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## **MASTER'S PROGRAMME IN URBAN MANAGEMENT AND DEVELOPMENT**

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## **Urban planning as a tool of Environmental Management in Kamwenge Town-Western Uganda**

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## **Dedication**

This work is dedicated to my dear parents, Mr Okiror Juventine and Mrs Okiror Grace, who have been caring parents all throughout my education.

This also goes to my fiancé Joseph Kayiira for his constant encouragement and patience.

And not forgetting my sisters as Hellen, Hildah, Caro and Betty. Brothers Felix and Lambert. God Bless them all.

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Despite the tight schedule, by God's Grace, I have been made possible to accomplish this work with the cooperation of various people. Therefore, they deserve a vote of thanks and sincere gratitude to all those, whose assistance in one way or the other, enabled me present this work.

First of all I would like to honour the spiritual guidance of the Man of God, Pastor Jeremiah Ssebakijje and the prayers of World Answers Church International; Glory and Honour back to the Lord.

I would like to thank my lecturers, at most the specialization lecturers and all staff of IHS, who have enriched me with sufficient knowledge for twelve months. And not forgetting the Town Council officials of Kamwenge and the local community who allowed me carry out my research in the area, then provided necessary information on the topic regardless of any pay.

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However, all mentioned, I am indebted to only share in the merits of this work but I remain personally responsible for the views and contexts of this work.

## **Abstract**

The existence of environmental problems in Kamwenge Town is due to lack of urban planning. Therefore the study is aimed at finding how urban planning can be used as an effective regulatory tool in the management of environmental problems in Kamwenge Town Council in western Uganda.

The study focused on three objectives of determining the influence of urban planning in urban environmental management; establishing how Kamwenge Town can use urban planning in the management of its environmental problems and finally suggesting recommendations for effective urban planning in management of urban environmental problems in Kamwenge.

This is an exploratory case study which employed questionnaires and interviews to obtain primary data. Maps, photographs and the use of existing literatures were used to extract secondary data. A sample size of 60 was chosen, with 40 questionnaires administered to the respondents of the community in Kamwenge Town, 10 questionnaires to the Town Council officials and 10 interview schedules to different organizations and Line Ministries. The selection was based on random and purposive sampling methods.

The findings of the study indicated that environmental problems experienced in the Town such as air, noise, and water pollution are partly due to lack of enforcement of the existing urban plans. Another finding revealed that the Town Council is faced with management problems like limited financial resources, institutional capacity, and lack of committed leaders. Above all poor implementation of the land use plan was a challenge to the managers. The study further revealed that despite the several management problems experienced, there are still various stakeholders willing and involved in the environmental management right from the national level to local level. Lastly one of the findings portrayed that there are already a number of strategies that have been taken up to improve on the effectiveness of urban planning in Kamwenge and some of them are ongoing like revision of the Town and Country Planning Act, creation of an urban planning directorate, revision of the urban planning budgets. Further operationalizing the Property Act of 2005 would make the council earn the much needed revenue because the council will henceforth levy property rates on commercial buildings.

Conclusions were also drawn from the study which includes the lack of effective enforcement and implementation of structure plans that would have fixed some of the environmental problems in Kamwenge Town. Further it was found out that the council lacks human and financial capacities to conduct proper urban planning and management, there is lack of information data bank, lack of coordination of the various stakeholders working in the environmental management and failure to sensitize the community on the importance to maintain a clean environment by way of abiding by the urban plans.

Some of the recommendations are that the legal framework need to be strengthened and adhered to at all times; human and financial capacity be improved and data banks and information centre established besides stepping up sensitization campaigns among the community members.

## **List of Abbreviations**

MOLG	Ministry of Local Government
CBD	Central Business District
CBO's	Community Based Organizations
NEMA	National Environmental Management Association.
KTC	Kamwenge Town Council
NGO'S	Non Governmental Organization.
DDP	District Development Plan.
UBOS	Uganda Bureau of Statistics.
IHS	Institute of Housing & Urban Development.
TCPA	Town and Country Planning Act.
EIA	Environmental Impact Assessment.
NPA	National Planning Authority
KTC	Kamwenge Town Council
DFID	Department for International Development
ICLEI	International Council of Local Environmental Initiatives
ESRC	Economic and Social Research Council
TPCRIBA	Town Planning Committee of the Royal Institute of British Architects.
GIS	Geographical Information Systems
DTPC	District Technical Planning Committee
DEO	District Environment Officer
KDLG	Kamwenge District Local Government

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## **Chapter one**

### **1.0 Introduction and Problem Statement**

Urban planning is a dynamic discipline that involves a process which aims at improving the welfare of people and their communities by creating good living environments in a more convenient way, equitable, healthful, efficient, attractive and environmental protection for present and future generations.

Urban planning depends on a multidisciplinary approach that gives an opportunity to various governments, communities, private sectors and civil society organizations to identify their own problems, analyze those problems and explore options in pursuit of general goals and specific land development issues on how and where location of activities should be carried out, this helps them to balance between environment and development (Gordon, 1974). Urban planning therefore works to achieve the following goals:-

Environmental quality, health and safety of various communities, convenience in terms of location of activities and movement of people, ensuring efficiency and energy conservation, encouragement of social choice and equity where by equal opportunities of access to necessities of life is encouraged. Urban planning ensures that proper location of shelter, education facilities and health centers, work places among others is achieved for balanced development (MOLG, 2003b).

Curitiba in Brazil can be seen as an example of successful urban planning; its master plan has made it an ecological city through improvement of urban life, rational use of land for transport and other developments while maintaining a harmonious relationship with the natural environment. It's important to note that most of the livable and sustainable cities in the world owe their success to effective and prioritized urban planning by way of having spatial plans that promote good living environments (Baldwin, 1988).

### **1.1 Background of the problem**

In developing countries, development is ahead of planning and therefore there has not been a success in attaining its objectives of creating good living urban areas compared to developed countries where planning regulations and spatial plans have been key to orderly, attractive, safe, and healthy cities (NMP, 1993). Although, urban planning may have had some weaknesses and failures in trying to achieve its aims, it started during the Industrial Revolution in Britain, as a response to poor quality urban conditions and problems (Eversley, 1973). The increase in population in the 19<sup>th</sup> century also led to growth of towns and public health problems and this made London to adopt planning legislations in 1909 after the public outcry so as to achieve better urban environmental living conditions (Luckin, 2006).

Planning in Uganda started mostly in urban areas during the colonial times. Colonialists had well organized administrative centers (headquarters) and organized areas of residence. In 1902 the British government proclaimed the township of Kampala comprising of Nakasero hill, Kololo hill, Makerere hill, parts of Mulago hill, Nakivubo and Old Kampala. The boundaries of Kampala kept on being extended over the years. During this time, planning was done by colonialists and the chief planner

was Simpson who was based in Nairobi. The first systematic planning scheme of Kampala was prepared in 1912. Under this scheme, land for establishment of government offices was reserved. In 1918, there was establishment of the Town Planning Board, which prepared a new plan for Kampala. Another plan was prepared in 1930 and this plan laid down the lay out of roads, drains, sewers and power lines. In 1951 the Town and Country Planning Act (TCPA) was enacted and a new plan was prepared which inter-alia took into account the topography of the area and recommended that valleys in the town be preserved for forests and that the swamps should serve as green areas. Currently the Town and Country Planning Act of 1964 which is under revision is still used by Local Governments to help them plan their urban areas. This law is quite obsolete since so many things have to be changed to match the current trends of development in Uganda so as to enable it act as a means to good living urban environments. Through the Local Government Act 1997, Urban Authorities do have the responsibility and function of planning and managing the urban environments while the National Environmental Statute 1995 requires National Environmental Management Authority to prepare a national Action Plan which is to be reviewed after five years. The action plans in Kamwenge Town Council have to fit into the National Action plans. Environmental management of the urban environment in the Town Council is a process that still needs adequate attention by the policy makers and line ministries concerned.

## **1.2 Problem Statement**

The less attention paid to urban planning by all stakeholders right from national to local levels as a means of attaining good living environmental conditions in towns has led to unattractiveness of the Towns in Uganda. This is even reported in the local media on how urban planning in Uganda, if given priority could act as a mean's of environmental management and creation of orderly developments in urban areas (Monitor, 2007).

Kamwenge urban environment is planned and managed by the Town Council, as per the Local Government Act of 1997. The Town Council has continued to experience worsening urban conditions like water, noise and air pollution, poor sanitation, encroachment on ecologically sensitive areas, unplanned settlements characterized by crowding, poor drainage and poor accessibility. The existence of urban environmental problems in Kamwenge Town poses a great challenge to the livability and sustainability of the town.

The new participatory approaches being introduced to manage the urban environmental problems world wide, have also not paid attention to the role urban planning plays in all urban projects, instead, the new approaches have not established the origin of urban problems and how they were tackled as it was with the case of developed countries whereby urban planning was applied to improve on public health and poor environmental concerns in urban areas during the industrial revolution in Britain (Gordon, 1988).

Due to the many environmental problems faced by Kamwenge Town Council, there is need to assess the effectiveness of urban planning in management of the Town environment.

Taking cognizance of the new participatory approaches being introduced in managing urban environmental problems world wide, further reinforces the need to assess whether there is a correlation between urban planning and the new approaches on one

hand and urban environmental management in Kamwenge in particular and other Town Councils in general on the other hand.

### **1.3 Objectives of the study**

1. To determine the influence of urban planning in urban environmental management.
2. To establish how Kamwenge Town can use urban planning in the management of environmental problems.
3. To suggest recommendations for effective urban planning in management of urban environmental problems in Kamwenge and other Local Governments.

### **1.4 Research Questions**

#### *Main question*

How can urban planning help to effectively solve environmental problems in Kamwenge Town?

#### *Sub-questions*

1. What are the main urban environmental problems?
2. What are the problems encountered in managing the urban environment in Kamwenge Town?
3. What roles do the different stakeholders play in urban environmental management in Kamwenge Town?
4. What strategies should be used to improve the effectiveness of urban planning in the management of urban environmental problems?

### **1.5 Justification of the study**

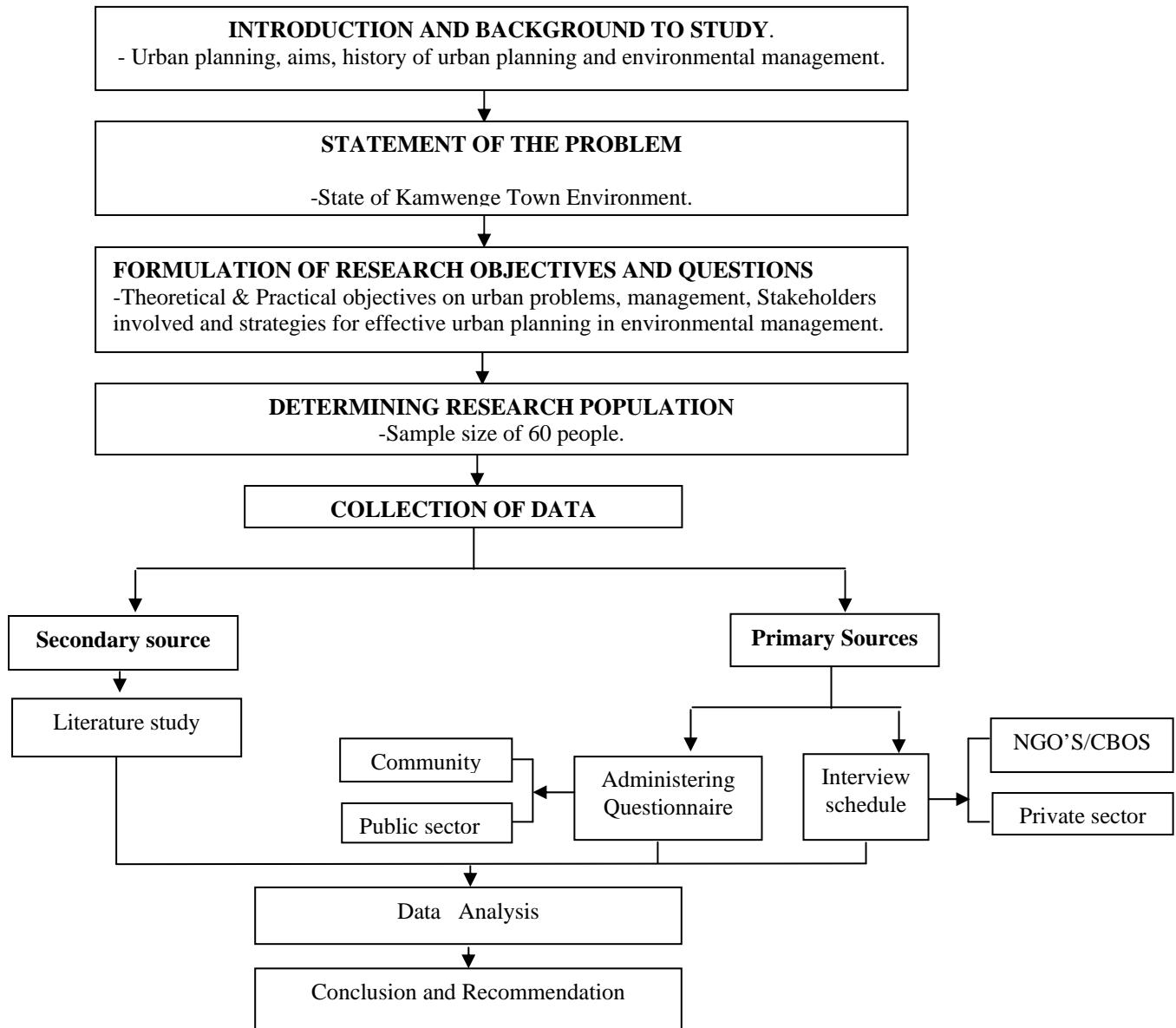
When carried out successfully the study findings will benefit the Local Government and avail necessary information and knowledge on how to deal with urban environmental problems more so to the urban authorities that are growing at a faster rate. The study will benefit other Local Governments too in Western Uganda.

The study is also a requirement for the award of an Msc degree in urban management and development.

### **1.6 The Research Design**

The research design was used to guide the researcher to get a well-established focus on the study as seen in the figure below.

**Figure 1: Research design**



## 1.7 Thesis Structure

The thesis report has a composition of six chapters as below:-

Chapter one includes the introduction, background of the problem, statement of the problem, research objectives, research questions, design, structure and justification of the study. The second chapter contains information on literature and theoretical framework for supporting arguments based on previous researches right from global to local level.

While the third chapter, does describe the area of study which is Kamwenge Town Council in Western Uganda. The next Chapter which is four contains information on methodology, variables, data collection and analysis. Chapter five discusses the findings of the research based on the research questions. And finally the last chapter six presents conclusions and suggested recommendations to be relied on or it could be for further research.

## **Chapter Two: Land Use Planning and Environment**

### **2.0 Introduction**

This section is presented from a wider perspective to a narrow perspective in that the researcher presents literature related to the topic. Such literature is actually based on the objectives of the study. Therefore it's related to different theories, concepts on effectiveness of urban planning in environmental management, analysis of urban environmental problems, and practical experiences of countries on management of urban environments, and finally strategies to improve effectiveness of urban planning in environmental management.

### **2.1 Urban Environmental Problems.**

By definition, an urban environmental problem is referred to as; the presence of pathogens or toxic substances in the human environment, which can damage human health or physical resources such as, forests, fisheries or agricultural land. It may be looked at as inadequate supply of resources essential to human health or urban production like having no sufficient fresh water (Hardoy et al., 1992).

They have identified the different problems that could be found in cities in relation to the level of development. Developed cities in Europe, Japan and North America are experiencing high levels of air and water pollution, solid waste including toxic or hazardous wastes. These are the major environmental problems that dominate the big cities in the developed countries.

They further explain that Industrialization is the main cause of air and water pollution, followed by increase in vehicle usage through congested traffic, inefficient and poorly maintained engines in most road vehicles and therefore increased gas emissions from the fossil fuels. There is a possibility of land and water pollution resulting from high proportions of households and business not served by sewers, drains and garbage collection.

While Silitshena (1993), defines an urban environmental problem in the same way and outlines the problems found in developing countries mostly in Sub-Saharan Africa as being minor to developed countries. Cities are growing at a faster rate and due to the urban growth, most cities are characterized by poor living conditions such as air water and noise pollution, inadequate basic services, poor infrastructure, dangerous and unhealthy sites of some neighborhoods like irregular collection of garbage from storage points ,traffic jam etc.

He explains further that, massive rural-urban migration is seen as the main factor behind urbanization in developing countries whereby this movement of people is attributed to high population growth rates in both rural and urban areas, search for job opportunities due to the high rate of unemployment in rural areas, search for better social services including educational, health services and water, and finally civil strife in some parts of the countries and this builds pressure on the urban environments.

The two authors have defined environmental problems in a way that depicts the situation of developing towns in Uganda, for which the study seeks to determine the nature of environmental problems in Kamwenge Town. The scale and cause of air pollution in Kamwenge Town may differ from that described in developed countries. Indeed, 80 % of the diseases found in Uganda's urban areas may be due to poor environmental conditions (NEMA, 2005) . The report further, states that malaria which is the first killer disease in Uganda, is persistent because of the fertile breeding grounds from the stagnant water emanating from poor drainage. There are also waterborne diseases such as cholera from poor sanitation and finally dust from indoor pollution or the near by roads. All these problems have got an impact on to the natural environment since the people will be spending a lot of money to buy drugs and this will take up a high percentage of their household income in the end they resort to cutting trees for charcoal and farming on wetlands.

