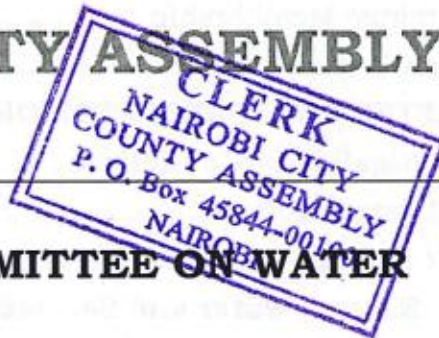




NAIROBI CITY COUNTY ASSEMBLY



NINTH REPORT OF THE COMMITTEE ON WATER AND SANITATION

BENCHMARKING VISIT TO THE REPUBLIC OF RWANDA

20TH APRIL TO 28TH APRIL 2014

**CLERK'S CHAMBERS,
CITY HALL,
NAIROBI.**

APRIL, 2014

Table of Contents

Abbreviations and acronyms	iii
Preface	iv
Committee Membership	v
Acknowledgement.....	vi
CHAPTER ONE: PRESENTATIONS	1
1.1 Kigali City Council	1
1.1.1 Introduction	1
1.1.2 Background	1
1.2 Energy, Water and Sanitation Authority (EWSA)	3
CHAPTER TWO: SITE VISITS	10
2.1 Solid Waste Management (COPED)	10
2.1.1 Introduction	10
2.1.2 Background	10
2.2 Eco-Plastic Factory	11
2.3 Karenghe Water Treatment Plant	12
2.3.1 Introduction	12
2.3.2 Background	12
CHAPTER THREE: LESSONS LEARNT FROM RWANDAN EXPERIENCE	14
CHAPTER FOUR: CONCLUSION AND RECOMMENDATIONS	15
4.1 Conclusion	15
4.2 Recommendations	16
APPENDIX	17

Abbreviations and acronyms

COPEL	Company for Environment Protection and Development
EWSA	Energy Water and Sanitation Authority
MININFRA	Ministry of Infrastructure
RURA	Rwanda Utility Regulatory Agency
MDGs	Millennium Development Goals
MINCOFIN	Ministry of Finance
MINSANTE	Ministry of Health
RBS	Rwanda Bureau of Statistics
REMA	Rwanda Environmental Management Authority
EDPRS	Economic Development and Poverty Reduction Strategy
L.A	Local Authorities
Rwf	Rwandan Franc

Preface

1. The Committee on Water and Sanitation is one of the Sectoral Committees established under Standing Order 191. Under the Second Schedule it is mandated to consider matters related to water and sanitation services; water distribution, regulation, marketing and sewerage services. Its functions pursuant to Standing Order 191 are to:
 2. Investigate, inquire into, and report on all matters relating to the mandate, management, activities, administration, operations and estimates of the assigned departments;
 3. Study the programme and policy objectives of departments and the effectiveness of the implementation;
 4. Study and review all county legislation referred to it;
 5. Study, assess and analyze the relative success of the departments as measured by the results obtained as compared with their stated objectives;
 6. Investigate and inquire into all matters relating to the assigned department as they may deem necessary, and as may be referred to them by the County Assembly;
 7. To vet and report on all appointments where the Constitution or any law requires the County Assembly to approve, except those under Standing Order 185 (*Committee on Appointments*) and
 8. Make reports and recommendations to the County Assembly as often as possible, including recommendation of proposed legislation.

In conduct of its mandate, the Committee on Water and Sanitation in its meeting held on 21st January 2014 resolved to conduct a benchmarking visit to the Republic of Rwanda. Being the Nairobi City County Assembly lead Committee in Water and sanitation Sector, the objective of the visit was to enable the Committee learn from the management of water and sanitation services in Kigali City. To achieve this, the Committee conducted the visit from 20th April 2014 to 28th April 2014.

