towards sustainable development. ECP is holistic—it provides an over-arching umbrella for other more narrowly focused and shorter-term plans. ECP addresses a broader range of issues over a longer time frame and with greater public accountability than most other planning approaches (Cities Alliance, 2007:36).

As Moffat (1999) indicates, ECP also uses programmes to influence environmental management systems that ensure that environmental policy is fully integrated into corporate operations and green building design guidelines including everything from the site and energy control systems in buildings. ECP may also include subsidiary actions such as spatial planning, municipal investment planning and budgeting.

3.5.3.4. ecoBudget (eB)

ICLEI (2004) defines an ecoBudget (eB) as a management system, which focuses on the management of natural resources and environmental quality by cities. Paralleling the financial budgeting system on a periodic (annual) basis, ecoBudget routinely integrates environmental target-setting, monitoring and reporting into municipal planning, decision making and management.

Every year a budget for natural resources and environmental quality is developed and approved by the city council. Accounts (indicators) are established for each natural resource, and annual targets as spending limits are derived from mid-term goals. The budget uses physical units, not monetary terms. Budget preparation involves the

assessment of the expected environmental impact of ongoing operations and special projects in order to forecast the environmental expenditure and consider mitigation strategies (Cities Alliance, 2007: 39).

3.5.3.5 Strategic Environmental Assessment (SEA)

Strategic environmental assessment is an accepted tool of environmental management for assessing the environmental implications of proposed policies, plans and programmes (PPPs). SEA is undertaken to ensure that any environmental consequences that may occur as a result of the implementation of any PPP is fully included and appropriately addressed at the earliest stage of decision-making. At its core, SEA is about sound policy making and provides decision-makers with the necessary information to make more informed decisions (Cities Alliance, 2007:40).

The International Study of the Effectiveness of Environmental Assessment (1995) defines SEA as a systematic, proactive process for evaluating the environmental consequences of policies, plans and programme proposals in order to ensure that these environmental consequences are fully included and adequately addressed at the earliest appropriate stage of decision-making, on par with economic and social considerations. SEA is a proactive process as the environmental considerations are considered early in the Policies, Plans and Programme development cycle and not at the end of the cycle and applies to policies, plans and programmes or broad government initiatives and not physical projects for which project level assessments or Environmental Impact Assessments (EIA) techniques are more appropriate (Emanuel, 2004:3).

3.6 Reliability and Validity

The Validity of the research was enhanced by using different measuring instruments (questionnaires, institutional interviews and observation). The measurements were based on the unit of analysis and pilot testing of the measurement instruments on the first day on the field. To ensure reliability, adequate questions were asked on each indicator and unit of analysis.

3.7 Concluding Comments

This chapter which is generally divided into two parts had the first part concentrating on the research methodology adopted for the study. The methodology discussed in this chapter concerned the research design process indicating how the study was developed and carried out, the research type and strategy was also discussed and this was exploratory based on the specific case of a geographical area – the Sunyani Municipal area and the source of data was mainly from literature review, interviews, questionnaires and observation. This part of the chapter also indicated that the purposive sampling technique was used to select respondents who were basically institutions and how data collected from these institutions were analysed.

The final part of the chapter looked at instruments for environmental integration and analytical tools for integrating environmental issues in urban planning. The instruments for environmental integration were identified as process instruments which provide steps that can be taken to reach a desired goal, while planning instruments offer a variety of methods by which urban development plans can be developed and implemented. The analytical tools for integrating environmental issues in urban planning puts the environment at the forefront of development and advocates a conscious integration of the environment into planning and management of urban areas through the use of strategies such as IDP, CDS, ECP, ecoBudgeting and SEA.

This part was aimed at establishing the framework through which modern practices of urban planning and management could be ascertained to have been adopted in the area. However, the study revealed that these instruments and tools were not used in planning and management of the area because of the lack of technological base, lack of data and lack of logistics and trained personnel. Hence, the use of these instruments and tools could not be tested in the study in terms of their relevance and adoptability. However, the increasing use of these instruments and tools in other jurisdictions makes their adoption for use in our case very relevant.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

This chapter focuses on the outcome of information gathered from the field survey and represents the application of the research methodology as outlined in chapter three. The research methodology described the research design process and clearly defined the research type and strategy which is exploratory using a case study. The reason for this was to explore the contemporary issue of urban planning and management within an urbanizing area and the resulting environmental issues.

The previous chapter also indicated how data on the subject was collected and from which sources, the data analysis techniques was also defined as well as the unit of analysis of the study and the analytical framework for the study outlined. This chapter therefore represents the outcome of the previous one.

This chapter discusses the results obtained from the respondents as shown in table 3.1 above and addresses the three research questions. The responses based on which the following assemblies are made is presented at the appendix as Appendix 'B' – Field Survey Results, the responses to the major issues raised in the questionnaires.

The first part of the analysis focuses on the ecosystem services provided by the natural environment in the municipality and how these are utilized. The second part discusses the nature of urban planning and management in the municipality and how environmental issues are integrated into the process while the final part looks at how urban planning and management can be used to protect the ecosystem services provided.

4.1 The Sunyani Municipality and its Ecosystem

4.1.1 Basic Geographic Profile of the Study Area

The Sunyani Municipality is one of the twenty – two administrative districts of the Brong Ahafo Region and is located in the heart of the Region, and lies between Latitudes 7° 35' East and West and Longitudes 2° 5' West and 2° 3' West and shares boundaries with the Sunyani West District to the North, and West, Asutifi District to the South and Tano North District to the East. Figure 4.1 below shows the study area in context with its neighbours.

The municipality has a total land area of 829.3 square kilometers. The topography is generally undulating with heights ranging between 750 feet (229 metres) to 1,235 feet (376 metres) above sea level. The drainage pattern of the municipality as indicated in figure 4.1 is basically dendritic with several streams and rivers, notably, Tano, Amoma, Kankam, Benu, Yaya and Bisi. The area is well drained as evidenced by the dense network of rivers spread out over the municipality. The rivers are mostly perennial due to the double maxima – rainfall experienced in the area (SMA, 2006:5).

The municipality falls within the Wet Semi-Equatorial Climate Zone. Its mean monthly temperature varies between 23 degrees Celsius and 33 degree Celsius, with the lowest in August and the highest in March/April and experiences two rainfall regimes. The major rainy season occurs from April to the end of July, while the period from September to late October is the minor rainy season. Found within a transitional zone, the southern portion is covered with tropical soft woods, whilst the northern sector is covered mainly with Guinea Savannah woodland. The forest cover in certain parts of the municipality is, however, degenerating into the Savannah type through human activities, such as agriculture and settlement expansion.

Geologically, the municipality is underlain by Precambrian formation which is believed to be rich in mineral deposits associated with the Birrimian formation. About 85% of the soil in the area generally falls into the Ochrosols group with good water retention

capacity. The soils are generally fertile and support the cultivation of plantain, cocoyam, maize, cassava and cocoa. There is also the Birim Chichiwere Association which is an alluvial soil with poor water retention but good for the production of legumes, rice and vegetables, this is mainly found in the southeastern part of the municipality around Asikasu and Nketiakrom (SMA, 2006:10).