## **2.2 Challenges of Managing Urban Environments**

The existence of so many environmental problems in African Cities is attributed to the following;-Poor urban institutions, inadequate financial resources in Local Governments, inability to cope with demands of rural –urban migration, inadequate personnel, corruption and finally ineffective planning and development control (Silitshena, 1993). He further points out that; deteriorating urban environments in cities is due to lack of effective implementation of development control since urban planning is not given priority in African cities. This has led to haphazard developments and informal settlements in most cities.

Another management challenge involves meeting sustainable urbanization as an aspect in environmental management (DFID, 2002). Priorities have been set up and one of them involves recognizing the value of reserving areas of undeveloped land in peri-urban and where appropriate, in urban areas for agricultural, ecological and recreational purposes and strengthening development regulations and support systems to identify, safeguard and promote productivity use of such areas.

Other priorities and action areas that could help in meeting the challenge of sustainable urbanization include;-good governance, stakeholders participation, community involvement, strengthening Local Governments, provision of basic infrastructure like water, sanitation etc.

While the researcher agrees with the two authors, less attention is paid to urban planning in Local Governments in Africa, environmental problems have continued to exist in urban areas and also meeting the challenge of urbanization needs a collective approach right from international level to local level. This could be done by appreciating the fact that, most of the well planned cities in the world today, planning comes first before any developments. African cities need to apply preventive measures in management of urban areas and this could be through proper location of activities in cities in order to avoid haphazard developments and environmental impacts (Kinuthia, 2002b).

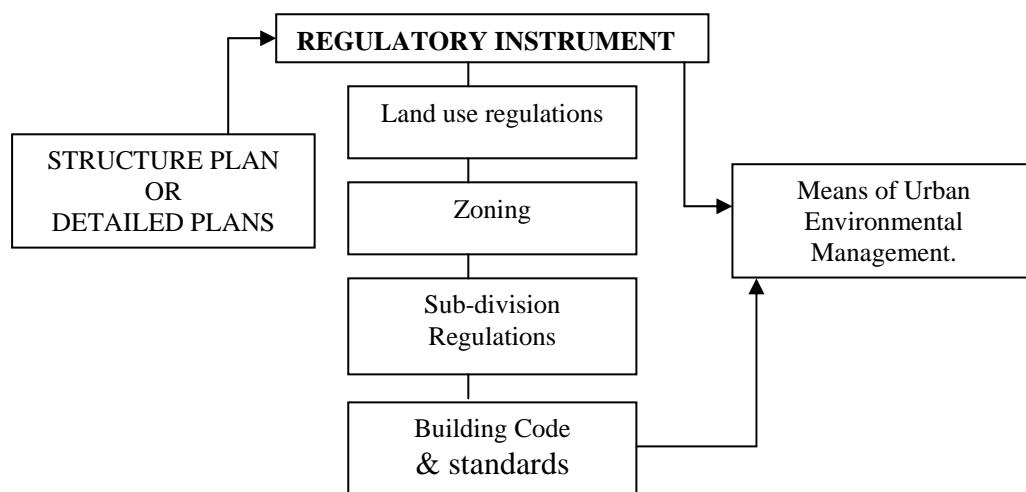
Coupled to the above, reservation of land in urban areas for urban agriculture and open spaces, is basically a function of urban planning in any development process.

The management of environmental problems in Africa is believed to be arising from the inability of the public sector authorities to enforce regulations governing land development, industrial emissions and therefore the urban poor are the most exposed to environmental hazards by depending on untreated water, living in risky areas, to be un provided with sanitation and solid waste collection services, living in overcrowded conditions and working in unregulated enterprises (Rakodi, 1997). Rakodi indeed explains that the Governments in Africa do take action to manage environmental problems when a disaster occurs and she also calls for an organized action towards tacking of negative externalities of the environment such as pollution directly and perhaps proper solid waste management by promoting recycling in cities.

She further mentions that master plans may not be the appropriate solution management of the urban areas and associated environmental problem due to its failures over the past decade to control developments.

While the researcher, acknowledges that the inability of the governments to enforce land use regulations and the master plan have been responsible for poor environmental conditions in African cities, it would be vital to pose a question of how, best can land be regulated in African cities?. Well, land use planning may not be the a absolute solution for urban management but in the mean time as researchers look out for the perfect solutions then, land use planning can still be supported to act as a regulatory tool .Its vital to note that some cities like Rotterdam in the Netherlands use spatial planning also known as urban planning to guide, control and regulate developments on land (Embassy-NL, 2007).

**Figure 2: Urban Planning as a Regulatory Tool**



The figure above, illustrates how urban planning as a regulatory tool could be used in Local Governments in Uganda; unfortunately all these standards have remained on papers in many cities perhaps with no exception of Kamwenge Town.

This research seeks to bring out the benefits of Local Governments to give priority in location of activates in towns. Without a development plan, then the cities will have no control over developments, related demands for services and unable to enforce the separation of incompatible land uses such as residential and industrial operations that

would have an effect on to human health. Overall, planning controls effects of urbanization and informal developments on to the urban environment.

## **2.3 Urban Planning and Environmental Management**

### **2.3.1 Historical Perspective**

During the 19<sup>th</sup> century, most cities in Europe were being faced with public health problems associated with poor living environments due to the pressures of industrialization, poverty, crowding and disappearance of traditional ways of living (Michael and Anthony, 2000). Taking an example of England, in the mid 19<sup>th</sup> century, as the cities were growing economically, the living conditions in the urban areas were deteriorating and therefore people opted to move from the city centre to the suburbs especially for those who had better incomes. The poor who could not move were then affected by disease outbreaks, a condition that lead to innovation of environmental remedy through town and country planning Act (1932) by (Chadwick, 1965). Chadwick emphasized on public health and environmental management by introduction of legislations on town and country planning.

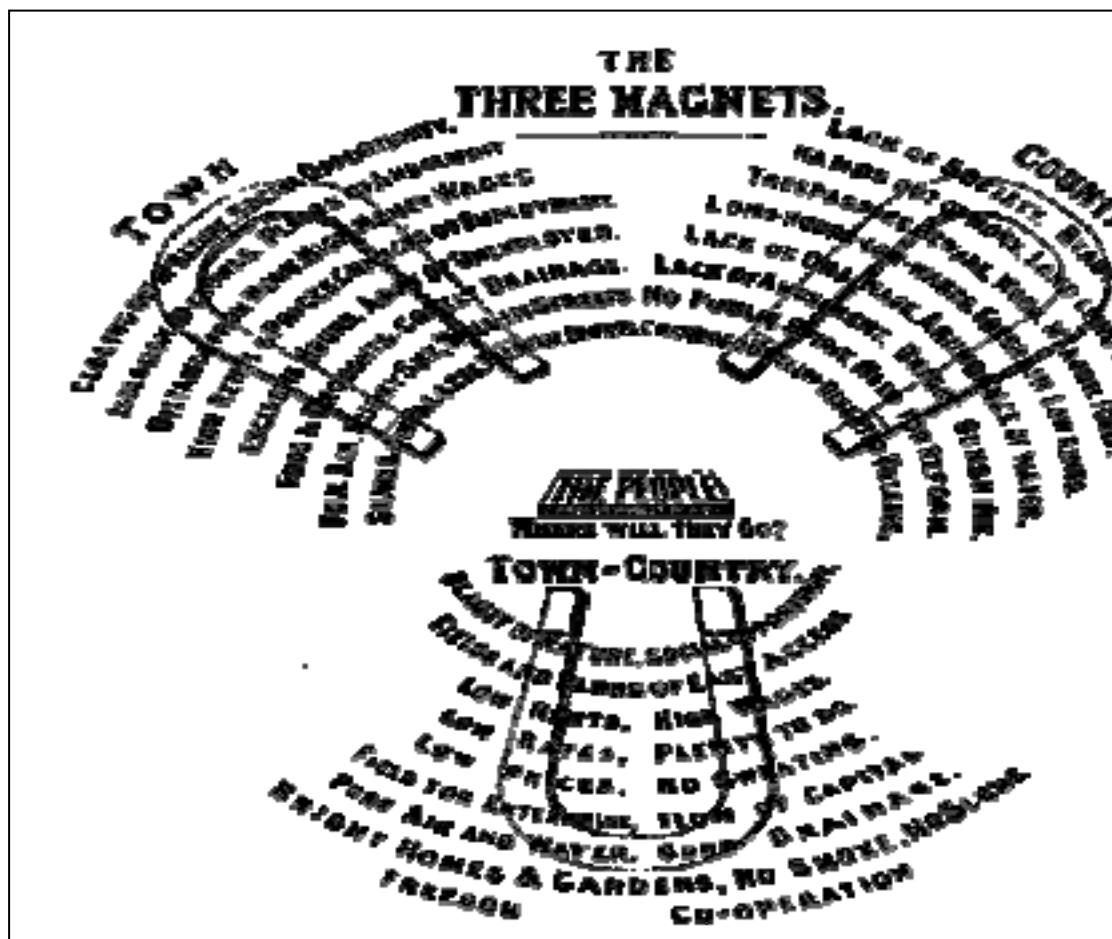
When considering the above views, there is a contemporary relevance to this historical account; the failure of most of the cities in developing countries to implement such ideas and workable solutions is the reason why many of the towns are experiencing environmental problems in urban areas such as, inadequate housing, poverty, poor sanitation, poor drainage, traffic jam, pollution, poor accessibility, lack of green belts and solid waste management problems. Kamwenge Town is not any different from such towns that may have not managed to take advantage of urban planning in order to manage its living urban environment.

The reservation of areas for special purposes is a historical argument that was suggested by architects in Britain (TPCRIA, 1911). They suggested that separation of activities from residential buildings was vital like Industrial sites that were believed to have smoke, noise and smell. Sites were then reserved and buffers created for filtration of polluted air from the industries. This shows an element of environmental concern in urban planning. The city plans addressed environmental and health concerns through separation of activities.

While emphasis on the necessity of having parks in the city plans was promoted by (Lewis, 1910). He explains that before street lay outs are proposed in any urban areas for balanced developed then park sites should be established due to environmental components associated with parks.

The garden city movement also gives light of what planning plays in creation of open space known as green belts as seen in some of the cities that were planned with green areas being given priority and surrounding them (Howard, 1898). Such cities include; Letch worth Garden city located in north London, Welwyn Garden city also in London and Hellerau in Germany (Bellamy, 1888).

**Figure 3: The town and country planning**



Source; Howard's Three Magnets' diagram.

When considering the attempts of this movement, it was mostly concerned with “where people were going to live in future” and therefore green belts were reserved for aesthetics and eventually for future expansion. The Garden city movement was also concerned with agricultural gardens in the cities such that towns developed were being surrounded by gardens. On the other hand while the movement advocated for green areas and agricultural land, the economists look at that as being wasteful of land (Eversley, 1973).

However today, in Uganda, the green belts that were reserved in the colonial times are being developed without considering their advantages, land use planning does not take into consideration this aspect of green areas which is not widely understood in Uganda, as politicians are selling off park areas, open spaces to developers without considering the necessity of such recreational sites (Apollo Mubiru, 2007).

When looking at the farming gardens that the movement proposed, Uganda's towns are losing it all to estate developers and therefore having land for agriculture and open spaces in the towns is viewed as a waste of land .

### 2.3.2 Applied experiences of urban planning in environmental management

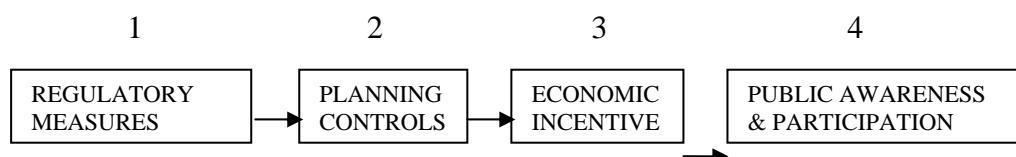
Curitiba is seen as one of the cities that has the best and most sustainable transport system in the world. It has got a public system of transport, which owes its success to urban planning that started in 1960's. Curitiba's land use plan promotes an integrated transport system, environmental preservation, income generation by strategically locating industries near people who need jobs (Taniguchi, 2001).

Curitiba's Mayor, further explains that since he got to the municipality, he's approach was participatory whereby the local community is involved in decision making. As for the environmental issues, by the time the world discovered in 1990's the need to have green areas in cities Curitiba had already moved a step to preserve its valley tops and green areas and this was much more strengthened through a zoning and land use law which was passed in the year 2000.

Therefore urban planning has played a role in reserving land for an integrated transport system, complementary developments and preservation of green areas in the city for which the study will try to determine in Kamwenge Town as well.

Singapore has also been recognized for its good practices in enhancing environmental quality for its citizens in spite of the rapid economic development (Leitmann, 1999a). The city has applied a variety of good practices to deal with environmental problems. The current approach to environmental management in Singapore consists of the regulations and measures of how to manage their urban areas.

**Figure 4: Singapore Urban planning / land use planning**



The figure above illustrate how Singapore use urban and land use plan as a major means of environmental management in Singapore's and its plan seeks to address the following by 2020.

Singapore's plan further seeks to identify the development constraints and land uses that affect the environment, projection of land needs for environmental infrastructure, Identification of areas for siting pollution prone services, infrastructure and locating areas for nature conservation.

While the author, describes how in Singapore planning has been used as a tool to address the concerns of environmental health, pollution, siting of activities, transport and protection of green areas, in Curitiba still the author has also highlighted the role of urban planning in efficient transport system and these efforts have come overtime.

Today the transport systems in Uganda is faced with challenges of traffic jam and congestion, people have built in road reserves and therefore no space for future expansion for which the study will try to figure out the role of planning in transport in Kamwenge.

### **2.3.3 Current Perspective of Urban Planning in Environmental Management**

One of the recent ideas is about the failures of urban planning in controlling developments and environmental problems such as slums and its associated problems in developing countries, it's important to relax building standards and allow people to put up "tolerable but cheap housing" In this way squatter settlements can be improved or avoided (Habitat 1987:175). There is also another argument about the same as there being a need for revision and reduction of planning and subdivision standards mostly for residential developments, subdivision standards which are believed to be too high, like, streets width are so generous, the length of blocks are too short and width of the plots very wide (Dowall, 2003). In addition, he stresses out that analysis of those problems was carried out and that there is need to have standards, building codes revised particularly for industrial and commercial estates by architects, bankers, builders, real estate brokers and neighbourhood associations to draft more affordable standards (Rakodi, 1997).

Whereas, it's true urban planning standards in developing countries have not been effective in managing urban environmental problems and trends in development. From the practical point of view there is need to revise the building code standards, zoning and sub division standards. This is even made worse with the time that is entailed in the process of building plan approval. These standards have not responded to the needs of the poor communities who live in informal settlements and yet 72 percent of Africa's population lives in slums. And slums may be looked at as urban areas that are heavily populated characterized by poor living conditions. Perhaps a new paradigm of urban planning would bring positive changes and measures to urban areas (Kinuthia, 2002a). New planning approach is also supported by (William, 1990).

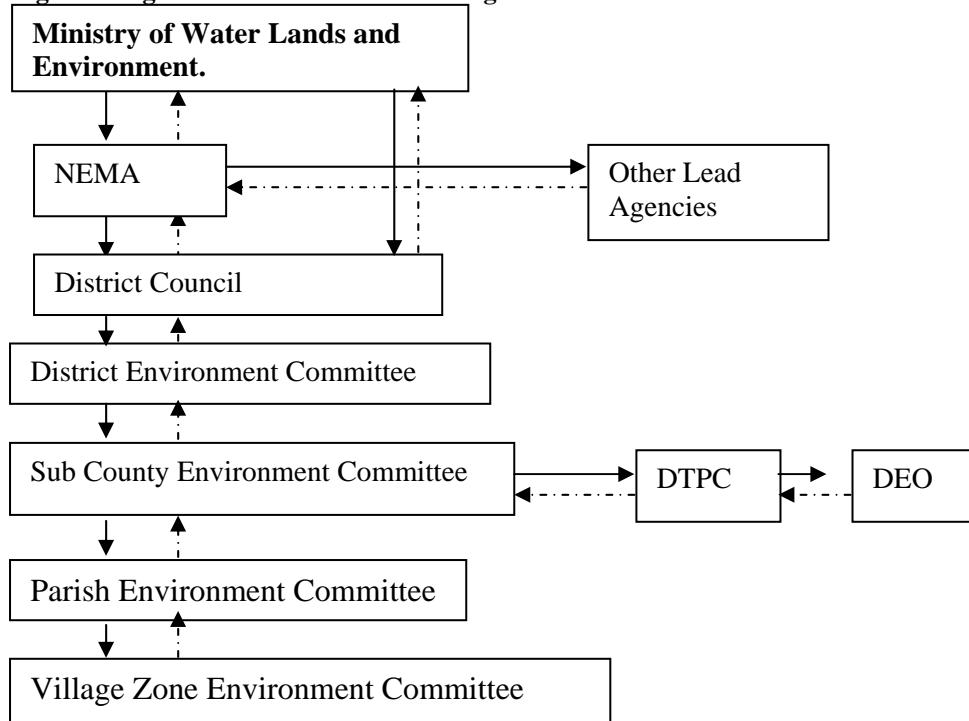
According to the news letter on urban environment, in Sub-Saharan Africa, 72 per cent of its urban population lives in slums (UN-Habitat, 2006). Africa has registered the highest annual urban growth rate of 4.58 per cent and the highest slum growth rate of 4.53 per cent in the whole world. The paper also reports that poor urban planning is a cause to deteriorating urban environment in most cities and also to proliferation of slums.