Rwanda is a landlocked country situated in central Africa with a unitary form of government. Also known as 'the land of a thousand hills', Rwanda has five volcanoes, twenty-three lakes and numerous rivers, some forming the source of the River Nile. The country lies 75 miles south of the equator in the Tropic of Capricorn, 880 miles 'as the crow flies' west of the Indian Ocean and 1,250 miles east of the Atlantic Ocean - literally in the heart of Africa. Rwanda is bordered by Uganda to the north, Tanzania to the east, Burundi to the south and the democratic republic of Congo to the west. The Country according to the 2012 Census has a population of approximately 12 Million and covers a land mass of

26,338 square kilometers and receive an average rainfall of between 110-200mm during the rainy months ranging from March to May and from October to November. The temperatures range from 24.6°C-27.6 °C with an altitude ranging from 1000-4500m above sea level.

The Capital City of Rwanda, Kigali city, serves as the gateway to the country. The City is divided into three (3) Districts comprising Sectors (35), Cells (161), and Cells are sub divided into Imidugudu literally villages (1061).It is presently inhabited by approximately 1 million inhabitants. Kigali is 70% urban with a significant part that is rural. Their population is relatively young with the youth making up about 60%, with women making slightly more the 50%.The city of Kigali is governed the Council of the City of Kigali and the everyday management of the city is overseen by the Executive Committee which is headed by the Mayor and deputized by two Vice Mayors; one in charge of economic and financial affairs and another in charge of Social affairs. In addition, there is the Council, Security Committee and the Executive Secretariat.

The Ministry of Infrastructure is comprised of 5 subsectors: Transport, Energy, Habitat and urbanism, Water and sanitation and Meteorology sub sectors.

Energy, water and sanitation is under the management of one government owned body titled Energy, Water and Sanitation Authority (EWSA) that is charged with implementation of policies from the line ministries. However, EWSA, as told, is set to be split into two companies, one to manage water and Sanitation and another, Energy. Regulation of the services offered is done by Rwanda utilities Regulatory Agency (RURA).

Committee Membership

The Committee on Water and Sanitation comprises the following members:

- | | |
|---------------------------------------|-----------------------------|
| 1. Hon. Alex O. Otieno, MCA | -Chairman |
| 2. Hon. Kenneth Thugi, MCA | - Deputy Chairperson |
| 3. Hon. Michael Ogada, MCA | |
| 4. Hon. Herman Azangu, MCA | |
| 5. Hon. Robert Mbatia, MCA | |
| 6. Hon. Beatrice Kwamboka, MCA | |
| 7. Hon. Hashim Kamau, MCA | |
| 8. Hon. Abdi Hassan, MCA | |
| 9. Hon. Pius Otieno, MCA | |
| 10. Hon. Celestyne Ongere, MCA | |
| 11. Hon. Hawa Dafala, MCA | |

- 12. Hon. Maurice Akuk, MCA**
- 13. Hon. Oscar Lore, MCA**
- 14. Hon. Victoria Alali, MCA**
- 15. Hon. Monica Ndegwa, MCA**
- 16. Hon. Nancy Mwaura, MCA**
- 17. Hon. Peter Wanyoike, MCA**

The following is the list of Members who participated in the visit:

- 1. Hon. Alex Ouda Otieno**
- 2. Hon. Kenneth Thugi**
- 3. Hon. Herman Azangu**
- 4. Hon. Michael Ogada**
- 5. Hon. Victoria Alali**

The following Members of Staff participated in the visit:

- 1. Mr. Inyundele Austin**
- 2. Mr. Romeo Castro**

Acknowledgement

The Committee on Water and Sanitation wishes to thank the offices of the Speaker and the Clerk of the Nairobi City County Assembly for the support extended to it in the execution of its mandate, particularly in the conduct of this visit.

The Committee further extends many thanks to the Ministry of Infrastructure (MININFRA) of the Republic of Rwanda, Eco-plastic, Company for Environmental Protection and Development (COPED), Energy Water and Sanitation (EWSA), Karenge Water Treatment Plant and Kigali City Council for the acceptance to meet with the Committee, their warm welcome and their entire effort to ensure that the Committee successfully conducted its visits to various places. From these visits, the Committee was able to learn significantly and achieved the objectives of the visit.

The Committee also thanks the Secretariat for their input and valuable contributions during and after the visit and compilation of this report.