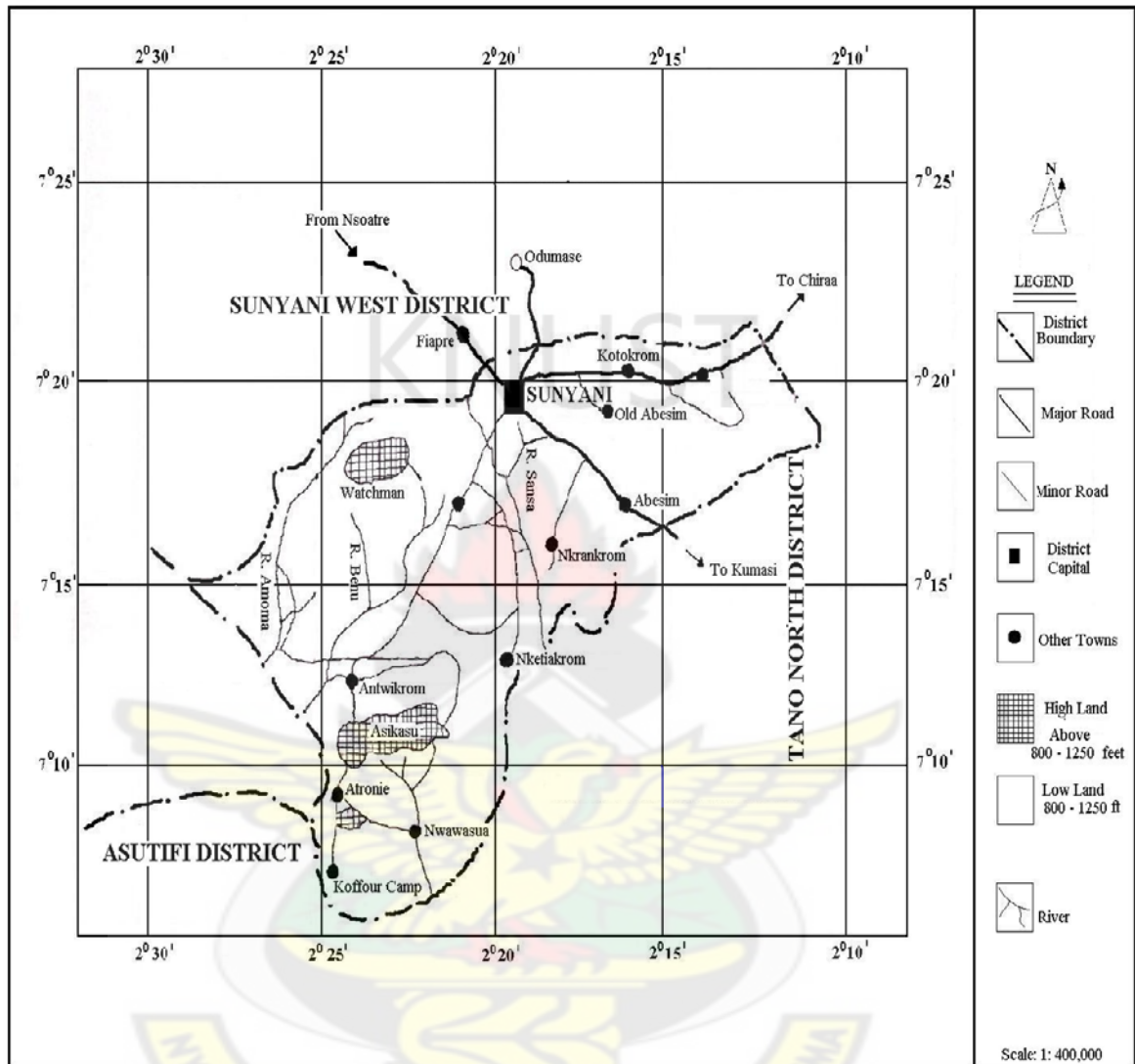
The population of the municipality as at 2008 was estimated at approximately 112,446 with a growth rate of 3.8% and a population density of 72 people per kilometer square, 42.4% of the population lives in Sunyani the largest town in the municipality.

The drainage, climate and geology of the study area provide several ecological services and a conducive environmental condition for human habitation. The potential for enhancement of these ecological services and the preservation of these services is the benchmark for the creation of a sustainable town. This therefore brings into focus the need for pragmatic and proactive urban planning and management, to create a sustainable town where these services could be enhanced for future generations.

The rate of population growth and the population density may not have any effect on the land; however, this state of affairs has dire consequences for the natural resources of the area.

Even though, the geographic profile is a good asset and makes the area conducive for human habitation and well being, the wrong utilisation of these resources have in part contributed to the environmental issues that have resulted in the area, in that an alteration of the natural cause of rivers and streams for instance will lead to flooding and erosion of the natural environment with implication for disasters and other environmental hazards.

Figure 4.1: The map of the Sunyani Municipality



Source: MT&CPD, 2009.

4.1.2 The Ecological Services Provided in the Sunyani Municipality

The institutions surveyed all indicated that the ecosystem services provided in the municipality was varied and these services were identified to include the natural vegetation which by virtue of the location of the municipality within the semi – deciduous forest belt is generally characterized by green vegetations which promotes oxygen production, soil formation and nutrient recycling among others. These were identified as some of the benefits provided by the natural environment.

The MT&CPD especially identified the green belts within the municipality and the forest resources and Taungya System (forest plantation) in the Atronie area as ecological services provided in the municipality. The area was also identified as having the capacity of providing services such as food fiber, fuel and water. Indeed, all the services are well provided in the area, agricultural lands are located within the municipality and support the production of all kinds of foodstuffs such as plantain, cassava, maize, vegetables and cereals. The area is also interspersed with various rivers and streams which serves the area with water. These water bodies also filter the water sources (water purification). The ecosystem services provided regulates the climate of the area; hence the climate is very conducive for human habitation.

4.1.3 Environmental Issues in the Municipality

The responses from the institutions surveyed are presented in table 4.1 below and an elaborated discussion of the issues are also presented in the subsequent paragraphs.

Table 4.1 Environmental Issues in the Sunyani Municipality

No.	Environmental Issues in the municipality	Responses	Respondents
1	Waste management	Collected, dumped compacted at final waste disposal site, no treatment and recycling.	MPCU, EPA, MT&CPD
2	Development in flood prone and catchment areas of water bodies	Prevalent at Penkwasi, Agyei Ano and some other areas.	BIU, MT&CPD, LC, observed
3	Storm water and floor control mechanisms	No provision within most suburbs especially newly developing ones	BIU, MT&CPD, LC, Observed
4	Unauthorized developments	Prevalent in newly developing and unplanned areas	BIU, MT&CPD, LC, Observed
5	Degradation of the natural environment	Natural environment being replaced by buildings, no attempt to protect the environment	EPA, MCPU, BIU, observed

Source: Author's construct, May, 2009.

It was indicated that these problems/issues have resulted in large from the lack of enforcement of regulations, inadequate implementation of policies, insufficient knowledge and information on environmental issues and the general attitude of the people. The significant environmental issues plaguing the Municipality have been discussed as follows;

4.1.3.1 Waste Management and Disposal

The lack of sewage systems within the suburbs has resulted in domestic sewage being deposited directly on land; this was cited as one major environmental issue confronting the area. It is not uncommon to find households bordering neighbourhood roads disposing domestic liquid waste onto the roads. Another pollutant of primary concern is human excreta, and because of the inadequacy of toilet facilities especially within the newly developing areas has resulted in the situation whereby people defecate openly onto the land surface posing severe public health risk.

It was however, indicated that discharge from industries was absent in the Municipality due to the absence of industrial facilities which discharge untreated effluents directly into surface water or on land, household garbage collection and disposal is very efficient, this as indicated was evidenced in the lack of heaps of garbage in the town and the regular discharge of refuse containers sited at the designated sanitary areas.

It was however, observed that wastes collected ends up in a final waste disposal site (an open dump) and is not treated in any way, which could adversely affect drainage systems, surface and ground water quality as well as cause floods. These dumps also provide a breeding ground for disease – carrying insects and the practice can be said to be waste collection and dumping but not waste management since the waste is not subjected to any form of sorting, segregation and treatment.



Plate 4:1 Sunyani final waste disposal site – solid and liquid waste dumps.

Source: Field Survey, May, 2009.

The volume of solid waste generated is about 320 metric tons daily and this cost the Assembly about GH¢ 200.00 to cart to the final waste disposal site. The mode of disposal is the dumping of the waste at the site and later compacting using a grader. The liquid waste is discharged into a dam constructed at the final waste disposal site.

4.1.3.2 Development in flood prone areas and catchment areas of water bodies

Responses from the institutions surveyed indicated that the municipality faces the problem of development in flood prone areas and catchment areas of water bodies. Though some of these developments may be unauthorized, it was interesting to observe that some of these areas have been zoned in the layout for the use it is being put to and the Lands Commission have actually allocated such for development purposes. This brings to the fore, the none consideration of environmental issues in planning of the area.