On the other hand, it points out what was emphasized during the World Urban Forum II, as there being a need to turn ideas into action in order to achieve sustainable cities, the idea of reinventing planning as a new paradigm for sustainable urban development was stressed. The Forum placed a strong emphasis on urban planning as a tool for urban development and environmental management. It's important to note, that this view was acknowledged by not only government officials and urban planners themselves but also by the civil society organizations who realized that urban planning should be more inclusive, transparent and ethical. The Forum further stressed out the important role of planners as agents of change and underlined the importance of sustainability as the backbone of new forms of planning (Van den Berg, 2004).

However while the researcher agrees with the idea of putting emphasis on planning, she does not agree with the idea of poor planning being the cause of slums in Africa, because not much has been done to integrate urban planning to environmental management in urban areas. Planning is one discipline that has not got the attention it

deserves in order to achieve its objectives and therefore susceptible to all criticisms of nature from all kinds of disciplines and professions. However, this has generated new ideas on how planning can be integrated into environmental management or vice versa in urban areas as it is the case with Uganda's management system.

**Figure 5: Uganda's Environmental Management Framework.**



**KEY:**

- Coordination, Supervision, Monitoring, Capacity Building.
- Reporting and Information flow.

DTPC – District Technical Planning Committee.

DEO – District Environment Officer.

NEMA- National Environmental Management Association.

Source: NEMA, (2000/2001), *the state of Environment Report for Uganda (slightly modified)*.

When considering the above management structure- figure 4, urban areas are most likely to suffer a set back since there is only one District Environment Management officer who is responsible for the District and the Town Council for which the study will identify. The Planning and Management of Kamwenge solely lies in the hands of the Town Council and therefore environmentalists need to appreciate the role of planning in tackling some of the challenges. It's important to note that all human activities do take place on land and this need to be organized in order to achieve sustainable development.

Land use planning is believed to play a critical role in environmental protection, housing provision and poverty alleviation (Dowall, 2003). The quality of the urban environment greatly depends on how land in cities in urbanized. He also argues planners to introduce market discipline into land use policy formulation especially in Eastern Europe and China where economic reforms are under way. He further explains that this has to be done in line with broad environmental planning objectives, He proposes that, in the process of setting new land regulations thorough assessment

of environmental areas should be carried out in order to limit development in ecologically sensitive areas.

Much as one of the objectives of urban planning is to protect the environment, land management is also a component that the author proposes for the developed countries which could be applied to developing countries in terms of supply and demand of land in urban areas.

## **2.4 Stake holders in Urban Environmental Management.**

The management of urban environments requires partnerships by clearly streamlining the roles of urban authorities, researchers and civil society (Wacker et al., 1999). The authors' further explain the case of Jinja in Uganda that has embarked on stake holder approach by involving the communities in management of its urban environmental problems so as to achieve sustainable development by making them feel part of the management team.

The urban management programmes as being one that promotes the involvement of all citizens in environmental management in cities (Kinuthia, 2002b). The author further argues for action planning and city development strategies that involve a series of consultative meetings in managing environmental living conditions in cities.

Besides, Local Governments are promoted to take local action in cities in order to create sustainable communities and protecting global common goods while removing barriers to sustainable development (ICLEI, 2002).

This study will show who is involved in environmental management and how urban planning is a discipline that involves all stakeholders in plan preparation right from the residents, private sector, and civil society. Therefore the planning process involves all actors who emerge ideas and come up with a spatial representation inform of a plan. Urban Planning covers all aspects and interests of different stake holders, politically, socially, economically, culturally and environmentally.

Today, due to global warming in the world, cities are being encouraged to mange their own problems in order to reduce carbon dioxide emissions in the atmosphere(ESRC, 2001).In addition the author is also advocating for environmental justice in order to manage environmental problems because the poor are the most heavily vulnerable members of the society. Others who are vulnerable too include the old and very young in cites. Whereas, other countries, have described and emphasized on urban environmental management as a collective responsibility where things like air pollution need a joint approach of all urban mangers (Dijk, 2006)

Environmental management covers many aspects like poverty and undesired effects of human activities or operations on the environment (NMP, 1993).

While the argument of justice is good for global environmental management, on the other side it encourages irresponsible poor people and they will miss use natural resources under the disguise of justice and therefore the researcher does not agree with this statement.

The private sector plays a role in capacity building more so on environmental matters by creating awareness this is done through trainings that promote good environmental practices for example in green transport, proper solid waste management (ICLEI, 2002). In addition by involving the community, in environmental management democracy and empowerment is encouraged. Whereas, the approach of partnership

between the NGO's, community, and the private sector does promote development that is owned by the people which then leads to the success of the environmental projects and management (Leitmann, 1999b).

## **2.5 Approaches to Effectiveness of Urban Planning.**

There is a move proposed to shift from master plans to City Development Strategies. (Kinuthia, 2002b). It's predicated that many of African cities' population is most likely to double in 15 years and this is posing an urban challenge. The author further points out that the problem in African cities is that policy makers and politicians are not asking themselves the following questions;-Where will the increasing urban residents live? Which land should the increasing population use? Where and which schools will their children go? Where will they get water, How will this increasing population dispose garbage? Who will protect the increasing population? Will the increasing population have chance to see natural features? This challenge is seen by the present trends of development in these cities whereby people are now living in overcrowded and un serviced slums, often situated on marginal and dangerous land, inadequate access to clean water, solid waste is uncollected by Local Governments of which its untreated and this affects the human health of urban residents. She explains that urban planning has failed to meet the challenges in urban environments and therefore it's hoped that City Development Strategy is a tool in urban management. The author also stresses that Community Development Strategy is not a new plan. But it is a dynamic urban planning and management approach in which urban development activities can be coordinated through exchange of information, leveraging of resources and purposeful partnerships (Leitmann, 1999b).

While new approaches to management of African cities are being introduced as alternatives to urban planning, there is need to ask various questions;-

What is the origin of planning? What problems was it meant to address? Why has it succeeded in other countries and where and why has it not succeeded?

For this reason, it's worthwhile to note that urban planning does not take place in a vacuum. It's affected by the external economy, by population dynamics, attitudes of government; attitudes to urban planning itself by the community, It's also affected by the competence and credibility of the organization developing and trying to implement the plan (MOLG, 2003c). However, these factors determine the success of any new approach to urban management.

Urban planners are advised to take advantage of the role of Internet and Geographical Information Systems in participatory development control approaches'(Kahila and Kytta, 2006). In Finland a special web based soft GIS method was carried out to collect locally the perceived quality factors of the residents attached to their living environments. The study helped the urban planners to get problems of the living environments within communities and this facilitated for easy preparation of action plans to work on environmental aspects.

The idea of having GIS system in planning in Uganda could enhance planning if only its given priority right from the international level, national to Local Governments.

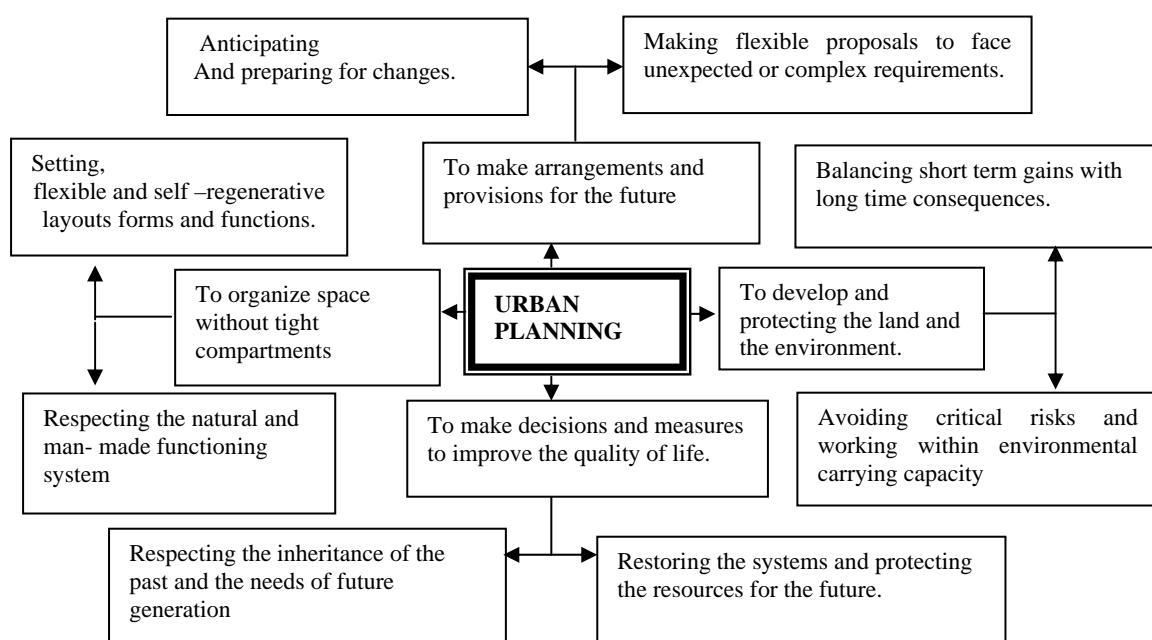
This is because the Planning budgetary allocation is very limited and therefore the system is most likely to fail due to limited financial resources to keep updating data.

However, the available knowledge on how to deal with urban environmental problems in Kamwenge Town Council could be insufficient and therefore the need to have various approaches in management of urban environmental problems.

The urban planning process, procedures, and implementation mechanisms vary from country to country'. Integration of urban planning and environment at policy and the planning process level could be one way of improving the two disciplines more so urban planning (Cin, 2004). An example of integration of the two can be sighted in Austria, whereby spatial planning has been used in the legal system to protect open spaces. He further explains that much as there are some laws like the Forestry Act of 1975, spatial planning acts, do provide hierachic instrumentation, which instruments are eventually used to decide individual decisions for development in the cities. He notes that, environmental considerations are normally taken into account as far as spatial planning in concerned (Roo, 2004).

He also sighted the second example being, Netherlands that has also tried to integrate spatial planning and environment. The process of integrating spatial planning and the environment in the Netherlands is described as exemplary. This country is looked at as a pioneer in the field of organizing space. He points that there are lessons to be picked from this country for other countries to learn. "...rule and order is not imposed from above, it probably pervades the way the Dutch do things" (Fludi and Van der valk, 1994, pp.78).

**Figure 6: The Netherlands planning system**



Source: A .Dal Cin 2004.

The above figure illustrates the experience of Netherlands in integrating spatial planning and environmental management. This system does recognize the role spatial planning has to play in the present and for the future generation by protecting the environment, reservation of space and respecting heritage. The system could work very well for Uganda and Kamwenge District because this promotes team work and therefore a need for regulations and an integrated approach of working. However this

will depend on the cooperation and activities promoted between NEMA and the physical planning department in the country right from national level to local level. The new form of urban planning advocates for involvement of partners in the planning process, all actors are involved in decision making (York-shiu, 1994). He also explains that a shift from traditional planning to new urban planning which is seen as a means of negotiating where and how development happens is more effective than the approach of government making decisions at the top and not involving the public and other actor like the private sector, civil society, and voluntary agencies. The new form of planning strengthens the relationship between planning and partners of all sectors of the community who do have a stake in a place or town (Kinuthia, 2002b). It further advocates for good governance but less of a government instrument in order to allow proper decision making by encouraging incentives as the case with Netherlands(Dijk, 2006). The new urban planning is also believed to be innovative and participatory whereby demand driven planning is dynamic and effective. During the process of planning partners should be involved and that the planning process should be an accountable process to the public.

While the new form of urban planning promotes planning with partners, it's a good thing for the success of implementation of the city plans, but it does not mention, how this can be done or strategies on how to achieve it. However whatever is promoted is just the same idea that has never been supported in the planning process due to the costs involved in gathering all the stakeholders to attend meetings, workshops. And for the community, most people expect money, lunch and transport refund for attending workshops unless this attitude is put out of the local communities then planning with partners that is being promoted by the new form of planning may not work out just like the traditional approach.

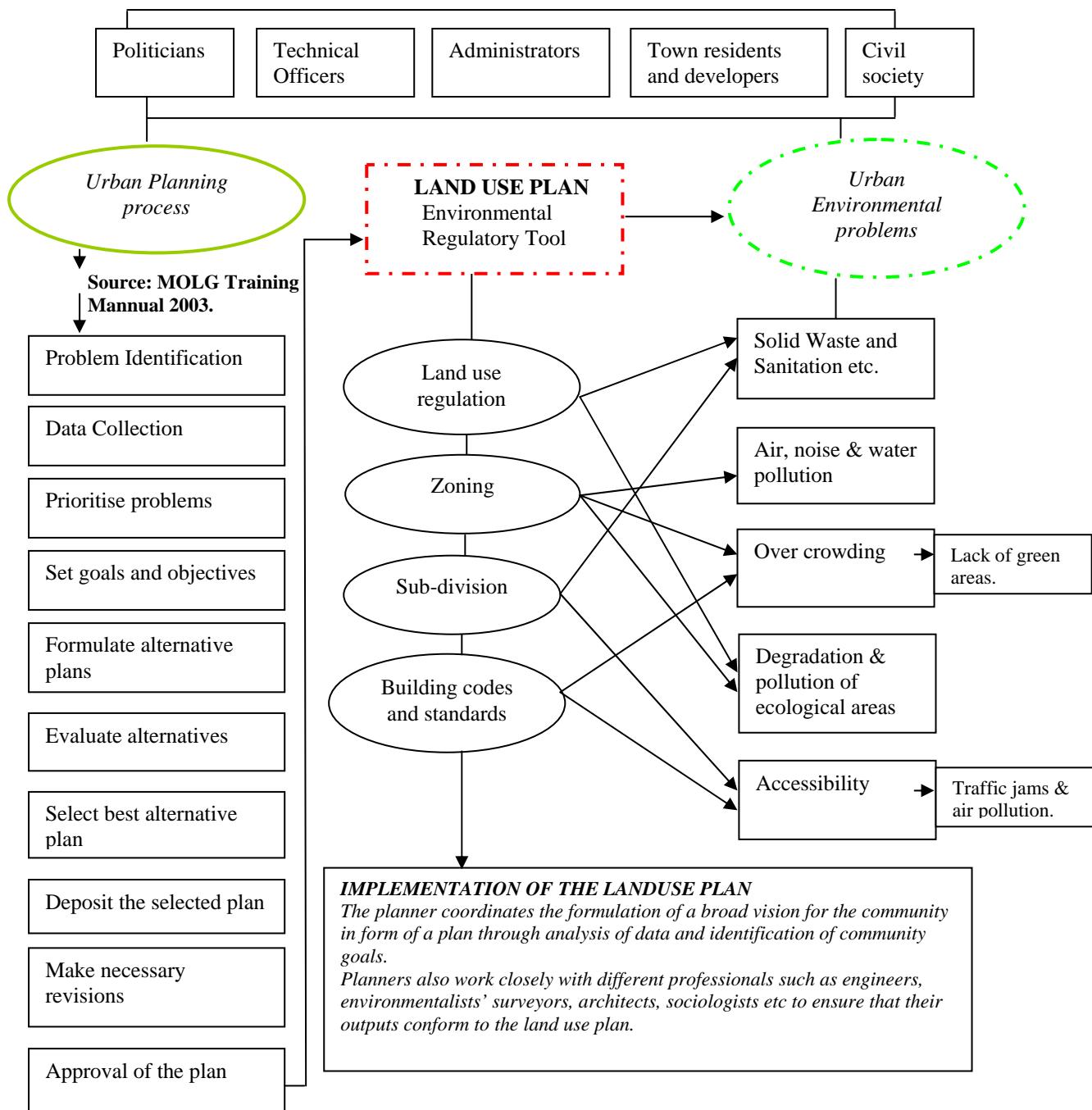
It may be important to note from the professional point of view, that urban planning involves team work. Planners can not do everything themselves, working in partnership with other departments, other professionals and key stakeholders will be necessary if urban planning activity is to function. This requires considerable efforts in terms of capacity building. Capacity building should not only focus on a re-oriented planning education and training, but also focus on improving the capacity of the partners in planning. Good planning holds out the potential of helping to achieve effective, efficient and creative development. It is crucial that this potential be realized if there is to be any impact on the worsening urban conditions in so many parts of the world.

## **2.6 The Conceptual Framework.**

Having gathered and internalized the secondary data, the researcher was in position to develop a conceptual framework based on the literature. The conceptual framework is basically explaining the correlation between urban planning and environmental management using identified concepts, variables and indicators in the study. The correlation is illustrated by describing the urban planning process in a public organization, the stakeholders involved, land use regulatory tools and finally environmental problems as it is in figure 6. The correlation is mainly seen through the planning process and the stages involved in the creation and preparation of urban land use plans which is described in stages from problem identification to implementation.