Finally, much thanks to the Members of the Committee on Water and Sanitation. Your committed participation and contribution in decision making regarding the trip was invaluable to its success.

Hon. Members,

On behalf of the committee on Water and Sanitation, it is my pleasant duty and privilege, to present the Committee's Report on benchmarking visit to the Republic of Rwanda.

DATE 21/5/2014

SIGN Alex Ouda

HON. ALEX OUDA OTIENO, CHAIRMAN

CHAPTER ONE: PRESENTATIONS

1.1 Kigali City Council

1.1.1 Introduction

The delegation arrived in Kigali City on 20th April 2014. The programme includes a series of meetings and site visits to COPED, EWSA, Dumba Land fill and Mageragere Eco-Plastic Factory. The delegation met the Director of District Support unit on 22nd who gave an overview of Kigali City.

1.1.2 Background

Formerly, the City of Kigali was characterized by shrubs, garbage of all kind on streets and in water trenches, public places, communities, dumpsites in communities, dust in dry season as well as mud in wet seasons, lack of sanitation facilities in public places, insufficient sanitation facilities at community level, sewage discharge in community and on streets. However, as time has passed, the City under the management of the Executive Committee has been transformed into one of the cleanest Cities in the region. Thanks to the existing strong leadership and political will, legal framework, policies, guidelines and institutional structures.

1.1.3 The legal framework, policies and guidelines

These categories have been broken down as follows:

1. Legal framework:

- Organic Law establishing Rwanda Environment Management Authority (REMA) (16/2006),
- Organic Law on environmental protection (04/2005),
- Organic law establishing monthly communal work to clean up the City and the country,

2. Policies:

- National policy and strategy for water supply and sanitation services (02/2010),
- National policy on Environmental health (2008),
- National policy on medical and hazardous waste management (2008),
- Ministerial order on greening and pavement (2010),

3. Guidelines;

- Rwanda Utility Regulatory Agency (RURA) Guidelines,
- City of Kigali guidelines,

1.14 Institutional framework under water and sanitation sector

The Water and Sanitation services are a culmination of numerous bodies with each charged with roles that lead to implementation of laws, programmes and campaigns that have seen the City rise through years to achieve a clean and green environment as well as relative access to water and sanitation services. These bodies include:

- ❖ Ministry of Infrastructure/*EWSA*,
- ❖ Ministry of Finance and Economic Planning,
- ❖ Ministry of Health,
- ❖ Ministry of Local Government,
- ❖ Ministry of minerals and natural resources/*REMA*,
- ❖ Rwanda Regulatory Agency (*RURA*),
- ❖ Rwanda Bureau of Standards (*RBS*)
- ❖ City of Kigali (*Districts, Sectors and Villages*)

To achieve the status of a neat and green City environment as well as relative access to water services by the residents, the City Council works in collaboration with a number of stakeholders in the Government and private sector.

Public participation has played a major role in the sanitation subsector through communal work, waste sorting, payment of waste disposal fee, sensitization, greening of scenery areas, youth associations and street cleaning. However there are a number of challenges that arise while working with the public in the implementation of programmes and campaigns. They include:

1. Difficulty in achieving favorable behavior change;
2. Mobilization, sensitization and
3. Difference in income
4. However, once achieved the cooperation and willingness to work from the public comes with a number of advantages including efficient mobilization, easy problem identification, quick and effective communication and public infrastructure security.

1.15 Greening and City beautification

The delegation was further informed that it is a policy to green areas that are not constructed or used by any other infrastructure. Other areas include Public places (among others schools, churches, hospitals, hotels), on main roads and streets, in front of commercial buildings, in residential areas, empty sceneries.

1.2 Energy, Water and Sanitation Authority (EWSA)

Members of the delegation visited Energy Water and Sanitation (EWSA) offices on 21st April 2014. They were received by the Permanent Secretary, Ministry of Infrastructure (MININFRA) who gave a brief history of the Authority and the responsibility that EWSA is mandated to undertake.