Unauthorized developments along the banks of the Adjei Ano stream and farming activities along the banks of the Sunyani stream are all issues that were dealt with at the level of the Statutory Planning Committee of the Assembly, this and the flooding of some properties around Penkwasi and other areas during down pour explains the extent of the problem.

4.1.3.3 Storm water and flood control mechanisms

An observation of the area showed that drainage systems are lacking in the suburbs of the Municipality, thus, sewage and sullage from domestic and commercial sources is flushed away through natural causes therefore creating gullies and erosion of the land. Flooding also occurs in some areas due to the lack of drains to carry away rain water therefore causing flooding, erosion and degradation of the land.

Plate 4.2 below shows land erosion within a developed suburb (Gosokrom) resulting from the lack of drains and storm control mechanisms within the suburbs. The result of this is that the foundations of buildings are exposed; roads and lanes washed away therefore creating unsightly scenes within the area. This situation exacerbates the environmental situation of the area.



Plate 4:2. Soil erosion and gully formation/development resulting from lack of drains

Source: Field Survey, May, 2009.

4.1.3.4 Unauthorised Developments and Degradation of the Natural Environment

There is the issue of unauthorized development within the municipality especially with alteration to buildings within the central business district and the peri urban area. Degradation of the natural environment has become rampant with the increase in developments at the peri urban area where the natural vegetation of the municipality is concentrated. The natural environment is giving way to the built environment at a faster pace and is being replaced by the buildings. The lack of logistics and inadequate staffing of the Building Inspectorate Unit and the focus of their activities, that is curbing unauthorized developments and not environmental protection exacerbates the problem.

4.2 Urban Planning and Management in the Sunyani Municipality

The institution legally mandated to prepare land use planning schemes to guide spatial development and development management/control in urban areas in Ghana is the Town and Country Planning Department (T&CPD). In the Sunyani Municipality, the Municipal Town and Country Planning Department (MT&CPD) under the Municipal Assembly is directly responsible for the planning of the area. The effort of the MT&CPD is supported by the LC, SD, BIU, EPA, MPCU, and other relevant government agencies. The major role players however, are the MT&CPD and the LC. The process of planning and management in the municipality is discussed below outlining the role of the key players.

4.2.1 The role of the MT&CPD in Planning the Municipality

The main functions of the MT&CPD as indicated by the Municipal Town Planning Officer, include the formation of goals and standards relating to land use in the municipality, the design of plans and proposals to direct growth and development of settlements within the municipality. The other functions are the preparation and revision of planning schemes for settlements within the area in order to direct growth, and the coordination of diverse types of physical developments undertaken by various governmental departments and agencies as well as private developers.

The MT&CPD has one (1) professional planner, three (3) draughtsmen, one (1) building inspector and one (1) typist. Planning in the municipality is undertaken based on the old practices without the infusion of the modern trends of planning. The drawing and tracing sheets remains the main equipment for planning in the area.

The practice of urban planning in the municipality is now mostly concentrated at the peri – urban areas where development is in prospect, as opposed to the central business district and developed suburbs where planning is mostly concerned with change of use, alteration of existing buildings and the reconstruction of old/dilapidated buildings.

According to the MT&CPD, planning begins with the department notifying the Lands Commission of areas due for development. Based on the notification the Lands

Commission officially commissions the Survey Department to survey the area in question and prepare base maps for the MT&CPD. The base maps show existing features such as rivers, streams, marshy and liable to flood areas and existing structures among others.

The MT&CPD uses the base maps to plan the area. Based on the details of the base maps, the department draws a draft layout and a report on the scheme. The draft layout and report is then submitted to the Sunyani Statutory Planning Committee (SPC) for vetting, and is also supposed to be posted on the public notice board at the Assembly for the general public to study and make input.

The comments of the SPC are then incorporated into the scheme and submitted to the SPC for approval and subsequent implementation.

The preparation of the plan/layout as indicated by the MT&CPD is done within the corridors of the department and the SPC. Even though the technical/community interface (posting on notice board for public comments) was mentioned as one of the stages of plan preparation, it was indicated that in practice this stage is not considered in the process due to logistical and financial constraints. It was also indicated that the SPC membership did not have the requisite skills to contribute effectively to plan preparation therefore making the MT&CPD having a dominate role in the process.

The neglect of the technical/community interface in plan preparation has implications for the implementation of the plan, since community ownership of the plan will be absent and the plan will not capture the desires and aspirations of the people. The consequence of this is the problems that confront the implementation of the plan such as unauthorized developments, encroachment and general distortion of the plan.

This lack of consultation with the communities in plan preparation forms the bases of the problems the Lands Commission faces in managing the lands and implementing the scheme because of the extra activities that have to be undertaken to convert land uses and

tenure. The essence of these further steps is to reduce tension within the schemed area and to allow developers the peace of mind to go on with developments.

4.2.2 The role of the Lands Commission in Urban Planning and Management

According to the Lands Commission, they have responsibility of managing the lands in the Municipality for and on behalf of the people by virtue of Executive Instrument (E.I.) 46 of 1961 which vests the lands in the President of the Republic of Ghana, to hold in trust for the people of the area, hence the people have the beneficial rights while the management and administration of the lands is by the Lands Commission on behalf of the President of the Republic of Ghana.

The Lands Commission facilitates the preparation of the planning scheme, by teaming up with the MT&CPD and the Survey Department; this involves the financing of the preparation of the scheme since the Lands Commission manages the lands in the area.

As managers of the lands, the final layout as prepared by the MT&CPD and approved by the SPC of the Municipal Assembly is handed over to the Lands Commission for management through allocation to prospective developers. However, since the vesting of the lands does not bar the indigenes from going onto the lands for production purposes, when the area has not been schemed, the indigenes appropriate these lands as their own.

Therefore, after the preparation of the layout the Lands Commission further takes steps to convert the use and tenure of the lands, according to the Lands Commission this is done through the identification of the customary land owners and the necessary consultations done. Parcels of lands are given to identifiable customary land owners through the family heads, while cash compensation is paid for the crops on the land.

When the land use and tenure conversions are over, the lands are therefore allocated to prospective developers to begin development. In respect of management of the town, the Lands Commission serves on the SPC where their role is to advise on land issues that relate to urban management. Further, the Lands Commission's role of granting titles for

specific uses also aids the management of the town. The Lands Commission also liaises with the Municipal Assembly to check encroachments and also assists the Assembly's task force on encroachment to remove encroachments.

4.2.3 The role of the Statutory Planning Committee (SPC) in Urban Planning

The SPC is the body mandated to vet and approve all planning and building applications based on the standards set in the National Building Regulations and the Assembly's bye – laws. The SPC's role in urban planning and management includes the granting of permission for developments in the municipality, consideration of applications for change of land use, subdivision of existing plots, re - zoning of land use and decision on encroachment and development control.

The Municipal Chief Executive is the chairman of the SPC whilst the Director of the MT&CPD is the secretary. The other members of the committee are drawn from the land sector agencies, the MPCU, Ghana Highways Authority, Urban Roads, Ghana Water Company, Volta River Authority, EPA, representatives of traditional authorities and some Assembly members. The role of the other agencies is shown in table 4.1 below.

The SPC meets any other month to consider development and planning applications. The development and planning applications are submitted by applicants to the MT&CPD and are vetted by the planners at the department in conjunction with the Technical – Sub Committee of the SPC and thereafter process them for the SPC meetings together with the comments of the initial vetting. The applications are approved, deferred or refused with reasons. The SPC has deliberative functions and has the power to enforce its own decisions or apply sanctions on defaulters of its rules through prohibition, abatement, alteration and removal or demolition and recover any expenses incurred from the owner of the land as if it were a debt due to the Municipal Planning Authority.

