REPUBLIC OF RWANDA

Rwanda Environment Management Authority (REMA)

NATIONAL IMPLEMENTATION PLAN FOR THE BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL 2014 – 2021

Final Report

SUBMITTED BY IMANZI LTD

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ACRONYMS AND ABBREVIATIONS

BAD	Banque Africaine de Development
BC	Basel Convention
BMC	Biomedical Center
CAMERWA	Consumables and Equipment Central Procurement Agency
CFC	chlorofluorocarbon
CFL	Compact Fluorescent Lamps
CHUB	Centre Hospitalier Universitaire de Butare
CHUK	Centre Hospitalier Universitaire de Kigali
CID	Criminal Investigation Department
CO_2	Carbon dioxide
COP	Conference of Parties
CUR	Catholic University of Save
DDPs	District Development Plans
EDPRS	Economic Development and Poverty Reduction Strategy
EE	Electronic Equipment
EEE	Electrical Electronic Equipment
EICV	Enquête Intégrale sur les Conditions de Vie des ménages
ESM	environmentally sound management
EU	European Union
EWSA	Energy and Water Sanitation Authority
FONERWA	National Fund for Environment and Climate Change
GDP	Gross domestic product
GHG	Greenhouse Gas
GWP	Global Warming Potential
HCW	Health-Care Waste
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
ICT	Information and Communication Technologies
IFSC	International Forum on Security of Chemicals
INATEK	Institute of Agriculture, Technology and Education of Kibungo
INES	Institute of Applied Sciences
IP	Implementation Plan
IRST	Institute of Scientific and Technological Research
LCDs	Liquid crystal displays
LG	Local Government
MDGs	Millennium Development Goals
MINADEF	Ministry of Defence
MINAFFET	Ministry of Foreign Affairs and Cooperation
MINAGRI	Ministry of Agriculture and Animal Resources
MINALOC	Ministry of Local Government
MINEAC	Ministry of East African Community
MINECOFIN	Ministry of Finance and Economic Planning

MINEDUC	Ministry of Education
MINIJUST	Ministry of Justice
MININFRA	Ministry of Infrastructure
MINIRENA	Ministry of Natural Resources
MINITERE	Ministry of Lands and natural Resources
MOH	Ministry of Health
MoU	Memorandum of Understanding
NAEB	National Agriculture Export Board
NGOs	Non-Governmental Organizations
NIP	National Implementation Plan
NPD	New Partnership for Development
PSF	Private Sector Federation
RBC	Rwanda Biomedical Center
RDB	Rwanda Development Board
REG	Rwanda Energy Group
REMA	Rwandan Environmental Management Authority
REP	Road Environment Protection
RHA	Rwanda Housing Authority
RNP	Rwanda National Police
RPU	Revenue Protection Unit
RRA	Rwanda Revenue Authority
RSB	Rwanda Standards Board
SMART	Specific, measurable, achievable, realistic and time framed
TV	Television
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UR	University of Rwanda
WASAC	Water and Sanitation Corporation
WSH	World Standard Harmonization

GLOSSARY

"Wastes" are substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law;

"Hazardous waste" is waste that is dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges.

"Management" means the collection, transport and disposal of hazardous wastes or other wastes, including after-care of disposal sites;

"Transboundary movement" means any movement of hazardous wastes or other wastes from an area under the national jurisdiction of one State to or through an area under the national jurisdiction of another State or to or through an area not under the national jurisdiction of any State, provided at least two States are involved in the movement;

"Disposal" means any operation specified in Annex IV to this Convention;

"Focal point" means the entity of a Party referred to in Article 5 responsible for receiving and submitting information as provided for in Articles 13 and 16;

"Environmentally sound management of hazardous wastes or other wastes" means taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes;

"State of export" means a Party from which a transboundary movement of hazardous wastes or other wastes is planned to be initiated or is initiated;

"State of import" means a Party to which a transboundary movement of hazardous wastes or other wastes is planned or takes place for the purpose of disposal therein or for the purpose of loading prior to disposal in an area not under the national jurisdiction of any State; 12

"State of transit" means any State, other than the State of export or import, through which a movement of hazardous wastes or other wastes is planned or takes place;

"Exporter" means any person under the jurisdiction of the State of export who arranges for hazardous wastes or other wastes to be exported; 16. "Importer" means any person under the jurisdiction of the State of import who arranges for hazardous wastes or other wastes to be imported;

"Generator" means any person whose activity produces hazardous wastes or other wastes or, if that person is not known, the person who is in possession and/or control of those wastes;

"Illegal traffic" means any transboundary movement of hazardous wastes or other wastes as specified in Article 9

EXECUTIVE SUMMARY

The Republic of Rwanda as many other countries is signatory of the Basel Convention on the control of transboundary movement of hazardous wastes and their disposal. This is allowing the country to work in liaison with the International Community to tackle problems arising from the transboundary movement of hazardous wastes and their disposal. It is in this regards that the Government of Rwanda has initiated through the Rwanda Environmental Management Authority (REMA) the process of developing the National Implementation Plan (NIP) of the convention in order to address issues related to Transboundary movements of hazardous wastes and their disposal within the country.