1.2.1 Historical Background

EWSA is a company that distributes power and water in Rwanda. As a national utility, the company has been in existence since 1976, as ELECTROGAZ. ELECTROGAZ was founded in 1939 as "REGIDESO" by the colonial masters supplying water, electricity and gas to RWANDA-URUNDI with its Headquarters in Bujumbura. The company was later divided into REGIDESO Rwanda and REGIDESO Burundi in 1963.

In 1976, REGIDESO Rwanda became ELECTROGAZ and was granted the monopoly for the production and distribution of water and electricity in the country. After the 1994 genocide, there was an increase in urban settlements, thus increased demand for water and electricity. The installed capacity for water and electricity supply could not sustain the increased demand, which called for further investments.

In 1999, a law was passed removing the monopoly on electricity and water supply. This encouraged independent power producers to start their operations. In 2003, ELECTROGAZ was placed under a management contract with Lahmayer International to manage and restructure ELECTROGAZ in collaboration with Hamburg Water Works for 5 years. This lasted for only two years and in March 2006 the management contract was terminated and it reverted to the Government of Rwanda.

The Board of Directors of the company was asked to appoint new management and restructure the utility to meet the needs of the nation better. Under the new management, ELECTROGAZ has grown, repositioned and become innovative to serve the customer. On 9th September, 2006 ELECTROGAZ was split into RECO (Rwanda Electricity Corporation) and RWASCO (Rwanda Water and Sanitation Corporation).

On 7th December 2010, the National parastatals charged with water and electricity distribution RECO & RWASCO were merged and given the name EWSA i.e Energy, Water and Sanitation Authority.

EWSA provides water to Kigali City and all urban centers of Rwanda. Natural springs and some other Government projects supply the rural areas with the required water.

EWSA operates under a board of directors headed by a Director General. There are three deputies to the Director General: dealing with electricity, water and sanitation and Corporate services in their respective portfolios. Under each, there are development and utility divisions except the Commercial Services that has ICT, Administration and legal units.

The Vision statement of EWSA is to be the most efficient and customer centric utility company in the region while their Mission statement is to provide sufficient and quality water and electricity to their customers at affordable and sustainable rates that support the socio-economic development of the country.

The delegation was informed that the Key Objectives of EWSA include:

1. **Financial:** Achieve financial solvency for the company.
2. **Technical:** Improve the scope and reliability of the supply and distribution of water and electricity from EWSA, including requests for new connections for all provinces and for all type of customers.
3. **Operational:** Increase the efficiency of EWSA operations, reducing cost and increasing the amount of water and electricity produced per employee.
4. **Commercial:** Drastically improve commercial operations and services of EWSA.

1.2.2 The Institutional Framework of EWSA

The institutional framework is set out as follow:

FUNCTION	INSTITUTIONS
Policy formulation and oversight	MININFRA AND MINSANTE
Sector planning, coordination, monitoring and evaluation and capacity building	MININFRA, MINSANTE, EWSA, L.A
Public financing	MININFRA, MINSANTE, EWSA, L.A, MINCOFIN, WATSAN BASKET FUND

Project planning and implementation	MINSANTE,EWSA,L.A
Service provision, operation and maintenance	EWSA,L.A, PRIVATE OPERATORS
Independent regulation	RURA,REMA,RBS

(National Policy & Strategy for Water Supply and Sanitation Services, MININFRA, 2010)

1.2.3 EWSA's obligations

According to the Permanent Secretary, EWSA's obligations include:

- Coordination of all activities related with programmes aimed at development and exploitation of energy sources;
- Sensitization of users of energy of any kind and water in any way possible, as well as sanitation infrastructure;
- Protection of Lake Kivu and its shores and people residing around it during Methane gas extraction activities;
- Proper management of electricity infrastructure, gas, petroleum products, water and sanitation;
- Putting in place a system for transportation and waste management; and
- Other obligations included in the law establishing EWSA.