Urban planning as defined in the first page of this book is referred to as a dynamic discipline that involves a process which aims at improving the welfare of people and their communities by creating good living environments in a more convenient way, equitable, healthful, efficient, attractive and environmental protection for present and future generations. It's important to note that each stage in the process is quite essential to urban management. An example of Uganda's process is referred to (MOLG, 2003c).

**Figure 7: Conceptual Framework for Urban Planning**



## 2.6.1 Urban Planning Process

### *Problem Identification and Data Collection*

This is the very first stage whereby, the government as a public institution together with the community identifies a planning problem in a planning area usually it can be a municipal council, Town Council or a town board and this is done through holding consultative meetings and workshops. Problem identification is usually done from the bottom not the government alone. From the Practical experience, residents in urban areas have always come up to identify their own problems after experiencing poor environmental conditions such as noise, air, water pollution arising from incompatible land use. It's after the worsening conditions of crowding, poor sanitation, arising from floods and uncollected garbage that the community leaders approach the government to take action in order to prepare a land use plan (Maseruka, 2007).

The second stage entails data collection as indicated in the above figure 6. Urban planning calls for a full inventory of data before any plan is made, such data includes, population size, density, growth rate and distribution of the population. The size of available urban space, infrastructural network, social services and economic activities are considered. Data on environmental aspects like water resource, vegetation, soils, nature of landscape and overall land cover. Extent of the urban area, physical characteristics, land tenure system, housing information on quality, quantity and distribution, historical sites or heritage. Finally information on poverty and standards of living is compiled. This information is collected from various sources such as census data, existing maps and reports, surveys carried out, cadastral and topographic maps, banks, religious institutions, environmental agencies and above all the local population itself, etc. whereas a preliminary survey is emphasized by (Roberts, 1974).

### *Prioritizing problems, setting of goals and objectives*

Having come up with the problems, then prioritization of the identified problems is done by starting with the most important problem, which is also based on the resources available in the public organizations. The principle is that there will be need to tackle the most urgent problem that is affecting the residents. This is done by all actors from all levels and sectors. The next step involves setting goals and objectives where by urban planners help the community to set a broad vision which involves a clear statement on how to achieve the desired vision. The goals and objectives formulated are meant to address the problems identified with the help of the community and other relevant stakeholders. The set goals and the objectives could be short term and long term depending on the magnitude of the urban problem. The planners also help partners to identify their own strategies of how they can meet the visions (Roberts, 1974).

### *Formulation of Alternative plans and Evaluation of Alternatives*

This stage entails team work where by all people from different professions work with the urban planner to develop various plans with an understanding that the first plan is not always and necessarily the best or most optimal. The professionals include among others the environmentalists, economists, surveyor, engineer, sociologist, architects, geographers, sociologists, population officers and health specialists. Further more,

this stage involves analyzing data and what was identified by all the people affected or who are likely to be affected by the plans. Based on the inventory on data, an urban planner in close collaboration with the local community and urban authority, then translate the desired situation jointly into a land use plan or structure plan. The main important aspect involves development of various plans that suits the needs of the community and that addresses all problems. At this stage, the design takes into consideration aspects of affordability in an attempt to develop several options for the beneficiaries, to choose the most appropriate plan to be adopted for implementation.

In order to lighten the process of selection of the most appropriate plan, the technocrats develop a checklist that is used to measure the quality of the plan in relation to the main objectives and goal of the plan. The checklist contains a list of indicators that are used to check for its (plan's) compliance with the primary aim of the plan. Different methods are applied at this stage to evaluate the plan; cost benefit analysis, appraisal techniques and threshold hold analysis (J Kozlowski, 1972). Evaluation of alternatives is usually done through forecasting the consequences of the alternatives developed which may entail constructing future scenarios in order to detect what would happen when each alternative is implemented. It could even involve Environmental Impact Assessment (EIA), (Roger Zetter, 2002).

#### *Selection of Best Alternative Plan and Deposition of the Selected Plan to the Public*

Having evaluated the alternative plans, they are then ranked according to the scores obtained through the evaluation process. The ranking is done indicating the best through to the least. This is to aid the policy makers and other stake holders (involved in the planning process) choosing the best plan for implementation. At this stage issues such as affordability of the plan, among other factors are taken into consideration. Selection of the best option usually employs possible courses of action from other alternatives. This is arrived at by all the stakeholders agreeing together on what suits them most. After agreeing on the best option, then the Government goes ahead to deposit the plan for public viewing and to other stakeholders, which is done through the local media, national news papers, radio programs and notice boards in strategic places right from Local level to national level. Deposition of the plan allows the public to react to the proposed plan. The period for public viewing takes 3 months and reactions are taken (TCPA, 1964).

#### *Making Necessary Revisions and Plan Approval*

After filing all the complaints from residents, the Town Council usually has to make adjustments and prepare a final plan before the next stage which is the approval stage. This plan then tries to capture those inputs from the public such that their interests are fully addressed since it is meant to be participatory, (J Kozlowski, 1972).

After the modifications have been made, the plan is then presented to the local council authority (in charge of the area being planned) for approval. After which it is then forwarded to the Town and Country Board that seats to determine whether the plan should be approved or not considering the basic planning requirements at that level and other technical aspects of the plan. Once it is approved by the board, it is then forwarded to the minister in charge of planning for approval and thereafter it becomes a legal document used as a tool to guide developments. The Minister may, with or without modifications, approve any outline scheme submitted to him or her under section 12 (3) (TCPA, 1964). At this stage the plan is gazetted making it legal.

## 2.6.2 Land use Plan

### *Implementation and Evaluation*

Once the land use plan has been brought into effect, the planning committee together with all stakeholders will then be responsible for implementation and enforcement. The Planners will only be responsible for coordinating the work various people like the developers, investors, civil society and other professionals like the Engineers, environmentalists, architects, surveyors, sociologists agriculturalist.

**Table 1: Professional roles in the planning process**

<b>Profession</b>	<b>Role during implementation</b>
Urban planner	Coordinating the planning process.
Surveyor	Provision of cadastral and topographic information and setting out the roads.
Sociologist	Concerned with the people and welfare.
Environmentalist	Managing environmental issues
Economist	Financing of the plan
Engineer	Provision of infrastructure in line with the plan
Agriculturalist etc	Promoting urban agriculture.
Architect	Design and prepare structural drawings in accordance with the land use plan of the area.

Land use regulations are used to control developments during the implementation stage, which regulations help in controlling the human induced changes on the land in order to create order in an urban setting, directing developments, improving people's way of life through proper use of urban space, and most of all it helps to avoid renewal and redesigning costs in future (The Earth Summit, 1999). Therefore several tools may be used in development control which include; land use regulations, zoning, sub division, building codes and standards, Accessibility standards, and public health standards. For the case of this study the main focus is on zoning, subdivision, building codes and standards then land use regulations in relation to environmental problems.

Zoning helps to create buffer zones and therefore wetlands, forests water sources can be protected and the use is also restricted. Secondly zoning is a means of separating incompatible land use such as residential sites from industrial areas since they are not compatible. Whereas land uses regulations do provide ways of how to site disposal procedures to landfills, garbage skips and collection points at household level. These rules also restrict use and encroachment on fragile areas (NMP, 1993).

Subdivision is looked at as a means to proper solid waste management by reserving land for compost mechanisms on individual plots, having permits and codes that provide mechanisms to ensure that builders and real estate developers incorporate waste reduction strategies into their plans (Roseland, 1998). An example is sighted among developers in "Calordo-Boulder" who have set standards in designing homes, buildings that accommodate recycling as an environmental component in contracts. Besides, subdivision standards are also a means of improving accessibility by creation of access roads. While building codes and standards helps to avoid overcrowding thus acting as a means to attaining green spaces. The codes do sort out the problem of accessibility by preventing people from building in road reserves and there by a preventing traffic jam eventually air pollution in the future

It may be worth while to note that a land use plan provides a broad outline, and within the plan, strategic and action plans can then be generated for effective implementation. This covers the aspect of new urban planning innovations which have to fit into the land use plan (Davidson, 2006).

However urban planning may not be the perfect solution to the management of environmental problems in Kamwenge but the study attempts to bring out how it could be used as a stepping stone to the solutions sought for management of the urban environmental problems that are identified in Kamwenge (William, 1990).

## Chapter Three

### 3.0 Back Ground of Kamwenge Town.

This section presents an insight of the study area from the time of its creation to the current state of affair as an urban centre.

#### 3.1 Historical Background.

Unlike most urban centers in Uganda which have their origins in the coming of the Asians in the 1930's Kamwenge owes its origins to the construction of the Kampala - Kasese Railway Line. A construction camp was established at this point and the workers' demand for "mwenge" a Luganda word for the local brew later developed into the name of the railway station that was erected and the trading centre.

This activity became significant commercially and became the basis for the development of the present day Kamwenge Town 15,949 (UBOS, 2002). Kamwenge became a self accounting Town Council in 2000 following the creation of Kamwenge District in the same year.

##### 3.1.1 Development and Level of Urbanization.

The town has undergone substantial transformation and development since it started as a trading centre with a few shops built at the time of railway line operations. These shops that were mainly stores have now been turned into residential and commercial apartments. So from its humble origins as a small trading centre with a few shops, Kamwenge has developed into a fully fledged Town Council with more shops and mixed developments all over the place.

Kamwenge Town now has an estimated population of about 15,949 people covering an area of 75 sq km. The town's population is distributed in all the three wards or parishes, which are the local administrative areas.

However the level of urbanization is still low compared to the national average. The national urbanization level itself is rising at 12% (UBOS 2000 Census), while the growth rate for the Town is also low compared to 4.8% national average.

**Table 2: Kamwenge's population distribution in three wards**

<b>Administrative Units</b>	<b>Population distribution.</b>
Kaburisoke Ward	3,633
Kitonzi Ward	4,622
Kamwenge Ward	6,311
<b>Total</b>	<b>14,566</b>

Source: (UBOS 2002 Census)

This makes Kamwenge as one of the least urbanized Districts in the western region. The low level of development and urbanization may be a reflection partly of the low level of economic activity in the hinterland which depends mainly on food crops that are subject to the vagaries of weather and closure of the railway line.

##### 3.1.2 The Urban Environment and the Planning Context.

Since the creation of the Town Council the first effort to provide a broader planning framework for the development of the town by getting the planning area and structure plan approved and gazette in accordance with the law took place in 2005. Although the central area plan had been prepared before the one of 2005, it was not statutory approved and it lacked professional input and therefore this has had an impact on to the current Kamwenge environment.

**Figure 8:The present Kamwenge Town (Mbarara road and Taxi Park)**



*Source: Field Work (July, 2007)*

### **3.1.3 Land Tenure**

Land in Uganda is owned in accordance with customary, freehold, mailo and leasehold land tenure systems (Article 237 of the constitution).

Customary ownership is the most predominant system of land holding in Kamwenge. Some lease holdings also exist especially in town where leases were acquired out of former customary land. The constitution has brought fundamental changes in the status of former customary tenants and this has enhanced their rights on land.

### **3.1.4 Implications on to the urban environment.**

The land tenure has created security of tenure and access to credit as collateral security but on the other hand it has far reaching implications for plan implementation. Although urban land-use should be in accordance with the plan (Town and Country Planning Act) and other laws as well, land acquisition for public use is by outright purchase from land owners. Previously, acquisition would only involve compensation for existing developments because land belonged to urban authorities under the statutory lease from Uganda Land Commission. Land tenure being a critical variable in determining land use and development in urban areas has got positive and negative effects. Where the law enforcement is weak, the individual owners may choose to use land without being conscious of the effects on to the environment, culminating into urban environmental problems.

### 3.2 Physical Background

#### 3.2.1 Location and Size

Kamwenge District Local Government is found in western Uganda, which country is located in East Africa west of Kenya within the geographic coordinates of 1 00 N, 32 00 E. It covers a total area of 236,040sqkm with an estimated population of 28,195,754 growing at a rate of 3.3%; this growth has led to the concentration of the population in urban centers throughout the country.

The District covers approximately a total land area of approximately 2,303.26 km<sup>2</sup> and its made up of 2 counties, 8 sub counties and 1 Town Council which is Kamwenge Town. Generally the district lies at an altitude in the range of 1300 B 3800m above sea level.

Kamwenge Town Council as the study area was created at the time of creation of Kamwenge District but became operational after July 2001. The Town Council therefore now has an estimated population of a bout 15,949 people covering an area of 75 sq km.

Kamwenge Town Council can be accessed from Kampala, the Capital City of Uganda, either through Mbarara Town via Ibanda or Mubende, Fort Portal road via Fort Portal. This is a distance of over 400km. While, within Kamwenge District Local Government, Kamwenge Town is located in Kibale County and from the neighbouring towns it's a bout 60 kilometres from Fort Portal and 105 Kilometres from Mbarara.

**Map 1: Location of Kamwenge in Uganda.**



*Source: Kamwenge District Local Government*

### **3.2.2 Climate and Soil Patterns.**

The Town Council is blessed with an average well-distributed rainfall throughout the year. It has an average temperature of  $20 - 25^{\circ}\text{C}$ . This geographical situation makes it easy for the urban dwellers also to participate in agriculture. However since drought has been persistent it's difficult to access water for both human beings and animals. The soils of the town are generally fertile, conducive enough to carry out intensive farming and therefore giving varying yields

### **3.3 The Main Features**

The topographic set up is basically gentle slopes with a few hills. Much of the Town Council area is functionally rural (agricultural) and the built up (urban area) comprises only about 15% of the council area. The Town Council covers an area of approximately  $75\text{km}^2$ .

**Figure 9: Built up area of the Town Council.**



*Source: Field Work (July, 2007)*

### **3.4 The People**

#### **3.4.1 Ethnic Composition.**

Kamwenge is composed of different kinds of people the major ones being, Batagwenda, Batoro, Bakiga and Bafumbira. The composition of having different tribes, has led to increased population growth rate in the town and the District as a whole.

#### **3.5 Socio- Economic Characteristics**

The Town Council business area is predominantly commercial sector, involved in trade of general merchandise of wholesale and retail nature.

The main source of income in the district and town is agriculture and 80% of the population relies on farming. The majority of the population is involved in cultivation of maize, beans, ground nuts and potatoes. However production in this sector is generally declining due to unsuitable and unpredictable weather patterns. The population also heavily relies on informal small –scale industries like maize mills and welding workshops.

## **Chapter Four**

### **4.0 Research Methods**

#### **4.1 Research Type and Strategy.**

The kind of research was exploratory which attempted to assess the effectiveness of urban planning towards urban environmental problems in Kamwenge Town Council, while the strategy was a case study based on the form of research questions. The researcher used a case study since it does not require control of behavioral events and it focuses on contemporary events.

#### **4.1.2 Unit of Analysis**

The study covered the Town Council and in particular the sectors and departments that are directly responsible for environmental issues as a unit of study. It further covered the line ministries at the national level whereby the researcher was in position to gather useful information on the linkage of urban planning into environmental management.

The study also covered the three parishes in the Town Council with an aim of getting information from town residents. Therefore the unit of analysis for the first and last question were for the community whereas for the second and third question the unit of analysis was for the institutions, mainly the Town council.

For the researcher to determine the potential role of urban planning towards management of urban environmental problems, qualitative and quantitative methods were used. It involved designing of structured questionnaires to the community and gathering opinions of different respondents through open ended interviews with both the politicians, technical officers, line ministries and civil society organizations.

The use of the above instruments enabled the researcher to collect enough information from the target population while considering different stakeholders.

#### **4.1.3 Research Scope, Population and Sample Size.**

The scope of the research was restricted to Kamwenge Town Council, which has a population estimate of 15,949 people covering an area of 75 sq km.

The list of 18 villages was presented to the researcher by the ward agent and the researcher used random sampling to pick up 10 villages as shown below:-

**Table 3: Villages visited for the study.**

Number	Village Visited	Village not visited.
1	Kamwenge Town	Kanyegaramire,
2	Karambi,	Kabingo II,
3	Masaka,	Kaburaisoke II,
4	Kamwenge Village	Kaburaisoke I,
5	Kaburaisoke,	Rwemirama I, ,
6	Rwemirama11,	Kakinga,
7	Mubusenyi,	Kyabyoma
8	Kabingo I,	Nyancwamba
9	Bukonderwa,	
10	Kitonzi	
<b>TOTAL</b>	<b>10</b>	<b>8</b>

*Source: Field Work (July, 2007)*

#### *Sample Size*

Questionnaires were administered to 40 respondents of the Town Council community since they are the people being planned for and affected by urban environmental problems.

In order to obtain 40 respondents, random sampling was used. This is an example of probability sampling whereby every member of the population has equal chances of being selected. This principle is accurate, avoids bias and provides statistical means of estimating the sampling errors. In the above principle 10 villages were picked from the Town Council and then four people per village were interviewed, making a total of 40 respondents.

Besides, 10 more questionnaires were administered to the politicians and technical officers who were purposively chosen while 10 more questionnaires were administered to the Line Ministries and the National Environmental Management Authority (NEMA).