As the country is quickly developing, concerns related to transboundary movement of hazardous wastes and their disposal never ceased. Also, the issue related to the management of wastes and their movement is increasing. Therefore, existence or establishment of collection and recycling strategies will be addressing issues resulting into the accumulation of all kinds of hazardous wastes in the environment. In order to meet its obligations to the convention, Rwanda initiated the development of the national implementation plan of the Basel Convention constituting a complementary expression of Rwanda's willingness to adhere to the process of sustainable development within the framework of Vision 2020 and EDPRS 2. Rwanda also put in place the Organic Law N° 04/2005 of 08/04/2005 determining the modalities of protection conservation and promotion of environment in Rwanda and established the Rwanda Environment Management Authority (REMA) and ratified relevant International Conventions.

This NIP was developed in three different phases. Phase one of stocktaking consisted in the identification of major stakeholders, current practices in wastes management, sites visits to gather all relevant and necessary information in regards to wastes generation and recycling where applicable. In phase 2, the development of the NIP was conducted based on data collected in phase one. In this phase, a National Implementation Plan was developed linking each stakeholders and their stake, key national institutions involved in waste management were identified and their role were defined. This Rwanda NIP was guided by the Basel Convention strategic framework. In phase 3, three project profiles were developed. They aim at addressing issues mainly related to wastes management in Rwanda. They will address issues related to the recycling of solid wastes and generating at the same time electrical power. Two additional projects were developed, one project for recycling of compact fluorescent lamps in order to control and stop the pollution of soil, water and the biota by mercury known as a carcinogenic toxic heavy metal. The second one for the use of ashes from incinerator in the construction of roads as a sustainable way for immobilizing toxic waste usually dumped in concrete pits.

CHAPTER I: INTRODUCTION

1.1. Background

Rwanda is a landlocked country situated in central Africa precisely in East Africa, just south of the Equator bordering Tanzania on east; Uganda on the north; Burundi on the south; and the Democratic Republic of Congo on the west, with a total area of 26,338 km^2, composed of 24,216 km^2 of land area and 2,122 km^2 of water and swamps.

Also known as 'the land of a thousand hills', Rwanda has five volcanoes and twenty-three lakes. The main lakes are Lake Kivu, Lake Muhazi, Lake Ihema, Lake Bulera, Lake Ruhondo, and Lake Mugesera. The country hills accommodate numerous rivers, some forming the source of the River Nile. The main rivers of the country are Akagera, Nyabarongo and Akanyaru Rivers. These rivers are fed by the rain fall with the average of 110-200 mm. per month. While the temperature of the country ranges between 24.6 - 27.6^{o}c, the hottest months are August and September.

Administratively, Rwanda is currently divided into provinces namely: the Southern Province, the Northern Province, the Western Province, the Eastern Province, and the Kigali City, the capital of Rwanda. The major urban centres are Kigali City, Rubavu, Muhanga, Huye, Kamembe, Karongi, Rwamagana, Musanze, Nyamagabe, Nyanza, Ruhango whereby most of the commercial activities, administrative and other activities are concentrated mainly due to the available infrastructure for various services.

The environmental protection and promotion are among the priorities that the country set and they are considered at national, regional and international levels. The objectives of the commitment are to protect both country resources and human health.

One of the threats of the environmental and the human health in particular which is a worldwide concern is hazardous waste particularly their trade from one country to another. This threat has been on international agenda since 1980s when it was included as one of three priority areas in the United Nations Environment Programme (UNEP) first Montevideo Programme on Environmental Law in 1981. In fact, in the late 1980s, a tightening of environmental regulations in industrialized countries led to a dramatic rise in the cost of hazardous waste disposal. Searching for cheapest ways to get rid of the wastes, "toxic traders" began shipping hazardous waste to developing countries and to Eastern Europe. When this was revealed, international outrage led to the drafting and adoption of the Basel Convention on the Control of Trans-boundary movements of Hazardous Wastes and their Disposal on 22 March 1989 by the 116 States participating in the Conference of Plenipotentiaries on the Global Convention on the Control of Trans-boundary Movements of Hazardous Wastes, which was convened by the Executive Director of the United Nations Environment Programme (UNEP) and held in Basel

at the invitation of the Government of Switzerland. The Basel Convention entered into force on 5 May 1992. Presently, the Parties to the Convention are 181 countries. To join the hands with other members of the Basel convention, Rwanda ratified the convention by the Presidential Order n° 29/01 of 24 August 2003. This convention was added to other international protocols and conventions that the country is already a member of:

- Rio de Janeiro on 5 June 1992 by as approved by the Presidential Order n° 17/01 of 18 July 2002;
- The United Nations Convention on Climate Change signed in Rio de Janeiro on 5 June 1992 and ratified and approved by the Presidential Order n° 021/01 of 30 May 1995;
- The Stockholm Convention on Persistent Organic Pollutants signed in Stockholm on 22 May 2001 and ratified and approved by the Presidential Order n° 78/01 of 08 July 2002;
- The Rotterdam Convention on the establishment of international procedures agreed by states on commerce transactions of agricultural pesticides and other poisonous products, signed in Rotterdam on 11 September 1998, and in New York from 12 November 1998 to 10 September 1999 and ratified by the Presidential Order n° 28/01 of 24 August 2003;
- The Vienna Convention on the protection of Ozone Layer, signed in Vienna (1985) and the four protocols on substances that deplete the ozone layer signed in Montreal (1987), London (1990), Copenhagen (1992), Beijing (1999), specifically in article 2 of the London amendment and article 3 of Copenhagen, Montreal and Beijing amendments approved by the Presidential Order n° 30/01 of 24 August 2003;
- The Cartagena Protocol on Biosafety to the Convention of Biological Biodiversity opened to signature in Nairobi from 15 to 26 May 2000 and in New York on 04 June 2001 and ratified by Rwanda and approved by the Presidential Order of 38/2003;
- The Kyoto Protocol on the Framework Convention on Climate Change adopted in Kyoto on 6 March 1998 and ratified by Rwanda and approved by the Presidential Order n° 51/01 of 31 December 2007

The Basel Convention aims at protecting human health and the environment against the adverse effects resulting from the generation, management, trans-boundary movements and disposal of hazardous and other wastes.