1.2.4 Specific responsibilities

The Energy, Water and Sanitation Authority is charged with the following responsibilities:

- Ensure Safe and Sufficient Supply of water in the country using, where possible, strategic stock and to ensure its rational management;
- Carry out sensitization and identification of technical and economic studies related to planning and implementation of infrastructure projects in the energy, water and sanitation sectors;
- Ensure that planning of investment in the water and sanitation sectors meets the water and sanitation policies as adopted by Government;
- Facilitate the private operators investing in processing and distribution of water as well as those involved in sanitation works in order to merge them in existing circuits;

- Promote Capacity Building trainings in the area of energy and water and sanitation, rational use of energy, water and effective sanitation management, inexhaustible and substitute energies;
- Take part in research and development works in water and sanitation sectors in collaboration with all concerned stakeholders;
- Collaborate and cooperate with other institutions either at national, regional and international levels with similar missions to those of EWSA;
- Ensure management of activities related to water and sanitation infrastructure and other related activities whether directly or indirectly
- Ensure efficient system of use, management, and conservation of sanitation infrastructure

1.2.5 Policy Orientation

- Vision 2020: Ensure 100% access to drinking water and sanitation services by 2020
- The Second Economic Development and Poverty Reduction Strategy (EDPRS II) & 7 Years Government Program: Achieve 100% access to clean drinking water at 500m distance in rural areas and 200 m in urban areas. Achieve 100% for proper sanitation
- Millennium Development Goal 7: Rwanda commits to reduce by half the percentage of the population which has no sustainable access to drinking water supply and sanitation by 2015
- National Policy and Strategy for Water Supply and Sanitation services

1.2.6 Objectives of Rwanda Water Supply and Sanitation (WSS)

The Permanent Secretary informed the Members that WSS objectives are anchored on the global objective whose objective statement is to ensure sustainable and affordable access to safe water supply, sanitation and waste management services, as a contribution to poverty reduction, public health, economic development and environmental protection.

Specific objectives are formulated in a way to be directly used for strategic planning and monitoring. Each sub-sector objective will be associated with its indicators, time-bound targets and implementation responsibilities.

Pillars and Principles under which WSS operates includes the formulation of WSS services policy is guided by a number of central tenets as follows

- Priority to basic services
- Decentralization
- Community participation

- Cost recovery and financial sustainability
- Private sector participation
- Operational efficiency and strengthening of accountability
- Emphasis on sanitation and hygiene
- Interests of women and children
- Grouped settlements
- Environment and water resources protection
- Inclusive programme approach
- Results-based management

1.2.7 Water Treatment, Distribution and Sanitation

The delegation was informed that water supplied by EWSA is treated according to the international standards. In order to meet current water standards, specific water purification steps are taken that include: Physical and chemical treatment; and Laboratory analysis to assure the water quality. After these steps have been taken and it is ascertained that the water is safe, it is then distributed.

According to the National Census of 2012, 73% of the national population have access to drinking water of which 92% of the urban population and 69% of the rural population have access to drinking water. 96% of the Rwandan population has toilet facilities.

Even though there is no established functional sewerage system in Kigali City, the law demands that each construction should have a septic tank and treatment mechanism of waste effluent. The treated waste is then collected for disposal by Rwanda Septic Services which is a public private partnership to ensure hygienic environment. However, EWSA reported that the government is in the process of putting a sewerage system in place through collaboration and partnerships.

1.2.8 Liquid Waste Treatment

The Members were taken through the process of treatment of liquid waste. This process includes purification of the waste as well as recycling of the waste to extract water for re-use. The sludge remains are used for manure in the farms by the resident communities.

RURA has developed regulations that demand that no person shall discharge or deposit or cause or permit the discharge or deposit of matter of the kind listed

below into or in land drainage works, private branch drains or connections to any sanitary sewer or combined sewer or any of the following activities:

- Sewage that may cause an offensive odour to emanate from a sewage works, sewage containing hydrogen sulphide, carbon disulphide, other reduced sulphur compounds, amines or ammonia in such quantity that may cause an offensive odour.
- Water other than storm water that has originated from a source separate from the water distribution system of the municipality.
- Sewage or uncontaminated water at a temperature greater than 65 degrees Celsius.
- Sewage containing dyes or colouring materials which pass through sewage works and discolour the sewage works effluent.
- The following materials or sewage containing any of the following in any amount : Fuels, Ignitable Waste, Pesticides

The estates have a common liquid waste treatment in conformity to the foregoing directive.