Table 4.2: The role of other departments in Urban Planning and Management

NO.	Department	Role in Urban Planning and Management
1.	Survey Department	Preparation of base maps. Member of SPC and Technical Sub Committee.
2.	Municipal Planning Coordinating Unit	Member of Statutory Planning Committee and Technical Sub Committee
3.	Municipal Engineer/ Building Inspectorate Unit	Enforcement of building regulations. Enforces compliance of the approved scheme
4.	Environmental Protection Agency	Membership of SPC and Technical Sub Committee. Advisor on environmental regulations and standards.
5.	Infrastructure and utility service providers (GHA, VRA, GWCL, Urban Roads),	Membership of Statutory Planning Committee. Advisors on the provision of infrastructure and utility services.
6.	Ghana National Fire Service.	Membership of SPC and Technical Sub Committee.
7.	Traditional Authorities	Membership of Statutory Planning Committee

Source: Author's construct, May 2009.

4.2.4 Relevance of the current Urban Planning Process

The MT&CPD indicated that planning of the area could be done differently, by adopting a more comprehensive planning process, however, due to personnel, logistical and financial constraints, planning will continue to be undertaken using the old paradigm as indicated above because of the convenience it affords the planning authority. Given the ecosystem services provided in the municipality, the traditional urban planning process, if strictly followed in the planning and management of the municipality will to a large extent reduce environmental issues that result in the area. For instance, an analysis of the problems where the existing land use situation is studied, followed by an identification of opportunities for change and evaluation of the land suitability are steps in the process that will to a large extent resolve emerging environmental issues in the planning process.

The process if properly followed will lead to the appraisal of alternatives where environmental, economic and social analysis will be done, and the needs and requirements of each alternative identified and incorporated in the planning and

management of the area. A strict compliance with the traditional urban planning process could resolve some of the problems that have been identified with planning in the area, but for the constraints faced in land use planning generally.

4.2.5 Constraints to Urban Planning and Management in Sunyani

Table 4.3 below indicates the responses from the respondents on the constraints to urban planning and management in the municipality. It was evident through the study that formal land use planning and the accompanying policies have not been used to promote, enhance and improve land use in the municipality. A number of factors were identified as being responsible for this state of inadequate urban planning and management in the municipality. These constraints were investigated and summarized in table 4.3 below and followed with a detailed discussion on the main constraints.

Table 4.3: Constraints to Urban Planning and Management

No.	Constraints to Urban Planning & Management	Responses	Respondents
1	Land use information	Inadequate, not up to date and lack of base maps	MT&CPD, SD, BIU, EPA, LC.
2	Adoption of modern techniques	Not adopted in planning, lack of funds and requisite expertise	MT&CPD, SD, BIU, EPA
3	Laws and regulations	Not supportive of planning and urban management	MT&CPD, BIU
4	Human Resources	Inadequate, lack of motivation	MT&CPD, SD, BIU
5	Logistics and equipment	Outdated, inadequate and none functional	MT&CPD, SD, BIU
6	Funding for planning activities	Service institution, poor government subvention	MT&CPD, BIU

Source: Author's construct, May 2009.

4.2.5.1 Spatial Information/data on Land Use

The study identified inadequate information/data as one of the major problems facing land use planning and management in Sunyani. Field investigation reveals lack of data on land use, no comprehensive and up to date plan or map showing land use pattern and structure of ownership in the municipality.

Lack of base maps was found to be a major problem of land use planning in the area. This is due to the lack of finances to finance the preparation of the maps as well as the delay in preparing these maps since the Survey Department which is supposed to prepare the base maps lacks the requisite logistics and personnel. Despite the fact that the town has grown spatially in recent times, the delay in planning results in the problem of unauthorized developments as it pertains at Kotokrom South, Yawhimakrom and parts of Abesim Kyidom.

4.2.5.2 Adoption and Utilization of Modern Planning Approaches/Techniques

Following the leading of the international community, a number of concepts and approaches such as sustainable urban development that emphasized sound environmental management including land management has been devised and adopted elsewhere.

Field investigations show that, these new approaches and methodologies have not been incorporated into land use planning and management in the municipality. Land use planning in the municipality is undertaken mainly by government officials in the Municipal Assembly without involving the public who are to use such land.

Again, the basis of planning in Sunyani is the traditional plan approach that emphasizes the utilization of the professional expertise of planners to determine and articulate physical development plan for the municipality. Therefore, non-adoption and incorporation of new approaches are a major constraint that needs to be surmounted to ensure better management of land in the area.

4.2.5.3 Land Use Planning Policies, Laws and Regulations

Land use and management in Ghana generally is still based on the Town and Country Planning Ordinance, Cap. 84 of 1945 and its amendments, thus the Town and Country Planning Department operates under a moribund legislation with some conflicting provisions with the Local Government Act, Act 462 of 1993 relating specifically to the preparation and approval of development plans. Act 462 which was promulgated to

replace Cap. 84 taking into consideration its defects, however, did not come with working schedules and as a result, the department still has to rely on the schedules of Cap.84.

Again, the role and authority of the department is in doubt, or at least confused, due to both the positioning of the department within the Ministry of Environment, Science and Technology and also because under the Local Government Act, 1993 (Act, 462), the assemblies are the designated planning authorities with power to grant planning permission and are within the scope of responsibility of the Ministry of Local Government and Rural Development. This dual allegiance to all intends and purposes militate against the efficient operation of the department in respect of clear policy direction.

Further, there is the problem of the highly unattainable planning standards and requirements for planning and building permits set in the National Building Regulations of 1996, Legislative Instrument (L.I.) 1630, the specifications of the regulations are set to the British standard code of practice which does not serve the Ghanaian purpose and are therefore inappropriate for implementation and hence not adhered to fully in the planning of the Sunyani municipality but are relaxed for local adoptability.

4.2.5.4 Manpower to control and monitor land use

Table 4.4: Number of staff at the MT&CPD and BIU

Category of Staff	Number of Persons
Municipal Town and Country Planning Department	
Town Planner	1
Building Draughtsmen	3
Building Inspector	1
Typist	1
Building Inspectorate Unit	
Building Inspectors	5

Source: Field Survey, May, 2009.

Closely associated with the above constraints is inadequacy of qualified urban planners. The Town and Country Planning Department and the Building Inspectorate Unit is saddled with the responsibility of carrying out the planning and control of development on land in Sunyani that has an estimated population of 112,446 and a total land area of 829.3 square kilometers. Table 4:4 above shows the total number of staff of the Municipal Planning Office to be six (6). Out of this number, majority five (5) are non-professionals. Only one (1) person, the municipal planner is a professional town planner. The building Inspectorate Unit has five (5) building inspectors.

4.2.5.5 Funding of Land Use and Management Activities

Another major constraint to effective land use planning and management that the study identified is poor and inadequate funding in the area. In such a situation, it becomes difficult to initiate plans and development schemes to organize land use and land management and undertake other essential planning tasks germane to land use management. Thus, the activities of the department has been restricted or limited to the approval of layout and building plans/permits for development by prospective developers as well as granting statutory rights of occupancy to owners of land, and to some extent development control.

4.2.5.6 Institutional Framework for Land Use Planning and Management

Besides, the above, it was observed that land management in the town operates in a vacuum. Overall land use zoning plan and map for the municipality is not available to guide land use and management decisions. This has become grossly inadequate to facilitate effective management of the municipality's land. Other associated problems include lack of adequate and reliable demographic data. Field investigations revealed that land use planning and management in the municipality is for most part restricted to estate development at the expense of overall management of the area.

4.2.6 Urban Development Process

The MT&CPD indicates the process in the municipality begins with the acquisition of land within the municipality and a subsequent application to the Town and Country

Planning Department of the Municipal Assembly; this is preceded by the acquisition of a permit jacket from the Assembly, which indicates the attachments to be included.