The principles set out below are not listed in order of importance. They can be applied proactively in response to emerging issues provided that compliance with the provisions of the Basel Convention is ensured. The following guiding principles will be applied:

a) Recognize the waste management hierarchy (prevention, minimization, reuse, recycling, other recovery including energy recovery, and final disposal) and, in so doing, encourage treatment options that deliver the best overall environmental outcome, taking into account life-cycle thinking;

b) Use waste management policy tools, such as: (i) Sustainable use of resources; (ii)Recognition of wastes as a resource, where appropriate; (iii) Integrated waste

management; (iv) Life-cycle approach; (v) Polluter-pays principle; (vi) Extended producer responsibility; (vii) Precautionary principle; (viii) Proximity principle; (ix) Partnerships, cooperation and synergies; (x) Sustainable consumption and production;

c) Respect legislation governing waste management, including the principle of ensuring that every party has national legislation and regulations in place, in addition to enforcement mechanisms, to control transboundary movements of hazardous and other wastes and to prevent and combat illegal traffic;

Respect each party's national legislation and regulations regarding the control of the transboundary movements of hazardous and other wastes.

1.2. Objectives of this work

The objectives of this work is the development of the Rwanda National Implementation Plan for the Basel Convention 2014 – 2021 based on national priorities and the strategic framework for the implementation of the Basel Convention for 2012–2021.

1.3. Why National Implementation Plan (NIP)

Throughout our daily lives, we perform a variety of tasks that generate waste as a product. This may be opening a frozen package of corn or replacing batteries in the television remote control. As environmentally conscious, we need to understand that the more waste created, the most waste must be managed accordingly. Waste management in Rwanda faces numerous challenges. The National Implementation Plan for waste management would serve to addressing some of the wastes related challenges within a well concise timeframe.
The main challenges are the following:

- A growing population and economy, which means increased volumes of waste generated. This puts pressure on waste management facilities, which are already in short supply,
- Increased complexity of waste streams because of urbanization and industrialization. The complexity of the waste stream directly affects the complexity of its management, which is compounded by the mixing of hazardous wastes with general waste,
- Limited understanding of the main waste flows and national waste balance because the submission of waste data is not envisaged,
- A policy and regulatory environment that does not actively promote the waste management hierarchy. This has limited the economic potential of the waste management sector, which should have a considerable positive impact. Both waste collection and the recycling industry should make meaningful contributions to job creation and GDP, and they can expand further,
- Absence of recycling infrastructure which should enable separation of waste at source and diversion of waste streams to material recovery and buy back facilities,

- Waste management suffers from a pervasive under-pricing, which means that the costs of waste management are not fully appreciated by consumers and industry, and waste disposal is preferred over other options,
- Too few adequate, compliant landfills and hazardous waste management facilities, which hinders the safe disposal of all waste streams.

The objective of the National Implementation Plan structured around the steps in the waste management hierarchy, is the overall approach that informs national waste management. The waste management hierarchy consists of options for waste management during the lifecycle of waste, arranged in descending order of priority: waste avoidance and reduction, re-use and recycling, recovery, and treatment and disposal as the last resort.

The National Implementation Plan is structured around a framework of many goals, which are, not limited to:

(1) Promote waste minimization, re-use, recycling and recovery,
(2) Ensure the effective and efficient delivery of waste services,
(3) Increase the contribution of the waste sector to the green economy,
(4) Ensure that people are aware of the impact of waste on their health, well-being and the environment,
(5) Achieve integrated waste management planning,
(6) Ensure sound budgeting and financial management for waste services,
(7) Provide measures to remediate contaminated land, and
(8) Establish effective compliance with the National Implementation Plan.

CHAPTER II: METHODOLOGY

To respond to the above objectives, different methodological approaches were used depending on each objective. Three different phases were conducted in the following order: a stocktaking phase during which data were collected on field, followed by the development of the strategy; during this phase data collected in phase 1 were treated and the national implementation plan was initiated. The NIP was followed by the development of three projects profiles aimed at addressing critical issues identified in phase one.

2.1. Stocktaking phase

2.1.1. Identification of all stakeholders and their roles in the waste management in Rwanda

The identification and analysis of stakeholders was an important step as it allowed the team to draw out the opportunities and relationships that can be built on during the implementation of the Basel convention for hazardous wastes management in Rwanda. Their analysis also helped to identify who, where and when each group (stakeholders) intervenes. Stakeholder identification was carried out in the following 2 steps:

Step 1: Listing various types of wastes found in Rwanda including the hazardous

Step 2: Identifying potential institutions and actors that have a stake on each of listed type of wastes

This identification answered the following questions:

- Who generates hazardous wastes and where the wastes are generated?
- Who is affected by the mismanagements of wastes?
- Who has rights and responsibilities over the entry, use, disposal of the products, materials or equipment?