Illustration of 2012/13 direct sales of water

Description	
Water Supplied in M ³	37,452,133M ³
Technical I Loss	18%
Commercial Loss	20.4%
Unbilled authorized consumption	1.6%
Total Losses	40%
Percentage sales	60%
Quantity Sold (M ³)	22,315,856 M ³
Sales Rwf	12,620,130,418 Frws

1.2.9 Priority programmes, Key Challenges and strategies for addressing the challenges

a) Priority programmes for the 2014/2015 Financial Year

EWSA has an objective of increasing access to improved water and sanitation through;

1. construction of three new water treatment plants;

2. improvement of water supply in urban areas, to increase access to water and sanitation in rural areas;
3. increased water supply to Kigali City; and
4. Improved waste water management in Kigali City and elaborate sanitation master plan for all six secondary cities in the Financial Year 2014/2015.

This programme required a budget of 26.8 billion Rwandan Francs.

(b) Key Challenges

- Meeting water demand in urban, per-urban and rural areas;
- Access to drinking water for pro-poor when dealing with cost recovery aspect;
- Inability of the current water tariff to cover even the operational and maintenance costs;
- High operational costs(energy, chemical and staff);
- High level of non-revenue water;
- Lack of expertise in sanitation because of new domain of waste waters;
- Rural water management in terms of investment, tariff, staffing and social aspects

(c) Strategy for addressing the challenges

- Promotion of integrated planning and private sector involvement
- Avail subsidies for pro-poor tariff
- Review and update water to be approved and implemented
- Improve operational efficiency and best practices through energy saving, optimizing the use of chemicals and appropriate technologies and best non-revenue water management.
- Water audits to address both components of real and apparent losses
- Higher expert and capacity building
- Appropriate local-based technology, ownership by local authority, high public-private (PPP) involvement, capacity building and community participation.

It was however reported that EWSA is headed for a split into two companies. In this system, one company will deal with energy and the other, water and sanitation aspects to enable each to perform effectively according to budgetary allocation and external sourcing of funds.

CHAPTER TWO: SITE VISITS

2.1 Solid Waste Management (COPEDE)

2.1.1 Introduction

The delegation visited the COPEDE on 22nd April and met the Commercial Director who took the delegation through the solid waste management system adopted and in use in Kigali City.

2.1.2 Background

The disposal of solid waste is done in colored waste bags and containers in waste corners and sorting of waste is done on site into organic / biodegradable materials, plastic, metal, glass bottles, paper and carton and non-recoverable waste like disposable rubbish and then collected by private companies using covered trucks.

Working under their objective of achieving a clean environment and reducing the bulk of waste ending up at the land fill, the companies engage on the process of recycling the waste. The companies work under the umbrella body Company for Environment Protection and Development (COPEDE) that has been operational since 1999. They have three categories of customers organized as residential, commercial and special customers.

The amount of waste that remains after the recyclable waste has been extracted is highly reduced and is transported to Dumba land fill.

This system of operation has led into a clean well managed environment which is sustained through a system of laws and policies. Through strict enforcement and cooperation received from the people, it has become easy for the Companies through Kigali City Council to operate.

2.1.3 Monitoring and evaluation

This process is important and ensures that agreements entered with institutions and residents are followed as well as policies of the city's management. To achieve this, the City of Kigali carries out the following:

- Weekly City tour to monitor the general situation,
- Daily inspections by the City Inspectors,
- Monthly Communal work to clean up roads, pavements, water trenches, etc
- Enforcing fine payment,

- Signing performance contracts,(Youth associations)
- Establishment of Community hygiene clubs (CHBS),
- Tendering private companies and cooperatives to work on roads,
- Encouraging waste recovery and recycling activities.

2.1.4 Challenges faced

The commercial director informed the delegation that despite the elaborate system put in place, COPED still experiences challenges which include:

- Insufficient sanitation infrastructure,
- Incompetent cooperatives and companies involved in waste management,
- Professionalism,
- Behavior change of the population,
- Unplanned settlement,
- New infrastructures.