The architectural drawings of the proposed building or development, the site plan and the proof of title to the land are the paramount attachments that are added to the jacket. These are then submitted to the Municipal Town and Country Planning Department and the necessary application fees paid, the applications are then submitted to the Technical Sub – Committee after the MT&CPD have checked if the site plan conforms to the layout and verifies the title to land with the Lands Commission

The Technical Sub - Committee of the Statutory Planning Committee of the Municipal Assembly, with membership drawn from the MT&CPD, the Lands Commission, Environmental Protection Agency, Ghana National Fire Service, Environmental Health Office, the Municipal Engineer, Survey Department and the utility service providers then vets the applications in accordance with National Building Regulations and make recommendations to the SPC for approval, deferment or rejection with reasons.

When the application is approved the building or development permit is then issued by the MT&CPD for development to commence, the development is supposed to be under the supervision of the BIU to ensure compliance with the requirements of the building regulations.

The MT&CPD and SPC mandate in this regard is based on section 64 (1) of the Local Government Act, 1993, (Act 462), which provides that ‘Every person shall before constructing a building or other structure or undertaking any work, obtain a permit from the District Planning Authority...’ and Section 2, Part 1, of the National Building Regulation, Legislative Instrument (L.I.) 1630 adds that ‘any person who intends to erect a building or make any structural alteration to any building or execute any works or install any fittings in connection with any building shall apply to the District Planning Authority of the district, where the building, structure or works is or is intended to be...’.

4.2.6.1 Rate of Development

The review of applications for development/planning permits from the SPC, applications approved by the committee over the last five years (2004 – 2008) indicate an increase in applications per year as shown in table 4:5 below. This is an indication that there is an increase in the willingness to develop in the municipality, this situation coupled with an observation of the area shows actual development of properties which is currently in prospect in mainly the peri - urban areas.

This trend shows that the natural environment is gradually giving way to a built environment and also degrading the ecosystem services available to the area.

Table: 4.5: Applications for development/planning permits from 2004-2008

Year	Area of Permit Application		Total
	CBD	Peri-urban	
2004	8	127	135
2005	11	143	154
2006	16	159	175
2007	18	171	189
2008	21	220	241

Source: MT&CPD, May, 2009.

4.2.7 Methods of Integrating Environmental Issues

According to the MT&CPD, planning in the municipality is based on the neighbourhood concept, where the predominate future development pattern is residential neighbourhoods, organized and dominated by single uses. The three basic elements of the concept as applied in the municipality were identified as the size - as related to facility catchment area, walking facilities, and service considerations; the location of facilities to serve overlapping residential catchment areas to replace the centralized service of the neighbourhood, and to form flexible rather than a rigid structure; and finally, the preparation of a layout which favours the subdivision of large units into smaller ones.

It was indicated that under the concept, the predominant development pattern is residential neighborhoods, where lower density residential occurs near existing rural neighborhoods and near river corridors where the topography is undulating and development is prioritized on lands that are contiguous with existing developed lands and within service area. Limits and density of residential areas is similar to current development densities, with a greater range of housing types and a mix of uses.

The survey indicates that the base maps produced by the Survey Department show the various environmental features such as water bodies and their catchment areas, liable to flood areas, marshy areas and other environmental features. These features as much as practicable are preserved in the scheme and protected as such. This is how the current planning process adopted in the municipality integrates environmental issues into urban planning.

The survey also revealed that no modern method of integrating environmental issues into urban planning was adopted in the planning of the municipality, except that in the application for permission for certain land uses such as fuel filling stations, car washing bays and some industries, Environmental Impact Assessment (EIA) and EPA reports are required to determine the effect of such development on the environment, before the application is considered.

The implication of this situation is that most developments are undertaken without recourse to the effect of the development on the environment. In this era of sustainable development, the emphasis has been on the environment and integrating environmental concerns into every developmental project so as to enhance the sustainability of the environment.

4.2.8 Adoption of Instruments for Environmental Integration

New and innovative approaches to local governance and approaches which encourage urban stakeholders to have a say in the management of towns have been developed and used in planning and management of other jurisdictions. The survey sought to find out

how these modern approaches have been used in the planning and management of Sunyani. The survey revealed that these approaches have never been adopted in planning and management of the area.

On knowledge of these approaches, aside the Strategic Environmental Assessment (SEA) which was known to the planning authorities, other approaches like IDP, CDS, ECP and ecoBudgeting were unknown and the feasibility of their application could therefore not be ascertained.

These modern approaches put the environment at the forefront of urban planning and management taking into consideration issues such as air quality, water demand management, waste management, energy/climate change, and environmental education. These approaches as well rely on data and research, a GIS and uses technical methods and specialised approaches such as material flow analysis/ecological foot printing and green building certification, and the methods finally focuses on the management of natural resources and environmental quality by cities.

Therefore the implication of the none implementation of the these approaches is that the urban environment becomes vulnerable and exposed leading to several environmental problems such as flooding, erosion, waste management problems and pollution of water sources.

4.3 Protecting the Urban Environment through Urban Planning and Management

Aside making provision for various land uses within the plan, the MT&CPD indicated that in plan preparation, environmentally sensitive areas are preserved and attempts made to enhance such areas. The creation of refuse collection points, final waste disposal sites, buffer zones and greenbelts for the beautification of the municipality were cited as some considerations that are included in the preparation of planning schemes and this could go a long way to enhance the urban environment.

It was indicated that, planning in the municipality does not appraise alternatives where environmental, economic and social analysis of other alternatives is done to ascertain the

suitability of alternative uses. This, if done will enhance the urban environment since it will determine the impact of the plan on the environment and enable the planner and stakeholders make the best choices.

4.3.1 Effectiveness of Urban Planning and Management and the Sustainability of the Ecosystem

According to the MT&CPD, in the light of the inadequate logistics and personnel, urban planning and management in the municipality is still very effective. The effectiveness of the planning and management is evidenced in the effectiveness of the system of land management and administration and urban planning and management. This, the respondents indicated was as a result of;

- The vesting of the lands and the land administration and management by the Lands Commission. This system to a large extent eliminates land litigation, indiscriminate sale of land and enhances land tenure security.
- The role of the MT&CPD in ensuring that areas of development are schemed and the role of the SPC in approving planning/development applications regularly to a large extent abate unauthorized developments and encroachments. The SPC meets regularly – six times in a year to consider and approve development/planning applications. The dispatch with which these applications are considered to a large extent makes planning and management effective in the municipality.
- The supervisory and monitoring role played by the BIU of the Engineer's Department, makes planning and management of the municipality effective. The unit enforces the building regulations and standards based on which the development/planning permit was granted. The unit also ensures that unauthorised developments and developments at unapproved areas are abated within time.

The study however, revealed that the current system of urban planning and management is unable to sustain the ecosystem of the municipality. The ecosystem mostly concentrated in the peri –urban area is gradually being replaced by built environment, the environmental resources here are being cleared for buildings and other structures are built

in their place. The respondents indicated that sustainability of the ecosystem is not possible under the current practice of urban planning and management because;

- Urban planning and management as it is practiced in the municipality is to prepare land use plans to direct and guide the growth of human settlements. The pressures resulting from human settlement expansion destroys the ecosystem rather than sustain it.
- The major land use provided in the schemes is residential and because of the contiguous nature of the plots, development of these plots devastates the natural environment replacing it with buildings.
- Enforcement is of planning and building regulations. The BIU enforces building and planning regulations to the neglect of the urban environment in which these regulations are implemented.

4.4 Summary of Implications

The Sunyani Municipality undoubtedly is one of the planning areas in the country that has the required framework and structures for the regulation of development through effective urban planning and management as evidenced in the management system and the role of the SPC in regulating development. The environmental resource endowment of the area is another resource that could be preserved, enhanced and utilized for societal benefit if effective urban planning and management is undertaken.

However, the study revealed that these endowments of the area are being misapplied through general indiscipline of developers, lack of enforcement of planning regulations, slow pace of infrastructural development and provision of utility services as indicated at section 4.2.4 which outlined the constraints to urban planning and management in Sunyani and above all the rapid urbanization being experienced in the area among other factors.