2.1.2. Review of relevant documentation and literature related to waste management

A desk review of the available reports and documents on waste management was carried out to assess the status of the wastes management in Rwanda.

The information expected to come from these reports includes: the types of wastes generated in Rwanda and how they are managed, the involved stakeholders and their roles and the trend of wastes generation in Rwanda.

2.1.3. Assessment of legal, policy and institutional framework of waste management and possible solution on gaps identifies

Assessment of keys policies and laws affecting the hazardous wastes management was carried out taking into consideration the goals and objectives of Basel Convention for hazardous wastes management and its Strategic framework for 2014 – 2021. Critical review of these policies and regulations led to the identification of main bottlenecks in hazardous wastes management in Rwanda. The highlighted bottlenecks helped in formulating recommendations for improved wastes management but also making a baseline to formulate the institutional framework for hazardous waste management. The analysis of strategies, policy and laws towards the implementation of Basel convention for hazardous wastes management in Rwanda was complemented by the consultation of key stakeholders (see the list of visited institution in table 1)

2.2. Development of the Strategy phase

The output from the previous phase was used to setup a corner stone for the second National strategy with SMART goals, objectives and specific targets for Rwanda. Its formulation took into consideration the other environmental targets and strategies such as the target stipulated in EDPRS II, Rwanda 2020 vision, current policies and other conventions and protocol signed by the country

2.3. Development of three projects profile

Three projects profiles were developed in order to facilitate the implementation of the Basel Convention. All of them clearly indicate their justification, objectives, expected results, beneficiaries etc. (See Appendix 2).

CHAPTER III: SITUATION ANALYSIS

Rwanda like many other developing countries is characterized by a rapid increase of trade both internally and externally. This leads to the generation of hazardous wastes in general, which in turn require special care to avoid the spreading of pollution in the environment. The situation analysis was conducted in order to evaluate the status of hazardous wastes generation and their current management practices in Rwanda. This was mainly done by selecting some institutions and industries playing a major role in hazardous wastes generation and management within the country.

3.1. Stakeholders and their roles in the waste management in Rwanda

Potential stakeholders were identified based on their sector of activities and kind of wastes they generate. The potential stakeholders and their roles are summarized in the following table 1:

Table 1: Stakeholders and their roles in waste management in Rwanda

Stake holders	Their role
1. MININFRA	Establishment of adequate infrastructures for hazardous waste management, Collaboration between MININFRA as a ministry in charge of infrastructure and REMA, working framework, strategies for waste management, challenges,
2. MINAGRI & RAB	Establishment of appropriate waste management strategies for fertilizers and pesticides, Collaboration with MINALOC, MOH and REMA, working framework, , challenges,
3. MINALOC	Establishment of policies at municipalities levels related with hazardous waste management, Collaboration with LGOs and REMA in regards with hazardous waste management, working framework, , challenges,
4. MINIRENA	Establishment of policies for hazardous waste management, Collaboration with all ministries, working Framework, Strategies for waste management, challenges, monitoring,
5. MINEDUC	Establishment of appropriate educational material for hazardous waste management, collaboration with all other ministries and PSF for educational purporses
6. MOH	Establishment of appropriate policies for drugs and pharmaceutical products hazardous waste management, working Framework, challenges,
7. All other remaining ministries	Establishment of specific and appropriate hazardous waste management policies related to each sector, working Framework, challenges
8. Kigali City	Collaboration of Kigali City with waste management companies and REMA, waste management activities specific to Kigali City, Framework, Strategies for waste management, challenges, Nduba dumping site management

9. Provinces and Districts	Framework, Strategies for waste management, challenges, Recommendation for waste management
10. MAGERWA, RRA, RURA, MINICOM and RSB	As an entrance site for all external chemical products, how chemical products are inventoried at their level, entrance step of all chemicals plus check list. To look at the collaboration between MINICOM in charge of commerce economic development with MAGERWA, RRA and RSB for standardization.
11. CHUK, CHUB, King FAISAL, Districts hospitals	Framework, strategies for waste management, treatment and management of different waste (e.g. medical materials, drugs, human dead bodies and organs), challenges,
12. Medical health center	Kind of chemicals used, framework, strategies for waste management, challenges, recommendation for waste management
13. Local Authorities (around Nduba landfill)	Frequent waste recurring more than others, perceptions regarding the consequences on local population's health, recommendations and needs
14. REG & WASAC	Framework, strategies, waste management from water and electricity's chemicals products, challenges, recommendation
15. UR College of Science and Technology, College of Medecine and Pharmacy and College of Agriculture	Kind of chemicals used, framework, strategies for waste management from laboratory chemicals, challenges, recommendation for waste management
16. KIPHARMA, BUFMAR, LABOPHAR	Kind of drugs and chemicals used, framework, strategies for waste management from different pharmaceutical products etc, challenges, recommendation for waste management
17. Printing Companies	Framework, Strategies for waste management, challenges, Recommendation for waste management
18. PSF	Industrial policy initiatives, Kind of waste generated, Framework, Strategies for waste management, challenges, Recommendation for waste management