However, to mitigate against these challenges, COPED through partnerships with corporate bodies investing in Kigali, the Council has been able to share City environment and sanitation responsibilities including maintenance of sections of City for instance, roundabouts.

The Vision of City of Kigali is to be clean, green and secure. To achieve this, many stakeholders have been involved at all levels giving their participation. However, Commitment and willingness of strong leadership made all possible to achieve the current status. Because of the leadership's commitment, the hygiene is becoming part and parcel of Kigali community and its visitors.

2.2 Eco-Plastic Factory

2.2.1 Introduction

On 22nd April 2014, the delegation conducted a visit to Mageragere Eco-Plastic Factory in company of officers from the Ministry of Infrastructure and met with the Manager. The Manager took the delegation through the operation of the factory as discussed below.

2.2.2 Background information

The Eco-Plastic is a private factory whose main business is to recycle polythene materials collected with waste from customers by COPED and delivered for recycling. The used bags are washed and sorted according to color then taken to chopping machines where the bags are reduced into small pieces. From this

stage, the pieces are fed into a melting chamber and passed through cold water to solidify. The end products include colored bags that are sold to COPED for waste collection, cereal storage sacs inner lining, construction paper, health institutions utility bags among others. It is important to note that the legal ban on the use of polythene exempts some companies on license to facilitate their operations such as construction and waste collection.

2.3 Karengye Water Treatment Plant

2.3.1 Introduction

The delegation visited Karengye Water Treatment plant on 24th April 2014 accompanied by officers from the Ministry of Infrastructure. The delegation met the Managing Director of the Plant who helped the delegation understand the process of operation from water abstraction stage to consumption stage as discussed below.

2.3.2 Background

Karengye Water Treatment Plant is located in Eastern province, precisely in Karengye Sector of Rwamagana District. It is one of the 17 water treatment plants located in Rwanda. This plant is one of the oldest plants in Rwanda and is under the supervision of Energy, Water and Sanitation Authority (EWSA). Its installation started in early 80's and completed in 2008. The plant has been renewed often in order to meet the demand of the population it supplies. The capacity of production is estimated to be between 13000-14000 m³/day but the current maximum production is 15000 m³/day. Again the plant is used to supply water to different towns namely Masaka, Bicumbi, Rwamagana, Kabuga, Kicukiro and part of Gasabo. The source of water used is from Lake Mugesera.

About 550m³ of raw water that is pumped into the plant with high content of green algae originating directly from the Lake Mugesera. In the plant, the raw water with high content of algae is passed through the aeration chamber where it is also mixed with a chemical called Sudfloc that coagulates the algae to enhance settlement in the filtration tanks.

In the filtration tanks, the water is allowed time to calm and facilitate the algae to settle. Subsequently, water free of algae is collected into storage tanks from the filtration tanks through perforated plastic pipes. Meanwhile, the algae that have settled on the floor of the filtration tanks flow to open tanks (dry beds) through a valve opened after extraction of clear water. The floor of the open tanks that algae collects is covered with sand that allows water mixed with algae

to filtrate through and allowed to flow back into the lake. The remaining sludge is given to the resident communities as manure for farms.

The water collected in the tanks is then treated with Chlorine (prepared on site) then pumped to midway collection tank that is then pumped to Kigali city for consumption. The quality and safety of water pumped from the plant is checked at the mid-way collection tank and also at the collection tanks in Kigali City before distribution.

The plant serves about 85% of the demand in Kigali city and approximately 17% of the demand of the nearby rural area. Kigali City has a demand of 80000m³ but the plant supplies 60000m³ translating into a deficit of 20000m³.

The most outstanding challenge in the whole process of abstraction, treatment and pumping is the cost of energy that takes 75% of the total cost of production. This is occasioned by the hilly terrain that cannot allow flow of water through gravity therefore power is an integral function in the production process.

In addition, the non-revenue water is also a challenge that the authority is trying to bring to acceptable standards. A combination of both commercial and technical loss aggregate to approximately 38%.

Color, temperature, Ph, turbidity, Chlorine levels and metals are the major components that the water produced is tested before distribution.