Indeed, the natural environment of the area is being altered as a result of several human activities and the inability of planning and management authorities to develop the needed infrastructural base for development. The study revealed that unauthorised developments

within marginal lands at parts of Nkwabeng and Gozokrom, catchment areas of water bodies such as the Agyei Ano stream, flood prone areas and reserved areas (see 4.1.3.2) was because people wanted to settle close to the traditional settlements which have been provided with basic infrastructure such as roads, pipe – borne water and electricity. The attachments to these developed settlements have led to the development of unauthorised structures.

The implication is that, pressure is brought to bare on the available natural resources that have been provided in those areas such as Nkwabeng, Gozokrom, Agyei Ano and parts of Penkwasi, these problems are the pollution of water bodies and destruction of the ecosystem resulting in flooding, erosion, and waste management problems.

The rapid urbanisation of the municipality is also putting a lot of pressure on the urban environment and the demand for accommodation for all purposes has resulted in developers developing within unauthorised areas so as to meet the demand. This coupled with the inability of the managers of the municipality to provide the necessary infrastructure and utility services within the newly developing frontiers of the municipality have resulted in the demand for accommodation and space within the developed areas than the developing areas. This situation has resulted in pressure on the natural environment leading to environmental degradation at a faster pace. See (4.1.3.4) where the issue of unauthorised developments and degradation of the natural environment was discussed.

Generally, development within the municipality is outpacing the provision of infrastructure and utility services, as well as the planning of the area because of inadequate staffing, logistical and financing constraints, this has resulted in unauthorised developments, inadequate storm water and flood control mechanisms and degradation of the environment.

CHAPTER FIVE

FINDINGS, POLICY RECOMMENDATIONS AND CONCLUSION

Following the analysis and discussion of data collected on the study in the previous chapter, it has revealed that urban planning and management is undertaken in the municipality by the MT&CPD and supported by the relevant departments. Planning in the area is still based on the old paradigm and without the infusion of modern techniques and standards of planning. The MT&CPD relies on the base maps produced by the Survey Department for planning without any meaningful contact on the ground, planning is undertaken in the office instead of on the field. In the main, the following findings have been made.

5.1 Major Findings

From the analysis of data and discussion of results, the following findings were obtained in respect of the study undertaken in the Sunyani Municipality. The findings have been grouped according to the set objectives of the study.

5.1.1. Urban Planning and Management in the Sunyani Municipality

In respect of examining urban planning and management in the Sunyani Municipality, the study made the following findings relating to the current practice of urban planning and management.

- There is minimal stakeholder involvement in the planning process as evidenced in 4.2 where urban planning and management in Sunyani was discussed. It was evident through the study that in plan preparation the general public in most cases is not consulted. Urban planning is undertaken to a large extent solely by the MT&CPD without any input from the stakeholders. This is opposed to the current trends in urban planning and management where community participation is key and is being promoted by international planning institutions.
- Delays in the preparation of base maps by the Survey Department due to financial, logistical and personnel constraints prolongs the period of plan preparation creating an avenue for unauthorized developments.

- The MT&CPD still depends on the manual methods of plan preparation. The use of drawing boards, tracing paper, delays plan preparation. Modern urban planning and management techniques have not been adopted in planning the area as pertains in other jurisdictions, where modern techniques supported by GIS is used to plan and manage urban areas.
- The legal framework regulating urban planning is inadequate as was indicated at 4.2.4 on the constraints to urban planning and management. Cap. 84 have been identified to be inadequate when dealing with the current urban functions and socio - economic environment and is also powerless in taking action against defaulters of planning regulations. The planning processes under the current legislations are difficult and confusing and the laws have difficult procedures and mechanisms for plan preparation, approval and appeal.
- The discussion at 4.2.4.6 showed that there was inadequate framework for urban planning, thus, development planning and physical planning are done independently. One is done without recourse to the other and is independent of each other and derives their enabling power and policy direction from seemingly different legislations and different ministries. Even though the local Government Act, 1993, (Act 462) makes the Municipal Assembly the planning authority, the framework has not been created for the fusion of the functions of the two aspects of planning at that level and Act 462 does not clearly establish the mandate of the MT&CPD and so the M&TCPD still relies on Cap. 84 for planning despite its provisions not being relevant to current needs.

5.1.2 Urban Planning, Management and Environmental Issues

The study revealed that the environmental issues confronting the municipality are related to unauthorised developments along water ways at Agyei Ano, Gozokrom and Penkwasi suburbs resulting in flooding of properties during rains, inadequate flood control mechanisms evidenced in the absence of drains within the suburbs, land erosion, pools of stagnate water, and degradation of the natural environment through human activity. The

issue of waste management also confronts the municipality in terms of inadequate toilet facilities in homes and for public use, the none treatment of waste at the final waste disposal site, and the nearness of the site to human settlements. In respect of the urban environment the following findings were made;

- The study found that there was no effective waste management. The waste management has to do with only one aspect of the whole process – waste collection and disposal. The waste produced in the municipality is only collected and dumped at a final waste disposal site, without any form of separation, treatment and processing. The location of the final waste disposal site and the mode of handling the waste is a potential health hazard, that, if not properly managed will have devastating health implications for the municipality.
- Another finding is that, developments in flood prone and catchment areas of water bodies is prominent in some suburbs of the municipality, this results in flooding of homes and other properties during the rainy season.

5.1.3. Methods for Integrating Environmental Issues into Urban Planning

The methods and analytical tools for integrating environmental issues into urban planning were relatively new tools that were not adopted in planning the area, this was because of the inadequate technical capacity of the planning staff and logistical constraints, as a result the following findings were made with respect to integrating environmental issues into urban planning;

- The MT&CPD indicated that there was no conscious effort to integrate environmental issues into the planning process of the municipality. Environmental considerations in planning have been based on the traditional models of urban planning using the base maps to secure environmentally fragile areas without any scientific bases.

The practice now requires the use of planning and management tools such as SEA's, ECP, IDP, CDS and ecoBudgeting and methods such as Visioning, Baseline Studies, Participatory Methods, Environmental Profiles, SWOT Analysis

and Rapid Ecological Footprint Assessment as discussed in the second part of chapter three to plan for sustainability.

- The inadequacy of funds and the technical know - how to adopt the evolving standard of practice has resulted in the situation where plans are only prepared and no provision made for the necessary infrastructure and utility services on schemes prepared. This is left to prospective developers to provide. This results because of the lack of cooperation between the planning authority on one hand and the infrastructure and utility service providers on the other.
- This state of affairs it was observed have led to inadequate storm water control mechanism in the municipality, land erosion within developed suburbs and flooding at certain areas of the town during down pour.
- The lack of infrastructure especially roads leads to encroachments, because developers create their own access roads to enable them get to their plots for development purposes and in the process distorts the scheme.

5.1.4. Other Findings

Other findings of the study are generally in respect of logistical and human resource needs as was revealed by the study;

- The planning departments especially the MT&CPD, the BIU and the Survey Department were saddled with inadequate logistics and personnel. These departments are under resourced, and not well motivated. In this era of information technology the departments still rely on typewriters and obsolete machines for their operations.
- Finally, the MT&CPD which is the main institution for planning is a service department that does not charge fees, and has no mandate to generate financial resources to support its own operations and therefore has to rely on subventions

from the Assembly and central government which is inadequate and not forthcoming hence affecting the operations of the department.

5.2. Policy Recommendations

For efficient urban planning and management that ensures the integration of environmental issues with the view of achieving sustainable development of the Sunyani Municipality in the face of the rapid urbanization, the following policy recommendations have been made based on the findings of the study.

5.2.1. Planning Education

Most of the environmental issues identified in the study are basically about a lack of knowledge of the issues and the result of the actions of individuals, therefore, to help ameliorate these problems there is the need for effective planning education.

Education have generally not been part of the functions of the MT&CPD, it is therefore recommended that the MT&CPD in conjunction with the SPC and the Municipal Assembly undertake continuous education on urban planning and management. Educational materials such as posters, leaflets and brochures indicating the benefits of urban planning and management, the consequences of the actions of all on the urban environment and the need for sustainable development of our urban areas should be developed for the purposes of education.