3.2. Situation analysis on the status of hazardous waste and waste management in Rwanda

Table 2: Wastes covered by Basel convention and present in Rwanda with their respective major generators

Wastes code	*Type of waste*	*Generators*
Y1	Clinical wastes from medical care in hospitals, medical centers and clinics	Hospitals(CHUB, King Faisal Hospital, Kanombe Military Hospital, Kabgayi Hospital etc.), Health centers and clinics, MOH
Y2	Wastes from the production and preparation of pharmaceutical products	KIPHARMA, LABOPHAR
Y3	Waste pharmaceuticals, drugs and medicines	HOSPITALS, CAMERWA, PHARMACEUTICAL WHAREHOUSES, RETAIL PHARMACIES
Y4	Wastes from the production, formulation and use of biocides and phytopharmaceuticals	MAGERWA, MINAGRI, RAB, RETAIL BIOCIDES PHARMACIES, RSB
Y5	Wastes from the manufacture, formulation and use of wood preserving chemicals	Trust industry, GAKINJIRO, AMEKI, SADOLIN
Y6	Wastes from the production, formulation and use of organic solvents	Higher learning institutions(UR, ICK, INES, CUR), RSB, Some industries such as SULFO, AMEKI, SADOLIN,
Y7	Wastes from heat treatment and tempering operations containing cyanides	RWANDA Steel Industry, CIMERWA, Kigali Cement Industry
Y9	Waste oils/water, hydrocarbons/water mixtures, emulsions	GARAGES, AMEKI, SULFO, NYIRANGARAMA, INYANGE
Y10	Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)	REG & WASAC
Y11	Waste tarry residues arising from refining, distillation and any pyrolytic treatment	JIN
Y12	Wastes from production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish	UTEXRWA, Printing companies, UMUTARA enterprise, AMEKI, SADOLIN
Y13	Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives	Printing companies, AMEKI, SONATUBE, MIRONKO Plastic
Y14	Waste chemical substances arising from research and development or teaching activities which are not identified and/or are new and whose effects on man and/or the environment are not known	Higher learning institutions, RSB, secondary schools, some industries, KIPHARMA, DUPHAR, AFRISHEM, NILDA,BMC(Biomedical center Ltd)

Wastes code	*Type of waste*	*Generators*
Y15	Wastes of an explosive nature not subject to other legislation	Mining companies, MINADEF, POLICE, Security agencies
Y16	Wastes from production, formulation and use of photographic chemicals and processing materials	Hospitals(King Faisal, CHUK, CHUB etc) , printing companies, photo Studios
Y17	Wastes resulting from surface treatment of metals and plastics	MANUMETAL, GARAGES, TOLIRWA, PETROCOM, UPROTUR, SAFINTRA, MIRONKO
Y18	Residues arising from industrial waste disposal operations	UTEXRWA, RWANDA Steel industry, All industries, landfill
e-waste	Electrical and Electronic equipment(EEE)	Importers, MINISTRIES, MAGERWA, Household, Higher Institutions (UR-colleges, ICK, INES INATEK, Mount Kenya), COOPED, REMA, Informal recyclers, Schools etc ….
Y19-Y45	Metal and their compounds(see the list in appendix)	UR-colleges, RSB, REG & WASAC, RNP, NAEB, Hospitals, Mount Kenya, ICK, CUR, INES and other higher learning institutions

3.2.1. E-Wastes management in Rwanda

E-waste is a term used to cover almost all types of electrical and electronic equipment (EEE) that has or could enter the waste stream. Although e-waste is a general term, it can be considered to cover TV sets, computers, mobile phones, white goods (e.g. fridges, washing machines, dryers etc.), home entertainment and stereo systems, toys, toasters, kettles – almost any household or business item with circuitry or electrical components with power or battery supply.

E-waste is growing exponentially simply because the markets for which these products are produced are also growing rapidly as many parts of the world cross over to the other side of the 'Digital Divide. Rapid product innovations and replacement, especially in ICT and office equipment, combined with the migration from analogue to digital technologies and to flat-screen TV sets and monitors, for example, are fuelling the increase. Additionally, economies of scale have given way to lower prices for many electrical goods, which has increased global demand for many products that eventually end up as e-waste.

Electronic waste isn't just waste. It contains some very toxic substances, such as mercury, lead, cadmium, arsenic, beryllium and brominated flame retardants. When the latter are burned at low temperatures, they create additional toxins, such as halogenated dioxins and furans; some of the most toxic substances known to humankind. The toxic materials in electronics can cause cancer, reproductive disorders, endocrine disruption, and many other health problems if this waste stream is not properly managed. Many of the toxic constituents are elements, which never disappear, even though they may change form. Other toxic chemicals in electronics do not break down over time, instead accumulating in the food chain and biosphere. Not only do these toxins present risks to communities and the global ecosystem, but also to electronics recycling workers around the world.

- **Trend of EEE in Rwanda**

Information and Communication Technologies (ICT) in Rwanda has been given a higher priority and considered as one of the pillar that will lead to Rwanda's vision 2020.
According to Rwanda's vision 2020, the improvement in mobile phone and fibre optic networks as well as computer usage and internet access will enable both international public and private firms to enhance development in our country. The next figures are illustrating the trend of ICT equipment utilization in Rwanda.