Generally random sampling was applied in selecting the community respondents whereas for the institutions purposive sampling was used making a total of **60 respondents**,( sixty ) as shown below;—

**Table 4: Subjects in the Study.**

SUBJECTS.	CATEGORY OF RESPONDENTS.	NO OF INTERVIEWS AND QUESTIONNAIRES.
Town Council Community	Residents	40
Politicians	Councilors	5
District Officials	Environment Officer	1
	Town Engineer	1
	Health Inspector	1
	Community Officer	1
	Town Clerk	1
National Environmental Association (NEMA)	Town and Country Planning Board Members.	2
Ministry of Local Government.	Commissioners Urban Authorities.	2
Ministry of Lands Housing and Urban Development	Commissioner and Supervisor Western region	3
Civil Society Organizations	Non-Governmental Organizations and CBO'S	2
<b>TOTAL</b>		<b>60</b>

## 4.2 Data Collection

### 4.2.1 Research Techniques.

In the course of the research data was collected using two forms secondary and primary data. Collection of secondary data involved using already published materials to get more appropriate information related to the topic from various sources such as IHS library, Erasmus library and online source.

Primary data was collected by principally going to the field for one month. The researcher was able to get four experienced local research assistants who administered questionnaires and data entry in SPSS. Before execution of their duties, the researcher briefed them on what information to look out for.

Primary data was collected mainly by the following techniques; -

### 4.2.2 Questionnaire.

Written questions were used to gather information from respondents of the community, from politicians and technical officers. The researcher was in position to get information on, challenges of urban environmental management in the Council.

### 4.2.3 Interview Schedule

The interviews comprised of open ended questions. Information from Line Ministries that is Ministry of Local Government (MOLG) and Ministry of Lands Housing and Urban Development., National Environment Management Association and Civil Society was collected using interviews.

#### **4.2.4 Existing Maps and Photographs.**

Use of appraisal techniques in that, existing data sets acted as a guide for orientation in the field for when moving around the wards and villages. Topographic maps were used. This was a useful tool and a guiding factor for the research assistants.

Some photographs were taken using a simple digital camera, the photos serve as an illustration of the existing urban environmental problems in Kamwenge Town.

### **4.3 Data Analysis**

In this study after the necessary information had been acquired and collected, Data was processed and analyzed through SPSS. Data was entered and edited at the end of each working day's field work. This ensured accuracy and consistence in information given by respondents.

#### **4.3.1 Qualitative and Quantitative Data Analysis**

Relevant key information notes were taken and work edited at the end of each working day. Exploration of qualitative data from interviews was operationalized and putting numbers on ideas in order to analyze the potential role of urban planning in urban environmental management in relation to theoretical framework. After the coding had been done cross tabulation was done in order to get opinions from various respondents interviewed.

Analysis of quantitative data involved descriptive frequency of certain characteristics like level of education and dominant environmental problems etc, which are then presented in **table forms, bar graphs** and **charts**. This involved representation of ideas on the potential role of urban planning in management of urban environmental problems.

### **4.4 Data Quality**

**Validity;** which refers to the appropriateness and the extent to which a measure accurately reflects the concept that is intended to measure, was enhanced by avoiding generalizability. Questionnaires were designed to suit all respondents most especially use of open ended questionnaires for purposive respondents. The questionnaires were designed in a logical way and a pilot test with a few residents before actual fieldwork started was carried out.

**Reliability;** which involves consistency and the extent to which the same result is achieved when a measure is repeatedly applied to the same group was improved through, questionnaires that contain questions that relate well to the research objectives and seeking the supervisors guidance on the contents. Through acquisition of data from various sources, reliability of data and findings was easily enhanced.

**Objectivity;** which also involved expressing no particular opinion, neither for nor against a topic or issue was attained by avoiding leading questions, vague and suggestive questions when conducting interviews.

#### **4.5 Variables and Indicators.**

1. Tool -Urban planning.
2. Environmental Problems.

**Table 5: Operationalization of variables**

No	Variable	Indicator
<b>1</b>	<b>Urban planning</b>	An approved structure plan. Reserved green areas Efficient transport system Gazetted ecological areas -swamps and forests Lack of informal settlements Separated incompatible land use Efficient drainage system Well managed solid waste system and sanitation. Orderly layout of the town.
<b>2</b>	<b>Environmental Problems</b>	Solid waste and sanitation Pollution (air, noise and water ) Crowding without green areas. Poor transport system-accessibility. Degradation of ecologically sensitive areas.

**Table 6: Concepts and definitions**

	<b>Concepts</b>	<b>Definitions</b>
<b>1</b>	Effectiveness	Effectiveness may be defined as the relationship between outputs and outcomes and more precisely, as the extent to which environmental policy objectives are achieved. This is attained in planning through the following; Land use regulations, Zoning, sub-division, building codes and standards.
<b>2</b>	Urban planning	Urban planning is a dynamic discipline that involves a process which aims at improving the welfare of people and their communities by creating good living environments in a more convenient way, equitable, healthful, efficient, attractive and environmental protection for present and future generations.
<b>3</b>	Environmental Problems.	The presence of pathogens/toxic substances in the human environment, which can damage human health or physical resources such as, forests, fisheries or agricultural land. It may be looked at as inadequate supply of resources essential to human health or urban production like having no sufficient fresh water (Hardoy et al., 1992). <b>These problems include;</b> - Solid waste and sanitation, Pollution, Crowding, Degradation and Pollution of ecologically sensitive areas, poor accessibility etc.
4	Sustainability	Refers to development in Kamwenge Town that meets the needs of the present without compromising the ability of future generations to meet their own needs. (Brundtland Commission 1982).
5	Livability	A town that is comfortable and suitable to live in.
6	A land use plan	An outline scheme which contains broad statements on the development strategy of an area for a defined period.
7	Stakeholders	Various interested parties in urban development.
8	Efficiency	The relationship between resources used and services provided by the Town Council.

#### **4.6 Limitations of the Study**

The study was mainly limited with the following; -

The time constraint , this is attributed to the fact that a masters research needs ample time for effective results and four weeks was not very adequate for fieldwork.

Secondly restriction to simple data collection techniques resulting from inadequate financial resources and therefore not many collection data techniques were used for variance of information.

## Chapter Five

### 5.0 Analysis and Discussions

#### 5.1 Introduction.

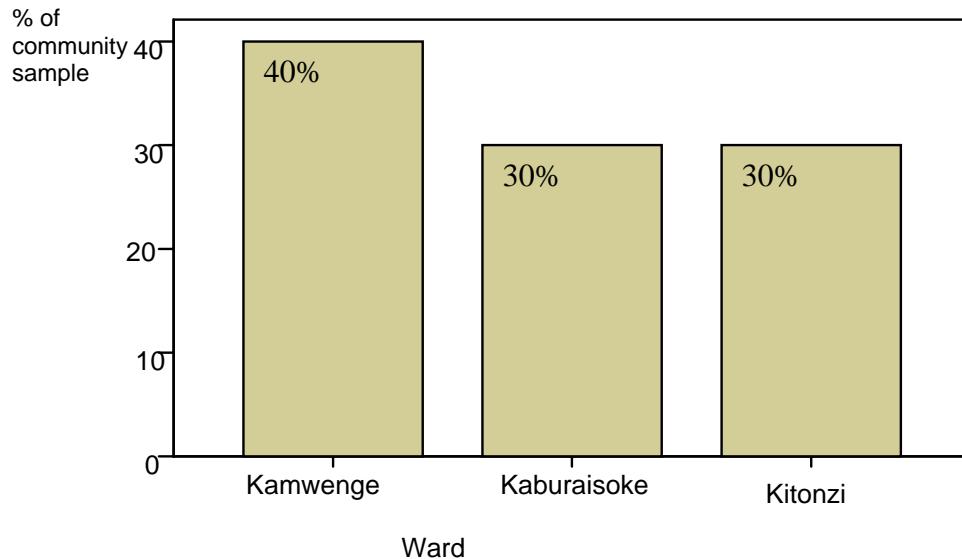
The findings in this study attempt to answer the main question of how can urban planning help effectively to solve environmental problems in Kamwenge Town.

Therefore, the researcher, in this chapter presents findings and discussions based on main urban environmental problems, discussion on problems encountered in managing the urban environment in Kamwenge Town, comparison of the different roles that stakeholders play in urban environmental management in Kamwenge Town and finally strategies that should be used to improve the effectiveness of urban planning in the management of urban environmental problems.

#### 5.2 The Main Urban Environmental Problems.

The analysis of environmental problems covered all the three wards. Figure 10, represents the percentages of 40 respondents in three wards who expressed their opinions on environmental problems. The community in Kaburaisoke ward expressed the situation of lack of a nearby garbage skip. The central collection point is very far from their ward and therefore they are forced to dump garbage behind their own houses or burn the wastes causing air and water pollution. This was one of the problems that came out strongly from the 30% respondents in Kaburaisoke ward.

**Figure 10: Wards in Kamwenge Town.**



*Source: Data based on questionnaires carried out during field work.*

When considering the analysis of the environmental situation in Kamwenge Town, as seen in the table 8, the community in all the three parishes of the town expressed their views on environmental problems, 47 % of the problem being air pollution, solid waste being 15%, wetland destruction being 15% while the rest of the problems the

community members are not aware of how much the water is polluted though they use this water for domestic use, few people know about them and therefore they represent a smaller percentage, 2.5% represents who did not know what environmental problems were, and cutting of trees took a percentage of 5.0, then 2.5 % for destruction of trees.

**Table 7: Environmental Problems in Kamwenge Town**

No	Environmental Problems	Frequency	Percentage of respondents.
1	Air pollution	19	47.5
2	Noise pollution	4	10.0
3	Water pollution	1	2.5
4	Solid waste	6	15.0
5	Destruction of wetlands	6	15.0
6	Destruction of hill tops	1	2.5
7	Cutting trees	2	5.0
8	No response	1	2.5
	<b>Total</b>	<b>40</b>	<b>100</b>

*Source: Data based on questionnaires carried out during field work.*

The community ideas are further backed by the views from the Politicians, the Technical officers in the Town Council and the Non Governmental Organization within the council, which opinions were analyzed basing on the interviews as mentioned below;

### **5.2.1 Waste Management.**

“Waste” includes any matter prescribed to be waste and any matter, whether liquid, solid or gaseous, or radioactive, which is discharged, emitted, or deposited in the environment in such volume, composition or manner as to cause an alteration of the environment” ( The National Environment Statute, 1995).

Wastes generated in Kamwenge Town include both liquid and solid wastes. The liquid waste includes waste water from lodges, restaurants and homesteads, which ends up in the streams and water bodies. This is because this water is just discharged openly to soak away pits which are sometimes full and even not constructed to required standards. Solid waste mainly includes garbage, which is biodegradable and some non –biodegradable substances like polythene bags, metals and other types of plastics are increasingly becoming common (KTC, 2006).

The Town Council officials revealed that solid waste management in the Town Council is very bad, the current landfill is temporary and inappropriately located solid waste disposal systems are still rudimentary. Equipment used is inadequate. The Town Council has got only three garbage skips resulting into careless and indiscriminate open space dumping, which has created unsanitary conditions and loss of aesthetics beauty.

### 5.2.2 Wetland Destruction.

The town officials also explained that there is evidence of encroachment onto wetlands for brick making, clay extraction, and crop production and above all for settlement refer to figure 11. This leads to loss of water catchment and flood control function of wetlands, loss of biodiversity and open pits accumulate stagnant water that becomes habitat for disease carrying vectors such as mosquitoes.

Besides, they sighted the element of dumping solid waste comprised of garbage and human waste in the wetland leading to water pollution and the wetland itself as in figure below.

**Figure 11: Human settlement activities on wetlands.**



Source: Field Work (July, 2007)

### 5.2.3 Water Pollution.

Pollution can be defined as the introduction of foreign substances to a water source. Water pollution occurs when a body of water is adversely affected due to the addition of large amounts of materials to the water. The foreign substances do have an effect on water quality (MOLG, 2003a).

39% of Kamwenges' town population does not have access to clean and safe water and therefore increased incidences of people drinking highly contaminated water (KTC, 2006). Technical officers noted that 39% of the town residents do not have pit latrines, the toilets that are put up are mostly located near the swamps and water sources leading to disease outbreak and cholera. Sanitation conditions in the town are still low with poor waste disposal practices in both built and un built up areas. Faecal matter is not handled very well and ends up in water sources.

They further mentioned that the main pollutants of water in Kamwenge include, household wastes composed of, rubbish, feaces, sanitation inform of liquids.

### 5.2.4 Air Pollution

47.5% of the community complained of increased dust levels due to scattered grinding meals that are near residential areas and some are located within the residential areas "*There are so many incompatible activities in this town*", laments a

resident whose house is near the maize mill. He mentioned that the Town Council has not taken up any scheme to help them out and due to the low incomes they may not afford to move elsewhere.

#### **5.2.5 Noise pollution**

Opinions from the Town Council officials reveal that, there is a mix up of homesteads, small-scale industries like metal shops, garages, maize mills and sawmills together with saw mills and this affects the health of the neighborhood population. It's important to note that 10% of the 40 respondents from the community are aware of noise pollution being a problem but the majority percentage is not really complaining much "*As long as we get something to eat then noise is not a very big problem*" one resident in Kamwenge ward said.

#### **5.2.6 Deforestation**

The NGO's stated that urbanization seemed to have contributed to deforestation through increased cutting of trees due to the high demand for charcoal, firewood and timber for construction. There is also evidence of encroachment on forest land for agricultural utilization for cultivation and grazing, leading to loss of soil fertility, irregular weather patterns and occurrence of severe droughts. 5% of the community respondents also identified this as an increasing problem and they sighted officials in the Local Government as being part of the culprits and this depicts poor leadership on the side of the officers.

#### **5.2.7 Lack of public open spaces and inadequate recreational areas**

This problem came from the Non Governmental Organizations dealing in Environmental Management. There are no green areas where people can go and relax in the Town Council. The play grounds that do exist belong to schools and this means that the Town Council has not taken the initiative to have their own green areas much as the structure plan exists.

### **5.3 Management Problems of the Urban Environment in Kamwenge Town**

The "**urban environment** ", may be referred to as the physical, economic, social, political and institutional features of the ecosystems that surround and support human life and ultimately determine the quality of life in cities. With this definition, it basically means that the urban environment is centered on human beings, built environment of the city and the natural environment that provides resources for the city and is in turn affected by urban growth (York-shiu, 1994).

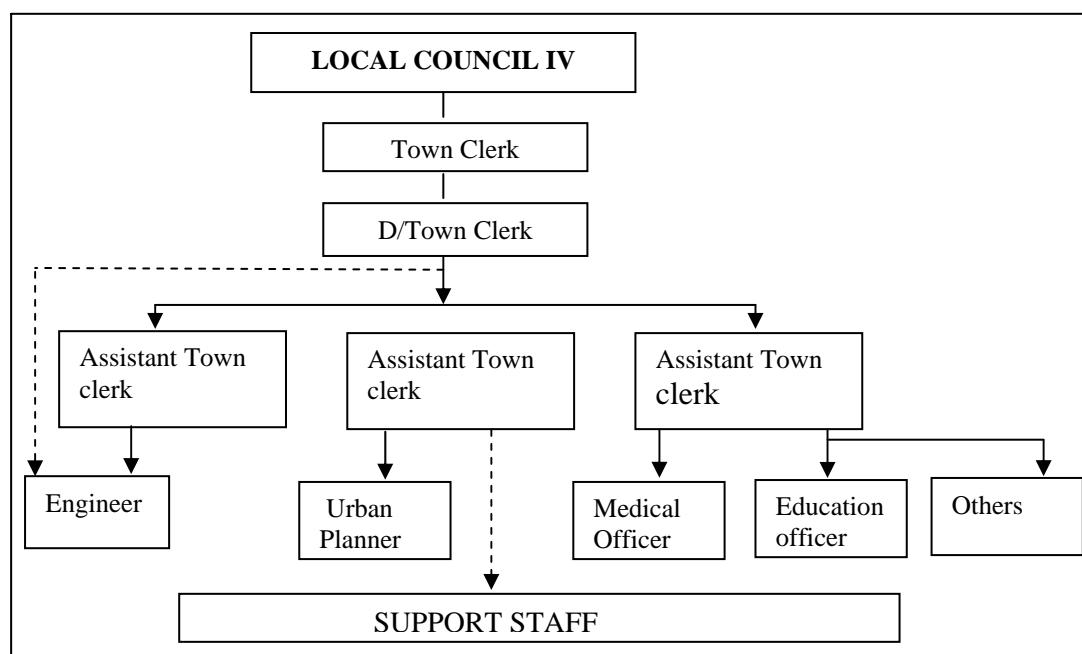
This section is presented and discussed using a convectional approach of examining and analyzing all the environmental management problems based on each category of the problems identified in Kamwenge Town. The analysis covers opinions from the Line Ministries, NEMA ,Politicians ,Technical officers and NGO's operating in the area helped to answer this research question.