Radio talk shows, public fora, and seminars among others on urban planning and management can also be effectively used to educate the general public on urban planning and management issues and to solicit community support for the process, this will help enhance planning and reduce the problems that result in the urban environment.

Again, as indicated at 3.5.2 on the instruments for environmental integration, the use of process instruments such as visioning conferences which brings together all stakeholder groups to produce a city vision and undertaking baseline studies which compiles a list of city asserts and helps stakeholders to work together and focuses minds on their

community are steps if undertaken in the planning process will engender community spirit and create the needed awareness on urban planning and management issues.

5.2.2. Public Participation in Planning

Linked to the above, the planning system should be opened up by the MT&CPD in conjunction with the SPC and Municipal Assembly and the public encouraged to participate in the planning and implementation process to ensure mass involvement and enlarged compliance of planning regulations. This will also ensure community ownership of whatever plan is developed at the end. The Local Government system being practiced allows for grassroots participation in planning, the Unit and Area committees if strengthened in terms of capacity can be effectively used as points of mobilization to generate public/community engagement in the planning and management process of the urban area.

Public participation in planning will create the awareness of planning and management issues and the environmental issues that confront the municipality. This awareness will stem the spate of unauthorized developments, waste management and disposal problems, development in flood prone and catchment areas of water bodies and also work to preserve the urban environment.

5.2.3. Revision of Planning Laws and Regulations

Effective urban planning and management requires the availability of standards on all aspects of urban planning and management and effective legislative framework to support the process. It was however, identified through the study that the current legal regime for urban planning and management was inadequate in dealing with current urban functions and the socio – economic environment, and is also powerless in taking action against defaulters of planning regulations. The planning processes under the current planning regime are difficult and confusing and the laws have difficult procedures and mechanisms for plan preparation, approval and appeal, this have transcended to planning in the Sunyani Municipality.

Consequently, it is recommended that the current review of the planning laws in Ghana should expedited to provide the relevant framework for effective urban planning and management in Ghana generally and the Sunyani Municipality in particular.

The study revealed that the MT&CPD required EIA statements before certain developments were approved, however, as discussed at 3.5.2 and 3.5.3 in the second part of chapter three, several modern tools and methods have been adopted in planning and management of urban areas, it is therefore, further recommended that SEA which has been described as the family of 'tools' and embraces most of these tools and methods such as visioning conferences, expanded versions of EIA and cumulative impact assessment, GIS, aerial photography and a wide range of public consultation/participation approaches be adopted to plan the Sunyani Municipality by the planning authority, since this is the most appropriate and practicable in our case.

5.2.4. Effective Human Resource Development

To achieve an effective and sustainable urban environment, there should be adequate human resource for urban planning and management and urban development control. It is therefore recommended that; high priority is given to the training and recruitment of professionals, technicians and auxiliary personnel in the planning institutions, and the introduction of attractive conditions of service by government and the Municipal Assembly. The training of settlement planners at the Department of Planning of Kwame Nkrumah University of Science and Technology is a giant step in solving the human resource problem, aside this there is the need to provide those already in practice with refresher courses that will enhance their skill and increase their output.

This will bring about more professionalism into the practice of urban planning and management. The introduction of planning personnel to modern practices will reduce the delays and inefficiencies that have characterized the system.

5.2.5. Institutional Strengthening

The strengthening of institutions is a sure way of achieving good results. For urban planning and management to be effective in the municipality, it is recommended that

since the T&CPD is now under the Municipal Assembly under the new local government system, the ministerial oversight of the department be shifted from the Ministry of Environment, Science and Technology to the Ministry of Local Government and Rural Development to ensure a clear policy direction that will guarantee the effectiveness of the department.

Logistical problems of the department should be solved through direct budgetary support from the Municipal Assembly, and there is also the need for central government to help resource the planning institutions with modern planning equipment. The review of the service charter of the T&CPD and other planning institutions by government to enable them charge fees for their services and to raise resources to finance their operations is also recommended.

The result of this will be a vibrant planning department with logistics of the Assembly at its disposal and annual budgetary support that will facilitate the operations of the department in terms of financing of the preparation of base maps and staff motivation to ensure planning with dispatch. This will in turn enhance plan implementation, regulation and supervision of developments in the municipality.

5.2.6. Technological Development

Technological development is of great importance to urban planning and management as well as putting environmental issues at the forefront of planning and management of urban areas. Improved technology will assist in monitoring, compliance enforcement and environmental protection. Attention should be given to the development of new technologies and the upgrading of technological know-how to enhance effective planning. In this light, there should be the adoption of modern technologies in planning that is used in urban management and planning.

The application of Information Communication Technology (ICT) through the use of Geographic Information Systems (GIS), Remote Sensing and Aerial Photography for the management of urban areas as pertains in certain jurisdictions is recommended. The

adoption and use of ICT in planning and management is capital intensive and beyond the ability of the Municipal Assembly, this can therefore be achieved through government's intervention and donor support.

The adoption of this will improve the practice of planning such that environmental fragile areas will be identified and protected; monitoring and supervision of development will be enhanced and will serve as an early warning system to identify potential problems.

5.2.7. Integrated Urban Planning and Management

Environmental concerns are now at the forefront of any development. It is therefore recommended that conscious efforts be made to put environmental issues at the fore of planning and management of the urban area. The effective management of urban waste through the use of modern landfill site to ensure treatment and processing of the waste for the benefit of the urban population is a viable management strategy that is worth adopting to help achieve the sustainability of the municipality.

An integration of all aspects of planning and management of the municipality by unifying the development and physical planning departments at the Assembly into one entity to integrate social, economic, political, spatial, environmental and other dimensions of development will invariably result in efficient planning and management of the Sunyani Municipality.

This should be collaboration between the Ministries of Environment, Science and Technology and Local Government and Rural Development to change the policy where development planning and physical planning is done independent of each other.

5.3. Conclusion

The study examined the urban planning and management process in the Sunyani Municipality and how identified environmental issues were integrated into the process of planning and management.

The study has shown that environmental problems confronting the Sunyani Municipality can best be addressed if a conscious effort is made to integrate environmental issues into the planning and management of the municipality.

Undoubtedly, changes have occurred in the urban environment of Sunyani, and these environmental issues identified are convincing proofs that the environment is not just deteriorating, but the pace of urbanization and urban development makes it faster than one can imagine.

There is therefore, the urgent need for the legal framework governing urban planning and management in Ghana to be revised to conform to the current trends in the practice of urban planning and management where sustainable urban development is paramount.

The study reveals the fact that, it would be prudent to give special attention to the strengthening of urban planning and management institutions, effective human resource development for planning and related staff, adoption of modern technologies for urban planning and management, active planning education and public participation in planning and above all an adoption of integrated urban planning and management approaches.

The analysis confirms that there is the commitment by stakeholders at sustaining the environment in the Sunyani Municipality. It is hoped that the recommendations given herein, if effectively implemented not only in the Sunyani Municipality, but in all urban areas in general would enormously enhance the urban environment and make it a liveable place for its inhabitants.

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APPENDIX ‘A’

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF ARCHITECTURE AND PLANNING
FACULTY OF PLANNING AND LAND ECONOMY
DEPARTMENT OF PLANNING

Introduction

This interview questionnaire is a research instrument for my master’s thesis on **“Integrating Environmental Issues into Urban Planning and Management: The case of the Sunyani Municipality”**. This is an academic exercise and all information collected will be treated confidentially and will only be used for the intended purpose.

Institutional Survey for MT&CPD, Sunyani.

Section ‘A’

Urban Planning System in the Municipality

1. What are the main functions of the department?
2. Within which statutory framework does the department operate?
3. Statutorily how is urban planning carried out in urban areas?
4. What are the steps involved in urban planning?
5. What problems confront the department?
6. How are your activities financed?
7. What do you consider in approving building/development permits?
8. How are these considerations enforced?
9. What number of development/planning permits is issued annually and for what purpose?
10. What role do you play in the urban management process in the municipality?

Section ‘B’

The Relationship between Urban Planning and the Urban Environment.