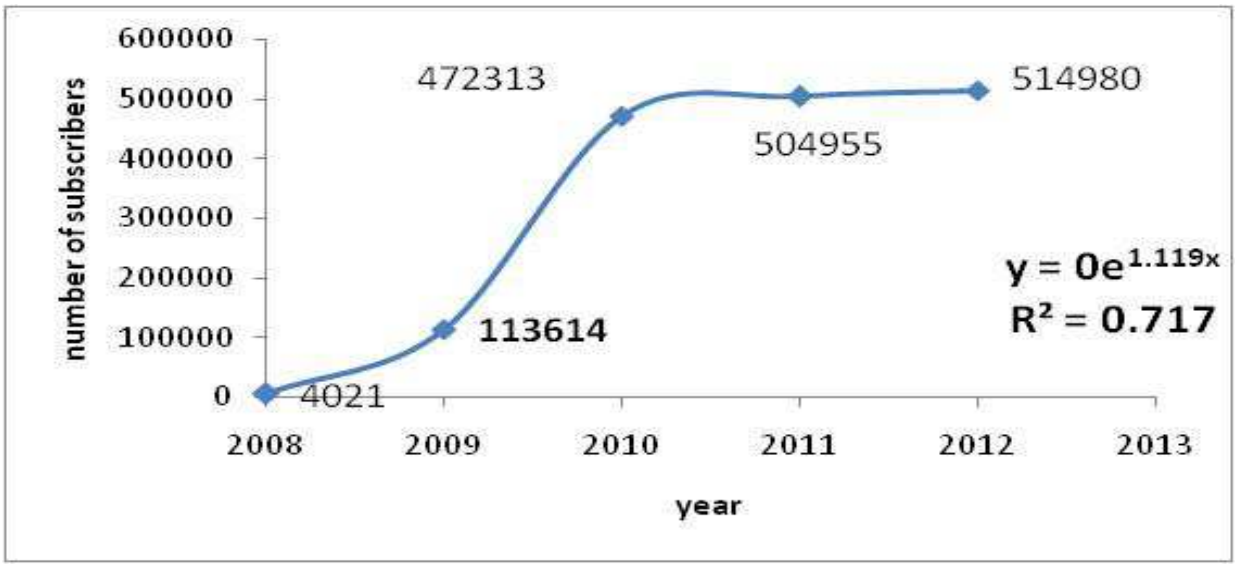


Figure 1: Trend of Number of MTN internet subscribers (source : RURA)

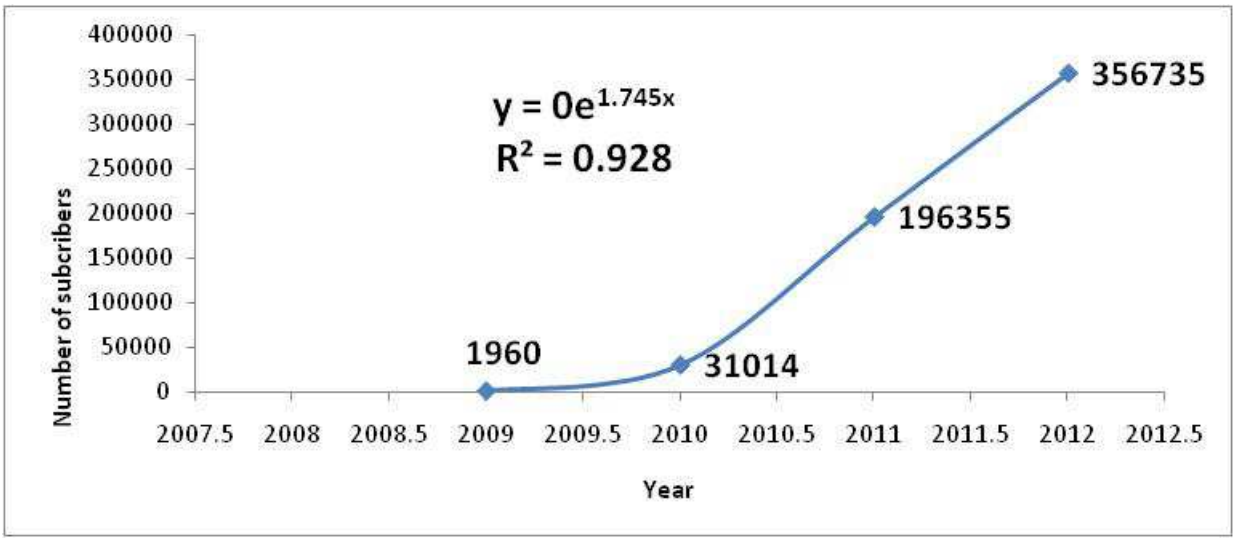


Figure 2: Trend of Number of TIGO internet subscribers (source : RURA)