### 5.3.1 General Management Problems

Human resource capacity. This opinion came from all the interviewees, much as the functions and services for urban councils are spelt out in the second schedule – part three of the Local Government Act 1997. The main challenge is how to effectively provide those services in an efficient way especially under the decentralized framework in order to prevent environmental problems. Kamwenge Town Council is charged with the responsibility of carrying out town and country planning, manage solid wastes, provision of open spaces and recreational areas, provision of utilities such as water sanitation and drainage among other functions etc.

Staffing is a management challenge to the council in that, the physical planner and environmental officer are based at the District head quarters and therefore the council has the task of borrowing their services which makes it difficult to monitor environmental problems effectively. This is made worse by lack of transport facilities like a motorcycle to help the few officers in the council in supervision and monitoring of environmental areas or developments within the Town Council. Ideally the administrators expressed the view that, the Town Council is to have more staff, members but are not in position to support more officers and therefore would prefer maintaining a link between the District officers and the Town Council.

**Figure 12: Organizational Chart for Municipal Local Government.**



*Source; Urban planning and management (Trainer's Manual).*

In the figure above, despite the well established structure of the urban authorities, Kamwenge Town Council is faced with the problem of maintaining the above man power and therefore, the Town Engineer is solely responsible for urban planning and environmental issues. This makes the whole system inefficient since one person is over worked with low motivation, hence a challenge to the urban environment.

Secondly, limited financial resources as an opinion expressed by both the technical officers and the politicians in the town. The general out cry was a bout the impact of inadequate funds. In order to manage the urban areas there is need for adequate funds.

Kamwenge Town has got various sources of income but the collection of the revenue from these sources is not efficient. The officers further mentioned that, there is hardly any revenue collected from the revenue sources, those that do exist, whatever is collected is not sufficient to manage the environmental problems not even to create environmental awareness in the council. This is made worse by the incompetence and corruption level in revenue collection.

Coupled with the above, there is no accurate data or information on what should be collected, by who and what method should be used. All these factors combined render the financing of environmental activities ineffective and therefore continuous existence of environmental problems. In addition, the Politicians mentioned that there are limited funds to carry out the above activities. This is due to the fact that the Town Council operates in an environment that is determined by the framework of the central government, like intergovernmental fiscal transfers, in certain cases, revenue raising powers of municipal governments, the case in point, is when the graduated tax was abolished by the president in a bid to secure enough supporters for the presidential campaigns of 2006.

The NGO's expressed the concern of lack of awareness among the community and the biting poverty in urban areas which has forced the residents into wetlands either for settlement or cultivation. The majority of kamwenge's population is not highly educated and therefore would not mind having toilets, building on road reserves, swamps, and maintaining good hygiene in their homes and the town. Some people do live near the grinding mills and therefore are affected by pollution. The community's perception on the level of effects of environmental problems is still low. The awareness problem is aggravated by poverty and therefore people do cut trees for charcoal in order to earn a living. Table 10, illustrates the sampled populations education level to the level of understanding environmental problems.

**Table 8: Awareness levels of the 40 respondents in the community**

No	Education level	Male	Female	Frequency	Percentage of respondents
1	Primary	3	5	8	20 %
2	O level	13	4	17	42.5%
3	A level	7	0	7	17%
4	Graduate	3	1	4	5%
5	Others	2	2	4	10%
<b>Total</b>				<b>40</b>	<b>100%</b>

*Source: Data based on questionnaires carried out during field work.*

The opinions from the Line Ministries and NEMA do show that, there is no political will and an integrated approach towards environmental problems. It takes commitment to have the environmental problems solved. NEMA officials were of the view that basically if all the upcoming towns in Uganda had plans then environmental problems would not be a big problem for Uganda and Kamwenge Town as well. One official had this to say "*Urban planning needs to be prioritized*". This is against the background of people not knowing what urban planning is in Kamwenge.

### **5.3.2 Specific Management Problems.**

These problems were mainly pointed out by the technical officers who are directly responsible for the department in the Town Council. The officers expressed strongly the poor implementation of the structure and detailed plans as a great challenge;- The environmental officer had a remark “*if urban planning had been effective, then perhaps I would have no work to do, but all the environmental problems in Kamwenge Town are due to absence of effective urban planning*”.

#### *Management of ecologically sensitive areas.*

Kamwenge urban plan clearly has reserved the ecologically fragile areas like wetlands and hill tops, but due to poor implementation of environmental and urban planning laws, the community members do not comply with the proposed plan and besides there are no committed leaders to enforce the law. The way residents use the land is in variance with the approved plans, there is totally no appreciation of the role of urban planning in environmental management in the Town Council. This is even more exacerbated by the low budget allocation to the physical planning department and environment (Refer annex 9). Hence a tremendous increase of encroachers into the wetlands and hill tops.

#### *Waste management*

According to the Public Health Act 1964, urban authorities are responsible for organizing and managing waste collection and disposal within their boundaries. In Kamwenge solid waste is a problem and the challenge comes from lack of a permanent dumpsite or a land fill. Some wards and villages do not even have a central collection points, which is either a rubbish pit or a garbage skip apparently the whole Town Council is being served by 3 garbage skips. There is also no established access to the temporal dumping site and as such the Town Council has found a short term solution by dumping solid wastes to a near by banana plantation just because the owner is interested in garbage for manure. This solution does not solve the problem since the council needs to establish a well planned system. The absence of an integrated approach of physical planning into waste management poses a challenge to its management.

They further mentioned that the Town Council can not establish a good solid waste collection system in the town area due to informal settlements that do not permit accessibility for the garbage truck to reach their and collect the wastes reason being, the informal settlements do not build their areas with standards and regulations followed. The lack of basic infrastructure such as accessibility to dwellings makes establishing a waste disposal system a problem. They noted that managing solid wastes is one of the most costly urban services which is taking up a lot of the proportion of the locally collected revenue which is about 40%.

#### *Management of water sources*

The lack of regulated developments and standardized plots in Kamwenge makes the developers to construct full plots without being conscious of where to locate the

toilets leading to erection of pit latrines near water sources and others resort to using the public toilets which are quite a distance from certain houses. By health standards all homes should have a pit latrine or a toilet. But due to failure to reserve land for the pit latrines it has lead to water pollution of the underground water sources while the surface runoff water from all corners gets its way to these water sources during the rainy season emanating from poor drainage leading to disease out break like cholera, typhoid and dysentery. Figure

**Figure 13: The polluted water source by both pit latrines and surface runoffs.**



*Source: Field Work (July, 2007)*

#### *Management of air and noise*

Another opinion from the MOLG was, land tenure system, in regard to the management of the Town Council, the system of holding land has enhanced security of tenure and the locals now have full rights of ownership and enjoy the land in perpetuity, Currently, the people in Kamwenge are overwhelmed by the system and each individual is aiming at acquiring land and putting up a house, much as the land tenure system has stimulated development in the areas and the country as a whole, on the other hand this has greatly affected urban development, the interviewees, expressed that, where the laws are weak with poor leadership then the environment becomes endangered. They sighted an example of the existence of scattered small scale industries depicts lack of planning in the town, in form of metal workshops, garages, grinding maize mills being located within the commercial and residential areas has led to several complaints to the Town Council on noise and air pollution.

#### *Management of recreational areas*

The technical officers pointed out, the different categories of recreational areas which include public open spaces (parks) sports grounds and stadium. It's unfortunate that the Town Council has no existing programmes for providing and managing recreational facilities. The few that exist such as play grounds belong to individual institutions particularly schools. The stadium proposed a long Nkongoro road to the south-west still requires a lot of resources and is being encroached on for residential

development. There are no public open spaces (park) provided and managed by the council.

#### **5.4 The roles different stakeholders play in urban environmental management in Kamwenge Town.**

In Kamwenge Town, the stake holders are the various interested parties in environmental matters. Urban environmental management is being regarded as a cross cutting issue that pertains the activities of human beings which affects both the living and non-living environment. Due to the increased population growth and urbanization in the town and the country as a whole environment has received much attention and therefore there are different key actors in urban environmental management and they include the Central Government, Town Council itself, Organizations, the private sector and individual community members.

##### ***Central Government***

The Government of Uganda set up the National Environment Management Authority to be responsible for all environmental issues in the country. The opinions gathered from National Environmental Management Authority revealed that at policy level and local level, the authority aims at providing a green and healthy environment. NEMA as the main agency does this through managing, coordinating, monitoring, supervision of all environmental activities in Uganda. NEMA does promote and ensures sound environmental management practices for sustainable development.

They further explained that, In Kamwenge through the District Environmental office, Environmental committees had been set up represented by the secretaries. The general opinion was that much as NEMA is trying to carry out its activities at the districts there is still much needed for proper management and so far capacity building was being done in all regions in order to create awareness. NEMA is also concerned with approval of permits and carrying out Environmental Impact Assessment (EIA) so that developments are guided before commencement of projects for example fuel stations. NEMA is horizontally linked to the lead agencies and vertically linked to the Local Government structure, the private and the NGO sectors.

##### ***Ministry of Local Government***

The officials' explained that, the Ministry is responsible for management of operations in Local Governments in the whole country. They expressed the fact that for the management of urban environmental problems in Kamwenge and other towns in the country, the Ministry has spent a lot of money on projects in Local Governments but the out put of the activities carried out was not really tangible or visible compared to the input, more so the aspect of value for money still needs a lot of efforts in order to achieve sustainable towns.

It's imperative to note that MOLG is working with the technical line ministries so as to manage the environmental affairs in the country. In light of creating awareness of environmental problems in the country, the ministry conducted a capacity building programme on environment and natural resource management for all higher Local Governments. This was done in collaboration with NEMA and some of the Kamwenge officers did benefit from the regional training programmes.

In addition, the Ministry has gone ahead to develop the harmonized participatory planning guidelines and manuals which include the environmental checklist prepared

in three volumes, one for each level of Local Government that is District / Municipality, Sub County / division and parish/ community levels. The check list is intended to be used by planning and development committees of the appropriate level of Local Government.

Their opinions also reveal that the MOLG is continuously trying to help Local Governments in managing urban environmental problems amidst challenges of lack of political commitment, institutional capacity –understaffing most Town Councils do not have urban planners and the ones that do serve as planners, their quality may be given a benefit of doubt based on the kind of training and finally there are too many urban authorities which poses a challenge of administering them.

### ***Ministry of Lands, Housing and Urban Development.***

Under the Ministry of Lands Housing and Urban Development, the Physical Planning Department is solely responsible for, supervision and monitoring of planning activities in the whole country. The department also does provide technical guidance to the Local Government on urban planning matters in the country. Technical support to a certain extent involves preparation of structural and detailed plans for the urban authorities.

When considering the opinions from the Ministry officials, as regards environmental management, the department makes sure all the structural and detailed plans do take into account environmental matters.

It's also important to note that physical planning decision making does not stop at the Department. There are also other bodies and instruments involved in land use planning as indicated in the Table 11.

**Table 9: Bodies and instruments in urban planning**

<b>BODY</b>	<b>INSTRUMENTS</b>
National Planning Authority	Town and Country Planning Act (1964)
Department of Physical Planning	Structure plans
City Authority	Detailed plans
Municipal Planning Authority	Development control process
Town Councils	

*Source: Data based on field work interviews.*

In the above table, Physical planning Department is also involved in policy formulation. It's also worthwhile to note that the physical planning Department works with NEMA through the Town and Country Planning Board. The two bodies look into issues of planning and environment.

### ***Town Council.***

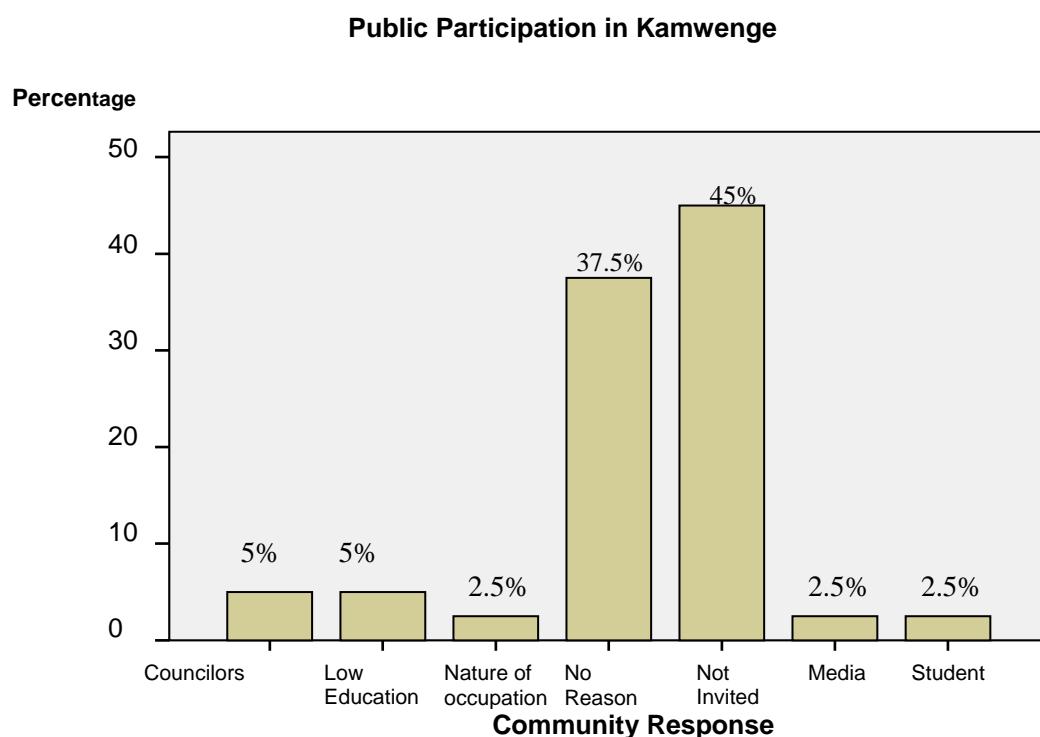
The Town Council has got different departments that are directly and indirectly dealing with environmental issues. The officials' explained that, environmental department, was solely responsible for management of the town's environment. The department has to a certain extent against the background of scarce resources played a role in putting up in place measures to conserve the town's environment as follows:-

Promotion of public participation, which is seen in resident's actions of protecting

the environment by planting trees, attending mobilization meetings such as “*keep Kamwenge clean day*” which takes place once a month under the initiative of the local leaders and the community. The community members together with their leaders that day get involved and do participate in garbage collection, slashing and cleaning of streets and their homes.

The application of environmental planning as another role played by the department. By definition Environmental planning refers to both long-term and short term, planning that takes into account environmental issues” (National Environment Statute, 1995). The officials highlighted that, the use of the environmental participatory planning has not been highly applied in the Town Council, though the bottom up approach in planning is used where by consultations are made right from the parish level and continues through the sub-county level up to district level. It may be vital to note that under the aspect of consultations, while the officials report that they consult the local community, the findings from the community reveal that the Town Council hardly consults the local community on any aspects not only environment.

**Figure 14: Participation levels in the council**



*Source: Data based on questionnaires carried out during field work*

From the above figure, 5% of the community participate through their councilors, 5% do not participate because they have never been to school to plan and participate in meetings, 2.2% admitted that they participate through the media, the students and nature of occupation have the 2.5% representing the reasons for not participating due to the nature of their jobs (police officers) are always transferred from station to station, 37.5% believe that it's the duty of government to provide everything and they do not know much about participation. While 45% were complaining that the town council does not engage them in council affairs. This shows a contradiction in what

the town does for the public and how the community perceives the town in managing the urban environment as seen in (Figure 14 above).

The town officials further, mentioned that, the environmental education as a measure was introduced in an attempt to intensify environmental management in the council and therefore the department does conduct workshops in order to create awareness. It's vital to note that several workshops organized centered mostly on wetlands with the leaders of the town being the target group and the other participants included , NGO's and CBO's. Other workshops were on Environmental Impact Assessment (EIA), Non formal environment education, bye law formulation and others concerning awareness on laws governing environmental management.

Secondly, under the Town Council, the physical planning department is one of those that would have played a significant role in environmental management, the opinions from the council politicians reveal that, the application of urban planning in managing the experienced problems has not been done.

This is barked by the town residents who confessed that they did not know much about planning since they have always lived in the informal settlements from the time the town was created until of recent when the proposed structure plan was being displayed to the public for viewing in order to make their comments before its approval (**Map 2**). The communities pointed out that the significant role of urban planning can slightly be felt in the, protection of the wetlands, creation of access roads and service lanes as seen in (figure :15. below.)

The politicians explained that much as the role of planning has not been really exploited, it would have been the closest solution to environmental management since people are encroaching on wetlands, scattered metal workshops and garages are a problem to the residential areas. Some politicians expressed that, in the process to manage the environmental problems, urban planning department has put in place a mechanism of developmental control, a system that regulates human activities on land. The mechanism involves several tools like plot coverage, building standards, accessibility standards, zoning and sub divisions.