1. In your opinion what is the relationship between urban planning and the urban environment?
 2. What environmental issues confront the Municipality?
 3. What steps are taken to address these environmental issues?
 4. Are your activities linked to the development plan and budget of the Municipal Assembly?
- If yes, explain.

Section 'C'

Methods for Integrating Environmental Issues into the Urban Planning Process

1. What are the major considerations in urban planning in terms of environmental issues (i.e. waste management, protection of flood prone areas and catchment areas of water bodies, erosion and storm control)?
2. In your planning practice, are there any principles that would;
 - a). Ensure the integration of environmental issues into urban planning?
 - b). Ensure that environmental problems do not result during the implementation of the urban plan?
 - c). What methods of integration do you adopt, if any?

Section 'D'

Key Issues Arising From Integrating Environmental Issues into Urban Planning

1. In the preparation of planning schemes/layouts what environmental problems are created?
2. In practice what environmental issues results from plan implementation?
3. What is the effect of urban planning on the urban environment?

Section 'E'

Improving Urban Planning

1. What changes would you want to see in urban planning in the Municipality?

Institutional Survey for the Municipal Planning Coordinating Unit

1. What relationship exists between your outfit and the Town and Country Planning Department?
2. What role do you play in the physical planning process of the Municipality?
3. What environmental problems confront the Municipality?
4. In your planning process do you take into consideration these environmental problems?
If yes, how and which environmental problems are considered?
If no, why?
5. What is the state of waste management in the Municipality?
6. What is the cost implication of waste management in the Municipality?
7. What are the ecological footprints of the Municipality?
8. Do you undertake ecoBudgeting?
9. What change would you want to see in the planning of the Municipality?

Institution Survey for the BIU, Sunyani Municipal Assembly.

1. What are your main functions?
2. What is your role in the physical planning of the Municipality?

3. What is your relationship with the Town and Country Planning Department?
4. What is your role in the protection of the environment of the Municipality?
5. What are some of the environmental problems you observe in your operations?
6. What is your role in solving these problems?
7. What are the problems of the division?
8. What is the state of development control in the Municipality?
9. What development control problems do you encounter in your operations?
10. What recommendations would you make for the improvement of urban planning in the Municipality?

Institutional Survey for Lands Commission, Sunyani.

1. What role do you play in physical planning of the Sunyani Municipality?
2. What is your relationship with the Town and Country Planning Department?
3. What is your role in the protection of the environment of the Municipality?
4. What are some of the environmental problems you observe in your operations?
5. How do you resolve land use and tenure conversion problems?
6. Do you have any role in enforcing building and land use regulations?
7. What is your role in initiating planning in the Municipality?
8. What recommendations would you make for the improvement of urban planning in the Municipality?

Institutional Survey for Survey Department, Sunyani.

1. What role do you play in physical planning of the Sunyani Municipality?
2. What is your relationship with the Town and Country Planning Department?
3. What is your role in the protection of the environment of the Municipality?
4. What are some of the environmental problems you observe in your operations?
5. Do you have any role in enforcing building and land use regulations?
6. What input do you make to the preparation of layouts for the Municipality?
7. What recommendations would you make for the improvement of urban planning in the Municipality?

Institutional Survey for Environmental Protection Agency

1. What role do you play in physical planning of the Sunyani Municipality?
2. What is your relationship with the Town and Country Planning Department?
3. What is your role in the protection of the environment of the Municipality?
4. What are some of the environmental issues you observe in your operations?
5. What steps do you take to solve some of these environmental issues?
6. What recommendations would you make for the improvement of urban planning in the Municipality?

APPENDIX 'B' – FIELD SURVEY RESULTS

MT&CPD – FIELD SURVEY RESULTS	
Issue	Data/information collected
Urban planning processes and procedure	✧ MT&CPD notifies LC of areas due for planning ✧ Base maps prepare by SD ✧ MT&CPD prepares scheme based on base maps, presents to SPC for comments ✧ Comments incorporated by MT&CPD and scheme approved by SPC for implementation by LC.
Problems/constraints of urban planning and management	✧ Lack of data and no use of modern planning methods ✧ Inadequate legal framework ✧ Inadequate human resource and logistics ✧ Poor financial resource base
Procedure for approving physical developments	✧ Formal application with attachments – permit jacket, site plan, architectural drawings etc. ✧ Prove of title and payment of requisite fees ✧ Vetting by technical subcommittee of SPC and approval by SPC
Relationship between urban planning and urban environment	✧ Urban planning used to protect urban environment.
Environmental issues in municipality	✧ Waste management problems ✧ Development in flood prone and catchment areas of water bodies ✧ Unauthorized developments and degradation of natural environment.
Methods of integrating environmental issues in planning	✧ Use of base maps, creation of greenbelts and buffers etc.
Ecological services provided in Sunyani	✧ Natural vegetation, greenbelts, forest resources, capacity of area to produce food fiber, fuel and water, streams, rivers etc.
Which environmental issues are considered urban planning and management	✧ Provision is made for the protection of water bodies, liable to flood and marshy areas; development in such areas is avoided.
Recommendations for improvement	✧ Improve human resource and logistics situation ✧ Revise legal framework ✧ Empower MT&CPD to charge fees.

MPCU – FIELD SURVEY RESULTS	
Issue	Data/information collected
Role in urban planning and management	✧ Coordinates with MT&CPD in planning the area.
Relationship between MPCU and MT&CPD	✧ MPCU is involved in development planning while MT&CPD does physical planning
Identifiable environmental issues	✧ Waste management, development in flood prone areas, flooding of properties during rainfall and degradation of natural environment.
State of waste management	✧ Collected and dumped, no processing of waste and no treatment. Area generally clean.
Adoption of methods of integrating environmental issues in planning	✧ SEA attempted in the preparation of the Medium Term Development Plan.
Recommendations for improvement	✧ Make MT&CPD resourceful financially ✧ Adopt ICT in physical planning

BIU – FIELD SURVEY RESULTS	
Issue	Data/information collected
Role in urban planning and management	✧ Enforces implementation of approved schemes and abates encroachments and unauthorized developments.
Role in protecting the urban environment	✧ Function is to regulate physical developments not environmental protection.
Role in enforcing building regulations	✧ Sanctions defaulters of planning laws and standards.
Environmental issues in municipality	✧ Flooding of some properties at Penkwasi, development in flood prone areas at Gozokrom, Nkwabeng and degradation of natural environment.
State of development control	✧ Very good except unauthorized developments at Yawhimakrom, Kotokrom south and Abesim Kyidom etc.
Development control problems	✧ Lack of staff and logistics, no provision of infrastructure and utility services at new areas.

LANDS COMMISSION – FIELD SURVEY RESULTS	
Issue	Data/information collected
Role in urban planning and management	✧ Grants title for specific uses, manages lands in the area and implements approved schemes.
Role in enforcing building regulations and development control	✧ Assist BIU to abate encroachments and unauthorized developments.
Initiating planning in the municipality	✧ As managers of lands commissions SD to prepare base maps at the prompting of MT&CPD.
Environmental issues in municipality	✧ Flooding at Penkwasi, development around the banks of Agyei Ano and Sunyani streams, replacement of natural environment with buildings.

SURVEY DEPARTMENT – FIELD SURVEY RESULTS	
Issue	Data/information collected
Role in urban planning and management	✧ Prepares base maps for planning purposes.
Role in protection of urban environment	✧ Identifies environmental fragile areas in base maps for protection.
Environmental issues in municipality	✧ Degradation of the natural environment and unregulated use of natural resources.
Role in preparation of layouts/schemes	✧ Pillaring after scheme is prepared.

EPA – FIELD SURVEY RESULTS	
Issue	Data/information collected
Role in urban planning and management	✧ Member of SPC, advises MT&CPD on environment issues and standards.
Role in protecting urban environment	✧ Notifies MT&CPD and BIU on actions that adversely affect the environment.
Environmental issues in municipality	✧ Flooding, land erosion, development in flood prone areas, waste problems.
Solution for environmental issues	✧ Education of the general public on these issues and action by the SMA in controlling and managing these problems.