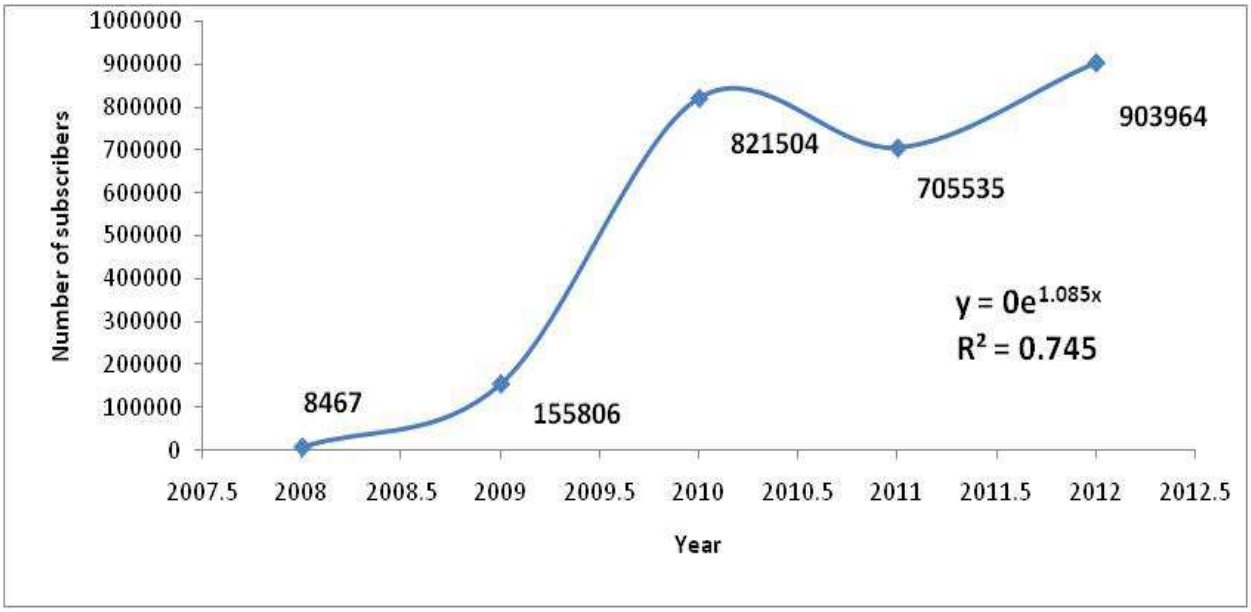


Figure 3: Trend of Total Number of internet subscribers in the country (source : RURA)

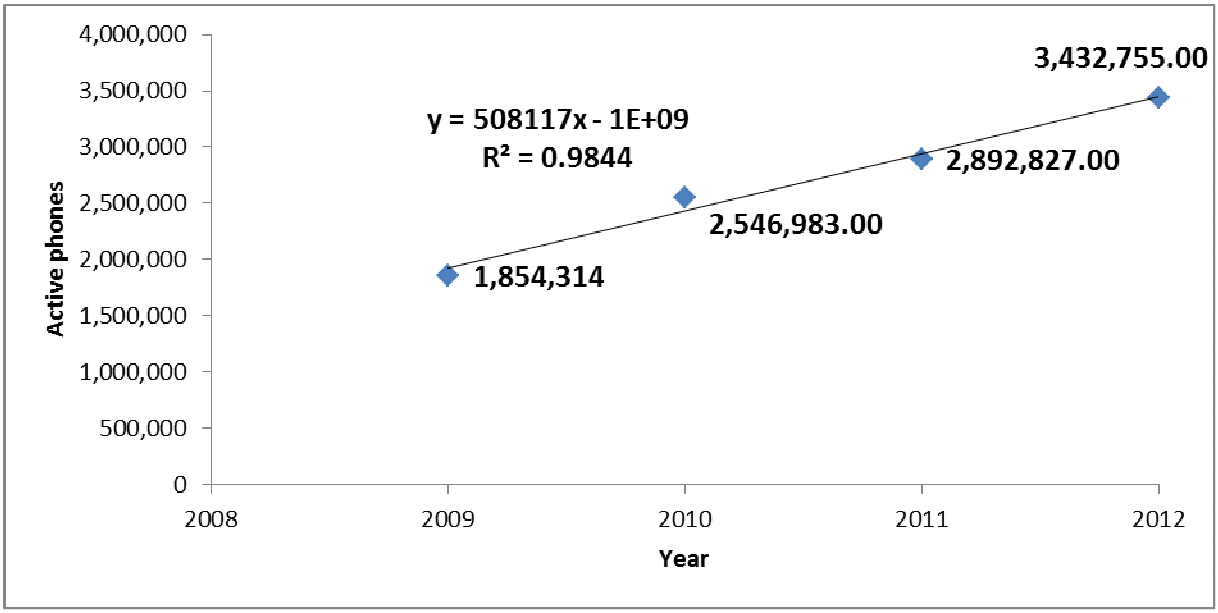


Figure 4: Trend of MTN active phone (source : RURA)