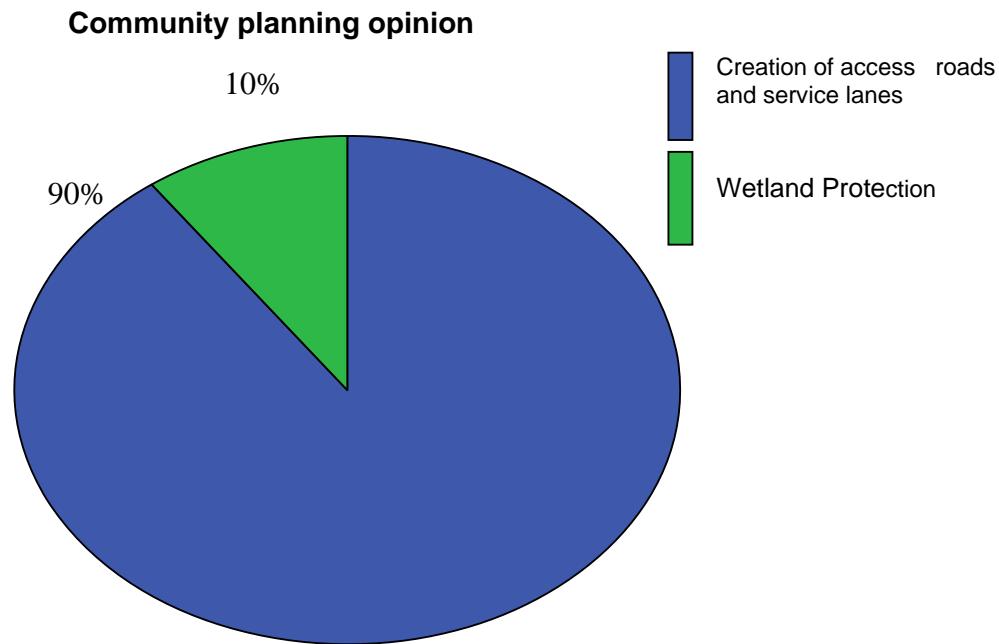
**Table 12: Community compliance with the land use regulations**

NO	Land use regulations	Frequency	Percentage of respondents
1	Zoning procedures	12	30.0%
2	Building codes	2	5.0%
3	No standards applied	26	65.0%
	<b>Total</b>	<b>40</b>	<b>100%</b>

*Source: Data based on questionnaires carried out during field work*

When referring to the above table, 65 % of the town residents do not follow the Zoning, subdivision, building codes and Standards and therefore a contributory factor to some of the management challenges.

**Figure 15: Role of urban planning in environmental management**



*Source: Data based on questionnaires carried out during field work.*

The above figure is illustrating the evident role of urban planning in Kamwenge town that was expressed by the community and 90% stands for the access roads and service lanes that the town council is trying to enforce and being appreciated by the community, whereas 10% is for wetland protection. The community sighted the most recent act by interested parties in a wetland located on Mbarara road who had proposed to put up a petrol station and yet in the plan it was not earmarked for that particular activity.

#### ***Private sector***

The town officials revealed that, although the private sector is supposed to get involved in the management of urban environmental problems, there is less impact experienced with the private sector in Kamwenge Town. Basically the private sector is to play a role in providing utility services that the Town Council is not able to provide due to limited financial resources for example services such as water supply, solid waste management, surface drainage, sewerage, sanitation and recreation.

The private sector is further still meant to provide technical assistance/ tool for the implementation and monitoring of environmental issues and where possible assist in capacity building programmes. Thus the private sector has not played a great role yet

### ***Non -Governmental Organizations***

The Town Council has got several NGO's and CBO's that do operate in the district and only two organizations are directly dealing in environmental affairs in the Town Council.

**Table 10: The roles of development partners in environmental management**

NGO	Activities
Peace Foundation	Awareness creation among the community members. Planting of trees Soliciting for funds from international donors
Distinct Eco Development Association.(DECODA)	Advocate for environmental protection. Undertake research and disseminate information on issues related to the implementation of environmental matters.

*Source: Data based on field Interviews.*

It's necessary to point out that, the organizations expressed a challenge of scarce resources and therefore not much has really been achieved towards environmental management from these organizations.

### ***The Community***

The politicians explained the various roles that the community leaders, among which making and enforcement of bye-laws for protecting the environment. The Town Council is to have an environmental committee represented by secretary of production and natural resources. The committee plays a role of mobilizing the people within its jurisdiction to conserve natural resources through self -help projects, to carry out public environmental education campaigns, to monitor all activities within its local jurisdiction to ensure that such activities do not have any significant impact on to the environment, to prepare a local environment work plan that is consistent with the national environment Action Plan and the District Environment Action Plan.

Despite the various roles that community leaders and individuals, the opinions show that the community, plays a great role of being a key informant to the Town Council mostly on wetland encroachers and cutting of trees.

**Figure 16: Community roles in management of urban environmental problems.**

NO	Community Environmental Roles in Kamwenge Town	Frequency	Percentage
1	Being conscious of the environment	1	2.5%
2	Planting trees	2	5.0%
3	Formulate community bye laws	1	2.5%
4	Provision of labour and materials	3	7.5%
5	Maintaining of roads by slashing	1	2.5%
6	No role played and mentioned	7	17.5%
7	Carrying out informal campaigns	2	5.0%
8	Restrict construction to dry seasons	1	2.5%
9	Run off channels	1	2.5%
10	Source of information to government	21	52.5%
	<b>TOTAL</b>	<b>40</b>	<b>100%</b>

*Source: Data based on questionnaires carried out during field work.*

From the above table, 52% of the community respondents mentioned that they play a role of being key informants to the government by reporting all the encroachments', pollution cases and defaulters cutting trees. While 17.5% did not have a role to play in environmental management.

All in all despite the role played by various actors in environmental management, the urban problems still do exist and they are faced by lack of cooperation, coordination of activities, limited financial resources and unwillingness of the town council to work as a team with NGO's.

### **5.5 Strategies to effectiveness of urban planning in the management of environmental problems in Kamwenge Town.**

MOLG officials explained that truly Uganda has experienced phenomenal growth and expansion of urban centers all over the country. There is an unprecedented rural – urban migration as people search for more viable economic opportunities. The influx has been taking place without the corresponding physical and socio-economic infrastructure, which is partly due to absence of a consistent and coordinated housing and urbanization policy and weak planning. To ensure planned growth of towns and urban centers development, the MOLG has come up with several interventions and investments so that sustainable development can be achieved not only in Kamwenge Town, but the country as a whole ;-

Publishing and disseminating the urban planning rules and regulations. The rules will help the country minimize the rapid growth of shanty towns and slums which will eventually have adverse effects on to the urban environment and public health.

The Ministry has also got plans of operationalizing the Local Governments Rating Act 2005 to enhance revenue generation in Local Governments. The officials further explained that this act comes into force at the time when Local Governments have diminished since the graduated tax was abolished, whereas the demand for services continues to rise country wide. Operationalizing the Act will reduce the challenges faced by most urban authorities in mobilizing local revenue. This act is specifically to deal with urban planning services.

The Ministry proposes a strategy that involves assisting all Town Councils in surveying and carrying out accurate mapping, gathering and maintaining land related data for urban authorities to know what they own; and facilitating administration of property rights. Another strategy involves the Operationalization of the Local Government Act (Amendment) Act 2005 with respect to the guidelines for establishment of town boards.

Training and capacity building of all physical planners, Town clerks, Engineers, Public Health officers in matters pertaining to physical planning. Conducting studies on criteria to guide emerging growth centers into towns. Under the LGDP II programmes, the MOLG has tried to assist urban areas to prepare land use plans and about 80 towns councils will have plans by October 2007. The Ministry further proposes that the local authorities need to be sensitized and urban areas need to be given attention. For example revision of budgets relating to urban planning and financing of the planning department.

While the Physical Planning Department at the Ministry of Lands Housing and Urban Development also revealed that, the plans and the strategies that the department is undertaking at national level in order to improve the effectiveness of urban planning are as follows; The urban planning principle Act of 1964 is being revised since its widely conceived as outdated in order to accommodate the current trends of growth and development in the country. Secondly there is a move to create the directorate of urban planning so that it can have the capacity to carry out development control effectively in the whole country.

The Non –governmental organizations were of the view that the community needs to be sensitized on sanitation and hygiene, where to locate these activities as the town grows. It's also vital to note that most of the population is not highly educated majority stopped at ordinary level and they very much emphasized on awareness creation for example one of the community members had to ask this question "*what do you mean by urban planning?*" .This expression gives a general strategy that other respondents and interviewees had put a cross in order to improve on planning.

NEMA officials suggested the same strategy as there being a need for sensitization programmes country wide on urban planning and environmental management.

This is against the background of NEMA appreciating what urban planning does in acting as an environment management tool.

The Non –Governmental Organizations in the town also, talked of promoting public participation in the process of plan preparation which would be one way of enhancing the implementation of the structure plan since people will feel they own the plan and be supportive of the whole scheme.

Finally, the Town Council officials mentioned that there is need to have a final approved structure plan with mended complaints, since it will be legally binding which was due in August, and then they would prioritize its implementation in order to sort various complaints on noise and air pollution caused by the maize mills located near residential areas. "*The draft plan has been in place and the local authority has not made any arrangements to start implementing the plan*" one official said.

## Chapter Six

### 6.0 Conclusions and Recommendations

#### 6.1 Conclusions

There are a number of issues rising from the study and the conclusion part looks at the research questions on how urban planning can be used as a tool in environmental management in Kamwenge Town.

##### ***Main urban environmental problems.***

The study has revealed that Kamwenge Town Council has got a structure plan and the main problem is that there is poor implementation of the plan and weak legal enforcement of the land use regulations and standards as such, the town grows without guided developments which has eventually affected the quality of life of the people and the environment which is manifested by air pollution, noise pollution, water pollution, wetland degradation and encroachment for human settlement and farming, solid waste management problems and sanitation such as lack of space to even put garbage containers as mentioned by one “*disgusted*” member of the community, over crowding, poor drainage and inadequate recreational areas.

It can therefore be concluded that due to the absence of effective implementation of urban planning in Kamwenge town, there is need to place emphasis on the enforcement of urban planning laws and regulations such that the identified environmental problems, can then be minimized or avoided.

The strengthening and enforcement of the urban planning laws and regulations in Kamwenge will promote a livable and sustainable town, through reservation of land for public use such as green open spaces, recreational areas like parks and sports, thereby avoiding overcrowding and promoting good aesthetics in the town. Urban planning law enforcement would further ensure efficient transport system by restricting developments on road reserves and guiding individual decisions on where to locate their buildings following set building standards and rules for creation of access roads and service lanes for easy connectivity from one point of the town area to another at ease with less traffic jam and congestion.

By making the implementation of urban planning laws effective, then Kamwenge town will be in position to gazette, protect and manage the ecologically sensitive areas like the wetlands, hill tops and tree areas by providing land use regulations and buffer zones which restrict their encroachment and this process would help Kamwenge small as it is to become an ecological city.

When planning is also prioritized and made effective, separation of incompatible activities identified in Kamwenge like maize mills and residential areas, scattered metal workshops would then cease to exist. This can be attained through zoning of activities whereby industries are separated from residential areas and as such protecting human beings from noise and air pollution.

Proper enforcement of urban planning regulations is a means to good solid waste management and sanitation. This can also be achieved through proper location of activities by having well established solid waste management system that provides and reserves land for garbage containers, dumpsites and landfills and plots developed need to have land for provision of storage of garbage and recycling. Whereas sanitation will only be achieved if land is reserved for drainage, public toilets and proper siting of pit latrines.

The application of planning regulations will help achieve orderly, efficient, effective, healthy, equitable and ecological cities.

### ***Problems encountered in managing the urban environment in Kamwenge Town***

The management of urban environmental problems in Kamwenge is attributed to many factors, such as: lack of human resource capacity, limited financial resources, and lack of accurate data or information for planning purposes and poor revenue collection, poor political leadership and commitment, and limited level of awareness on environmental issues among the community members.

During the analysis it was discovered that the town council lacks qualified staff to carry out planning functions. Further, it was found out that in a whole financial year only an equivalent of 1000 Euro was set aside for urban planning functions, so was revenue generated from development controls were so insufficient to run the functions.

It was as well found out that there was no information in the council that could be relied for planning purposes for example, there were no cadastral data, topographical maps e.t.c, which would be useful to the council, developers and the general public.

Although the Town council claimed to have sensitized the people, and established environmental committees, it was discovered that the Town Council had never conducted any awareness to sensitize the community, hence, low level of knowledge on urban environmental problems amongst the residents.

During the analysis it was also realized that politicians especially the councilors do not have commitment to the management of the urban problems. The Mayor and the councilors have never taken any action on the complaints of the residents about environmental degradation raised by the residents.

### ***Roles of different stakeholders in urban environmental management in Kamwenge Town***

Kamwenge Town is fortunate to have several actors involved in urban environmental management right from the national level to a local level. The different actors do operate under a system of decentralization and have various roles to play like supervision, monitoring, capacity building, provision of technical support and financial support as well. All the above roles are played by NEMA, MOLG and Ministry of Lands Housing and Urban Development while advocacy, research and sensitization of the local community is being done by the Non –governmental organizations and the Town Council respectively.

Although in the process of playing different roles in urban environmental management, the stakeholders do experience challenges as: Lack of cooperation, coordination of activities and the will to promote team work by the town council, limited funds to carry out projects.

The study revealed that much as the Non Governmental Organizations that operate in the town, are willing to work with the Town council, there seems to be no one interested in team work and emerging ideas in order to have a common approach to solving the environmental problems.

In addition one of the challenges that the stakeholders face is lack of proper coordination, the study found out that, information sharing is very poor because there are no feed backs and efficient reporting systems and access to public information which makes coordination of activities and roles difficult for the stakeholders.

Limited financial support as another challenge to the stakeholders, much as they may have wished to have a joint effort towards environmental management, on one hand, on the other hand it may not be possible to involve all the stakeholders in their activities and roles and therefore the management of the urban environmental problems still continues to be a problem because not all the roles are carried out sufficiently for example research, supervision, monitoring , awareness creation and as such environmental problems have remained a problem to Kamwenge town council.

## **6.2 Recommendations**

The recommendations presented are based on the analysis and conclusions arrived at in the above section covering the strategies that can be used to improve the effectiveness of urban planning and environmental management.

There is need to prioritize and enhance the implementation of the structure plan by enforcing the urban planning laws and regulations, this could be achieved through speeding up the process of revision of the principle law that governs planning, creation of a directorate of physical planning.

Besides, for successful implementation of the land use plan and compliance from the town residents, the physical planning department in Uganda needs to revise its land use regulations that are believed to be high for the urban poor population like building codes and standards, the process of building plan approval that is too long for the developers, to avoid the urban population resorting to cheaper means of living in low lying areas and not meeting the set formal standards which later on leads to poor environmental conditions in urban areas

The town council ought to recognize the urgent need for enhancement of local revenue generation in order to finance the department's directly responsible for management of environmental problems in the town council. This could be done by revising user charges fees and, development application fees and ensuring that land based revenues like property tax collections are enforced to the letter. The council further can levy penalties on people who flout the urban planning regulations as a deterrent measure as well as a means of realizing revenue.

The Council also needs to acquire up to date information on property boundaries, owners, plot sizes and accurate mapping, gathering and maintaining land related data using Geographical Information System (GIS).

The council can boost the capacity by conducting a training needs assessment, conduct training to existing staff and ensure in future it only employs staffs who are qualified. Salaries and other emoluments also need to be looked into to attract and retain qualified urban managers.

Research in urban growth and environment should be consistently sustained in order to find ways of tackling emerging urban challenges. Awareness campaigns among the community members should be stepped up by use of both print and electronic media. E-technology like use of short message system may be employed to reach the community on sensitive urban issues.

An integrated approach to environmental management in Kamwenge by promoting both the involvement of all sectors and actors would add value to the effort. Urban planning ought to be supported by all the stakeholders at all levels in order to achieve better organized, efficient, effective, healthy, equitable, safe and environmental cities.

However despite the fact that several strategies, have already been put in place to improve on urban planning, its success to a large extent depends entirely on the commitment of Kamwenge Town's leaders and how they will effect the implementation of land use regulations and development control measures such as zoning, subdivision, building codes and standards. The success will be determined by political commitment, availability and mobilization of resources, effective staffing and with particular importance to staff commitment, and lastly community involvement and support.

In conclusion the Town Council's leadership needs to change her attitude and be more responsive to the urban planning and environmental management as a starting point.

### ***Area for further research***

Based on the literature, there is an emerging trend where participation is touted as the best approach in urban environmental management the world over. I therefore recommend that a further research be conducted on the suitability of this approach in Kamwenge town Council in particular and in Uganda in general.

### ***Special Recommendation.***

A special request and suggestion came from the residents to Kamwenge Town Administration that water scarcity was their main problem and would be happy and willing to pay for any water services provided by the government. The community expressed their dissatisfaction over the leadership of the town because a 20 liter Jeri - can that costs about (500-1000/=) Ugandan shillings is not within the reach of the majority of the population. They further complained that the water from the underground sources is polluted with human waste due to irresponsible acts of some people in digging and establishing pit latrines near the water sources , what makes it even worse are the pit latrines located in the wetlands leading to continuous out break of cholera, typhoid and dysentery in the town.

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## **Annex**

### **Annexes 1: Questionnaires addressed to respondents of the Community**

#### **SECTION 1.**

##### **SOCIAL AND ECONOMIC DATA.**

1. Number of questionnaire.

.....  
.....