CHAPTER THREE: LESSONS LEARNT FROM RWANDAN EXPERIENCE

Arising from the visit, the Committee learnt the following:

- 1. Accountability and information flow-** the responsibility of oversight on service delivery is undertaken by both the recipients of the services and the leadership.
- 2. High level of discipline among the people and strict law enforcement-** there is a high regard for the laws and policies in place to a level that it has become part of the people's personalities in the conduct of daily business.
- 3. Public participation-** the success of mobilization, sensitization and implementation of policies is owed to the willingness of the people to be part of the processes that are going to affect their lives.
- 4. Public-private partnerships-** this is an integral function of cost-sharing and reduction in the implementation of policies and programmes by government and non-governmental entities.
- 5. Capacity building for staff and liaison with think tanks-**the outcome is definitely better policies and maximum output by the staff. Further, through collaboration with think-tanks research informs decision making for better service delivery.
- 6. Associations and social groups-**these associations enable the government and non-governmental entities with target programmes to access the people easily. In return, such groups get quick access to government services and facilities. Such groups also contribute voluntarily to communal work on request by government.
- 7. Transparency-**the high sense of openness and integrity in the process of service delivery enhances development prudence through financial and human resources allocated for specific functions are used for the same without fraud or short changing.

CHAPTER FOUR: CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

The eight-day visit by the Members of the Committee on Water and Sanitation from Nairobi City County Assembly to the Republic of Rwanda was a resounding success.

The delegation witnessed firsthand workings of various institutions and concerted effort towards water and environmental order. The rise of the Republic of Rwanda from the damages of the genocide to the current development status is manifest of a common resolve of both the leadership and the citizenry to rebuild the country into a model to be emulated.

Indeed, Nairobi City County and Kenya can certainly draw from the Rwandan experience for best practices in the field of water and sanitation. Rwanda is a good example that through sound planning, policy implementation and follow-up mechanisms, a country can alter its fortunes dramatically.

Nairobi City County needs to adopt sound laws and enforcement mechanism in line with formulated policies in the water and sanitation sector for the sector is key to the development of other sectors among others, tourism, economy and industrial development.

4.2 Recommendations

Following the visit, the Committee urges this Assembly to resolve as follows:-
That,

1. Nairobi Water and Sewerage Company to establish on-site Chlorine production. This will reduce the cost of production in the long term and danger associated with handling the Chemical while in transit.
2. Nairobi City County Government to enact sound laws and long-term policies with strict enforcement mechanisms on solid waste management and environmental management including a City Greening Policy.
3. Nairobi City County Government to consider scaling up public-private partnerships and enhance inter-Governmental and inter-agency relationships for better, effective and efficient service delivery in the water and sanitation sector.
4. To enhance public infrastructure security, easy behavior change, mobilization and sensitization, Nairobi City County to formulate sound public participation and involvement and information flow policy.
5. The Nairobi City County Government to invest in staff capacity building including trainings and academic advancement and partnering with think-tanks through research to enhance the quality of institutional output in form of policies and programmes.
6. The Nairobi City County Government to ensure clearly cut out mandate for institutions serving in the Water and Sanitation Sector, for instance, Nairobi Water and Sewerage Company and Athi Water Services in the spirit of devolved functions. This will have an eventual output of quick service delivery and non-duplication of projects within the County.
7. Nairobi County Government to invest in solid and liquid waste recycling technologies and check the use of polythene materials that form a greater part of the waste collected in the county daily.
8. Nairobi County to seek technical support from Rwanda within the Water and Sanitation sector in areas that Rwanda has excelled and form a bilateral relationship to strengthen sectoral development in the two systems.
9. Nairobi City County Government to integrate community service into its programmes. This will not only cut on the cost of programme implementation,

but also inculcate responsibility and project ownership on the side of the city residents.

10. The County Government to emphasize the aspect of accountability and oversight across the spectrum of leadership and electorate. It is against development when the role of watchdog (oversight) is deemed to be for the elected leaders only. When the recipients of the Government services are on the watch over the quality and timeliness of the service combined with effective information flow mechanism, it not only causes better services but also imbibes a sense of responsibility on the providers.

APPENDIX

Appendix 3 Presentations of Rwanda