2. Sex of respondent.

(a) Male (b) Female

3. Status of respondent

(a) Household head (b) Dependant (c) Spouse

4. Age of respondent.

(a) 15-23 (d) 41- 65  
(b) 24-30 (e) 66-70  
(c) 31-40 (f) 71+

5. Occupation of respondent.

(a) Housewife (e) Health worker  
(b) Business (f) Student  
(c) Unemployed (g) Farmer  
(d) Civil Servant

6. Education level.

(a) Primary (d) Graduate  
(b) O-level (e) Others  
(c) A-level

7. Religion of respondent.

(a) Moslem  
(b) Protestant  
(c) Catholic  
(d) Others

8. Area of Residence.

(a) Parish.....  
(b)Village or Zone.....

#### **SECTION II** **Environmental Problems;**

1. What activities are carried out in this area or village?

- (a) Agriculture (d) Industry
- (b) Residential (e) Mixed land use
- (c) Commercial (f) Institutional
- (g) Other.....
- ...

2. What are the environmental problems you face in this zone or village?

- (a) Solid waste and sanitation (g) lack of recreational green areas
- (b) Air pollution (h) Destruction of wetlands.
- (c) Noise pollution (i) Destruction of hill tops
- (d) Water pollution (J)
- others.....
- (e) Poor accessibility .... ..
- .....
- (f) Poor drainage

3. How do you solve the environmental problems in this zone or think these problems can be solved?

.....  
.....

4. Is there any village committee specifically responsible for environmental problems in this village? If yes what is its name and how long has it been in operation?

.....  
.....

### **Section III**

#### **Urban Planning:-**

5. Do you know of the new land uses that are proposed for in the Town Council Plan for this zone? If yes name them.

- (a) Residential (d) Agricultural
- (b) Commercial (e) Industrial
- (c) Institutional (f)
- Other.....
- .....
- .....

6. Do you follow any procedures before you develop this area and if any explain the procedure?

- (a) Building rules and standards
- (b) Zoning procedures
- (c) Land issues

(d)  
Other.....

7. Are there any problems that you do face as a result of the Town Council Plan?, and if any explain them.

(a) Displacement (c) No impact felt  
(b) Rigidity (d)  
other.....  
.....  
.....

8. In your own opinion what contributions has urban planning made to the development of Kamwenge Town?

(a) Creation of access roads. (f) Proper solid waste management.  
(b) Protection of the swamps. (g) Creation of service lanes.  
(c) Clean town-aesthetics. (h) Protection of the road reserves.  
(d) Creation of green areas. (i) Avoiding water pollution.  
(e) Avoiding air pollution.  
(j) Other.....  
.....  
.....

9. Do you participate in planning for the Town? If yes how?

.....  
.....

If no, why?  
.....  
.....

10. Why do u participate in planning for the Town?

.....  
.....

11. How does the community help the government in managing the urban environmental problems?

.....  
.....

12. Are there any urban planning services that you do pay for? If yes mention them.

.....  
.....

13. If no, are you willing to pay for any planning services?

.....  
.....

14. Are there any other comments and suggestions you would like to make?

..... **THANK YOU.**

**Annexes 2: Questionnaires addressed to Political Leaders in Kamwenge Town Council.**

**SECTION 1**

**Urban Environmental Problems.**

1. What is your Political rank in the Town Council?

- (a) LCIII - (Local Council)
- (b) LC 11 - (Local Council)
- (d) LC 1 - (Local Council)
- (e)

Other.....

2. Which constituency do you represent?

- (a).....
- (b).....
- (c).....

3. Are there any environmental problems that you do face in that zone?

.....  
.....

4. What role do you play in management of urban environmental problems in the town?

.....  
.....

5. What challenges do you experience in managing urban environmental problems in Kamwenge Town?

.....  
.....

6. How are the urban environmental problems solved in your zone or could be solved?

.....  
.....

7. Who are involved in management of the urban problems in the town?

.....  
.....

## **SECTION II.**

### **Urban planning**

8. What role did you play in plan preparation?

.....

9. How does the government work with the community in terms of land use?

.....

10. How has the land use plan helped in solving urban environmental problems?

.....

.....

11. How has the community benefited from the land use plan?

.....

.....

12. What solutions do you suggest for improving urban planning in order to manage urban environmental problems of the Town Council as a political leader?

.....

.....

**THANK YOU.**

### **Annexes 3: Questionnaires addressed to the Technical Officers in the Town Council**

**Department.....**  
**Title.....**

#### **SECTION I.**

##### **Urban Environmental Problems:-**

1. What are some of the environmental problems you do face in the town?

.....

2. How does the Town Council manage these problems?

.....

.....

3. What are the challenges that you do encounter in managing environmental problems?

.....

.....

4. What is your role in environmental management?

.....

.....

.....

5. How does this role relate to urban planning?

.....

.....

6. How could the urban environmental problems be solved in Kamwenge Town?

.....

.....

7. Which other actors do participate in management of the environmental problems in Kamwenge a part from the council?

.....

.....

8. What other participatory approaches have been introduced to tackle environmental problems?

.....

.....

9. What is the communities' contribution towards environmental management?

.....

.....

## **SECTION 11**

### **Urban Planning.**

10. Do you participate in planning for the town? If yes, explain how?

.....  
11. Which elements from your department are important in the urban planning process?

.....

12. What role has urban planning played towards urban environmental management?

.....  
.....

13. How could urban planning help in effective solving of environmental problems.

.....  
.....

14. How much funds are availed for planning and management of the environmental problems?.....

.....

## **Annexes 4: Interview Guide for NEMA.**

### **Background Information;-**

What is the name of the organization?

When was it created?

What is your role in Local Governments?

How do you relate with Kamwenge Town Council?

Who is responsible for planning and enforcement of the urban environmental policies?

### **Urban Environmental Problems.**

What is your contribution towards management of urban environmental problems in Kamwenge Town?

How could urban environmental problems be solved in Kamwenge Town?

### **Management Problems.**

What challenges do you experience with management of the urban environmental problems in Local Governments? Case of Kamwenge Town.

### **Stakeholders in Urban Environmental Management in Kamwenge Town.**

Who are the actors usually responsible for urban environmental problems in Uganda, More so in Kamwenge Town Council?

### **Strategies to Improve the Effectiveness of Urban Planning In the Management of Urban Environmental Problems.**

Have you ever participated in the urban planning process in the last five years? if yes what was your role?.

What are some of the planning instruments that are used in environmental management by your organization?

What challenges do you encounter in the urban planning process towards environmental management?

How could Urban Planning be improved in order to manage urban environmental problems, in Kamwenge Town?

## **Annexes 5: Interview Guide for the Line Ministries.**

### **MOLG, Ministry of Lands Housing and Urban development.**

#### **Background Information;-**

What is the name of the Ministry?

When was it established?

What is your role in Local Governments?

How do you relate with Kamwenge Town Council?

Who is responsible for planning and enforcement of the urban environmental policies?

#### **Urban Environmental Problems.**

What is your contribution towards management of urban environmental problems in Kamwenge Town?

How could urban environmental problems be solved in Kamwenge Town?

#### **Management Problems.**

What challenges do you experience with management of the urban environmental problems in Local Governments? Case of Kamwenge Town.

#### **Stakeholders in Urban Environmental Management in Kamwenge Town.**

Who are the actors usually responsible for urban environmental problems in Uganda, More so in Kamwenge Town Council?

#### **Strategies to Improve the Effectiveness of Urban Planning In the Management of Urban Environmental Problems.**

Have you ever participated in the urban planning process in the last five years? if yes what was your role?.

What are some of the planning instruments that are used in environmental management by your organization?

What challenges do you encounter in the urban planning process towards environmental management?

How could Urban Planning be improved in order to manage urban environmental problems, in Kamwenge Town?

## **Annexes 6 : Interview guide for the civil society.**

### **Background Information;-**

What is the name of the organization?

When did it start?

What is your role in Local Governments?

How do you relate with Kamwenge Town Council?

### **Urban Environmental Problems.**

What is your contribution towards management of urban environmental problems in Kamwenge Town?

How could urban environmental problems be solved in Kamwenge Town?

### **Management Problems.**

What challenges do you experience with management of the urban environmental problems in Local Governments? Case of Kamwenge Town.

### **Stakeholders in Urban Environmental Management in Kamwenge Town.**

Who are the actors usually responsible for urban environmental problems in Uganda, More so in Kamwenge Town Council?

### **Strategies to Improve the Effectiveness of Urban Planning In the Management of Urban Environmental Problems.**

Have you ever participated in the urban planning process in the last five years? if yes what was your role?.

What are some of the planning instruments that are used in environmental management by your organization?

What challenges do you encounter in the urban planning process towards environmental management?

How could Urban Planning be improved in order to manage urban environmental problems, in Kamwenge Town?

**THANK YOU.**

## Annexes 7: Schedule for Research

**Table 11: Time scale**

No	Activity	Time	Remark
1	First draft submission	12 <sup>th</sup> /February/2007	RMT
2	Literature review	February -----	IHS Library
3	Thesis Supervisors assigned	16 <sup>th</sup> /February/2007	Provisional thesis supervisor.
4	Subsidy Proposal	6 <sup>th</sup> -13 <sup>th</sup> / April / 2007	“
5	Second draft Submission	15 <sup>th</sup> / June/2007	Blackboard
6	Third draft Submission		
7	Presentation of thesis proposal	20-22/June/2007	Thesis Supervisor Specialization coordinators RMT lectures
8	Final research proposal	Before 29 <sup>th</sup> /June/2007	Thesis Supervisor
9	Approval by the thesis Supervisor		
10	Data Collection in the Field	2 <sup>nd</sup> July -5 <sup>th</sup> August 2007	Uganda-Kamwenge
11	Colloquium-Second	6 <sup>th</sup> and 7 <sup>th</sup> August /2007	IHS
12	Writing of thesis	8 <sup>th</sup> August -17 <sup>th</sup> September 2007	IHS
13	First draft thesis proposal	3 <sup>rd</sup> September 2007	Thesis Supervisor
14	Submission of final thesis	17 <sup>th</sup> September 2007	Black board Course Bureau
15	Defense of Thesis	24 <sup>th</sup> and 26 <sup>th</sup> September 2007	IHS
16	Closure of UMDIII	28 <sup>TH</sup> September 2007	IHS

Source: IHS Thesis Hand Book, 2007.

## Annexes 8: Socio –Economic Characteristics

The socio –economic characteristics of the community respondents

### Sex of community respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Male	28	70.0	70.0	70.0
	2 Female	12	30.0	30.0	100.0
	Total	40	100.0	100.0	

### Status of community respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Household head	28	70.0	70.0	70.0
	2 Dependant	4	10.0	10.0	80.0
	3 Spouse	8	20.0	20.0	100.0
	Total	40	100.0	100.0	

### Age of community respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 15-23	2	5.0	5.0	5.0
	2 24-30	5	12.5	12.5	17.5
	3 31-40	16	40.0	40.0	57.5
	4 41-65	12	30.0	30.0	87.5
	5 66-70	5	12.5	12.5	100.0
	Total	40	100.0	100.0	

### Religion of community respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Moslem	7	17.5	17.5	17.5
	2 Protestant	14	35.0	35.0	52.5
	3 Catholic	12	30.0	30.0	82.5
	4 Others	7	17.5	17.5	100.0
	Total	40	100.0	100.0	

## Annexes 9: Kamwenge Three Year Development Plan 2006/ 2007

**Table 12: Budget Allocation**

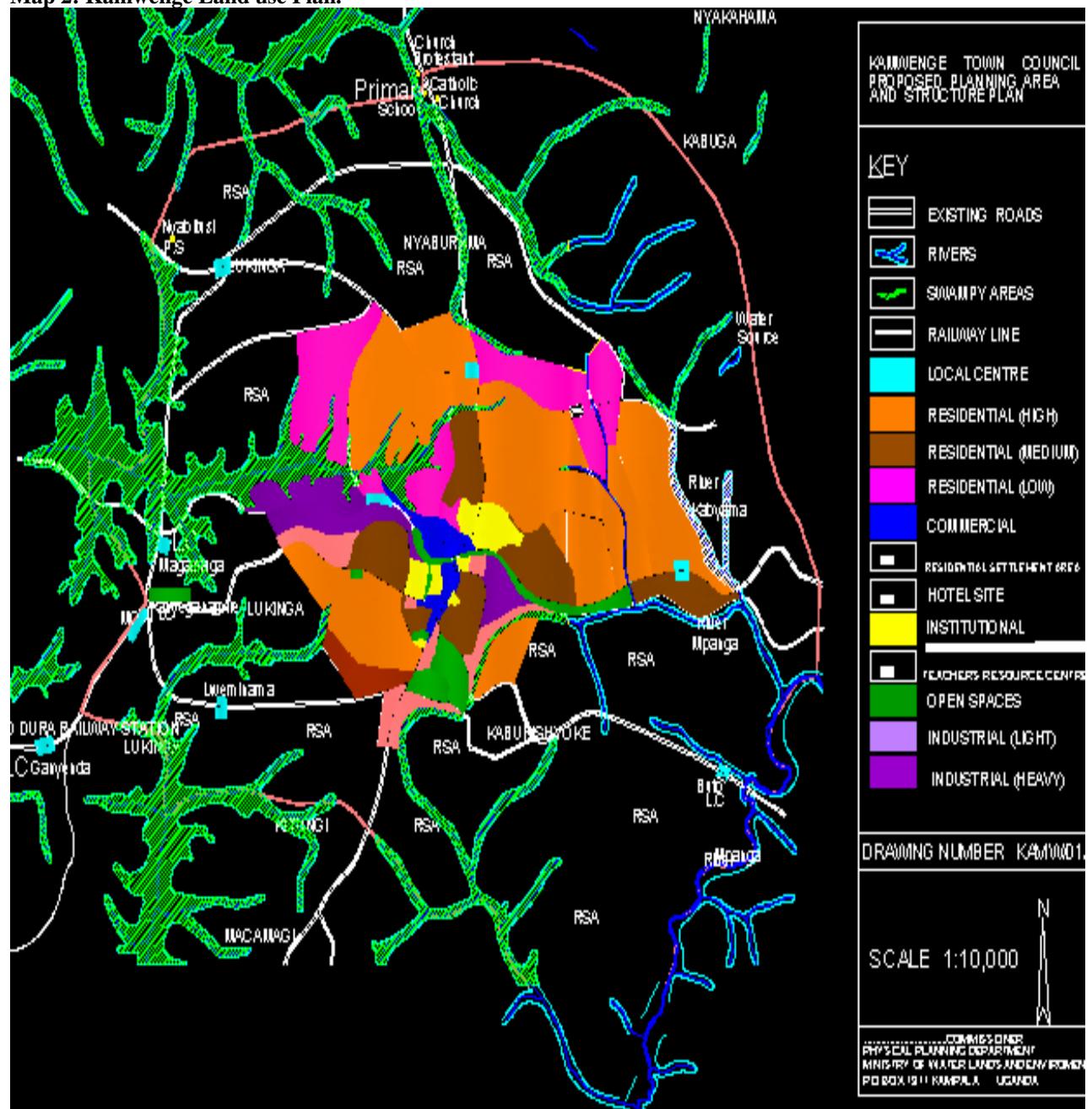
SECTOR	NAME OF PROJECT	LOCATION	ESTIMATED COST (USH)	SOURCE OF FUNDING
Finance and Planning	Procurement of laptop computer	Town council offices	2,000,000	Local revenue
	Co –funding PMA LGDP	T/C offices	360,000 450,000	Local revenue
Production	Establishment of pineapple demo	Kamwenge ward	900,000	PMA
	Establishment of pineapple demo	Kamwenge ward	900,000	LGDP
	Procurement of citrus fruits		2,668,117	PMA
	Establishment of wood lots in two primary schools	Businge and Rubona primary schools	1,372,770	LGDP
Works and Technical services	Opening of road	Behind cape hote	6,000,000	Local revenue LGDP
	Routine road maintenamce 20km	All wards	12,000,000	Local revenue
	Construction of VIP Latrine	Town Council headquaters	4,000,000	LGDP
	Maintenance of water works	All wards	1,871,423	Local revenue
	Surveying and fencing town council land	All wards	5,000,000	Local revenue
	Opening access raod (0.8km)	Kanyegaramire	8,000,000	LGDP
	Completion of office block	Town council	26,000,000	LGDP/ Local revenue
	Installation of electricity	Town council	10,000,000	LGDP/Local revenue
	Periodic road maintencance (5km)	Alll wards	49,874,000	Poverty Alleviation fund (PAF)
Urban Planning	Completion of payment for structure plan for Town Council	Town Council	5,000,000	Equalization Grant
	Drainage works and sanitation	Town Council	6,253,000	Equalization Grant
Education and sports	Provides bursaries For five students	All wards	350,000	
	Procurement of school desks	All wards	1,875,000	
Adminstration	Investment / Monitoring costs  PAF LGDP PMA RETOOLING	Town Council	5,486,000 4,855,620 356,812 2,427,810	PAF LGDP PMA LGDP
	<b>TOAL</b>		<b>384,983,129</b>	

*LGDP- Local Government Development Programmes.*

*PMA- Plan for Modernization of Agriculture.*

*1 Euro = 2224 Ugandan shillings*

## **Map 2: Kamwenge Land use Plan.**



*Source: Kamwenge Town Council.*