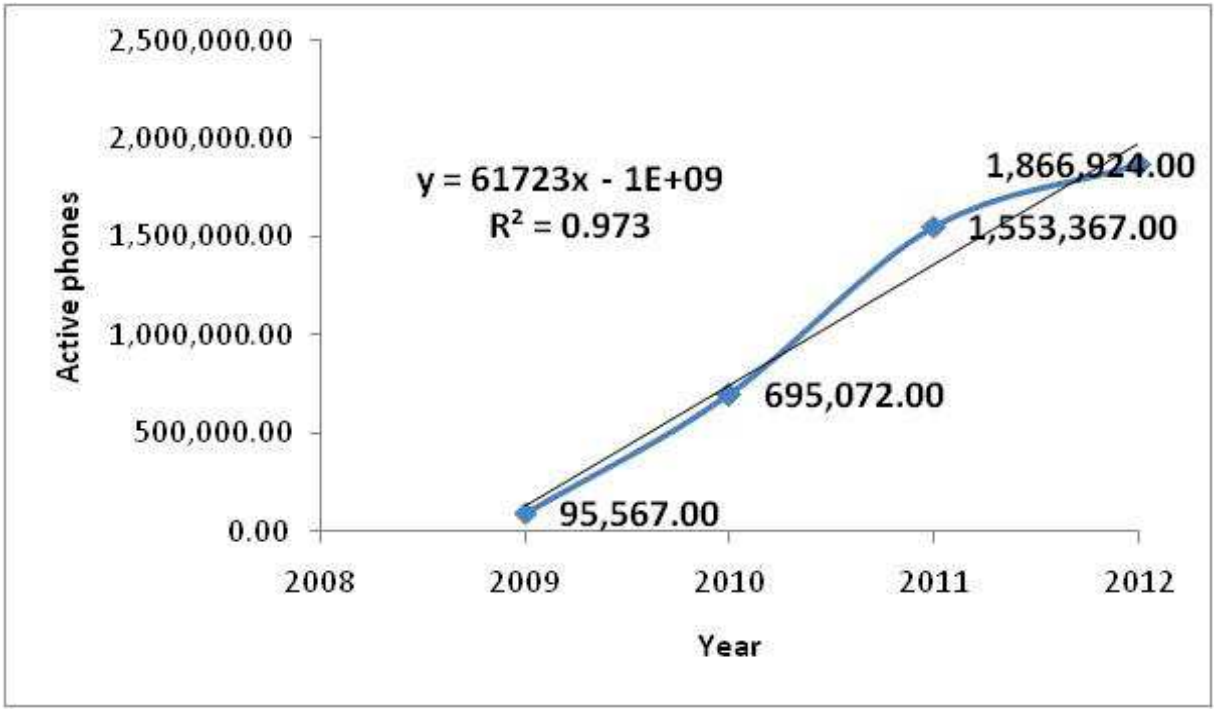


Figure 5: Trend of TIGO activer phones (source : RURA)

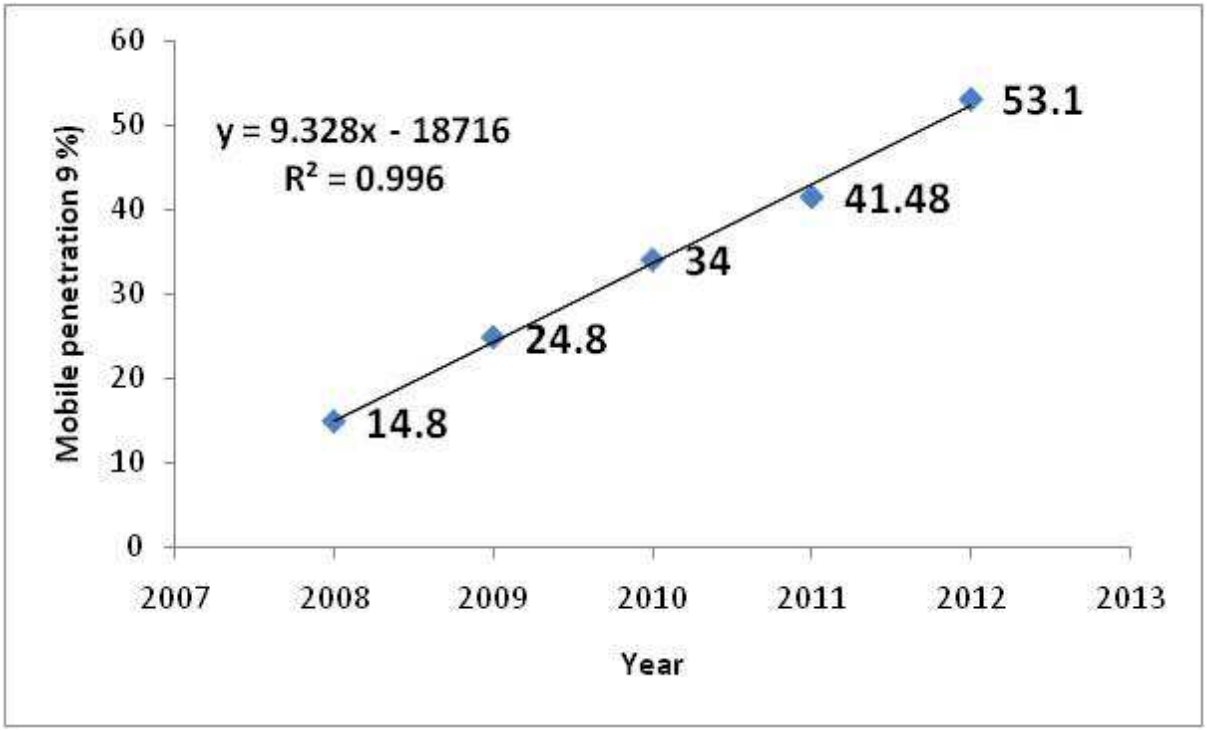


Figure 6: Trend of Mobile phone penetration (%) (source : RURA)

Figures 1-3 show the exponential increase over the past years while the figures 4-7 show the linear increase of mobile penetration as well the electricity consumption at household and industrial levels as an indication of electronic equipment utilization..

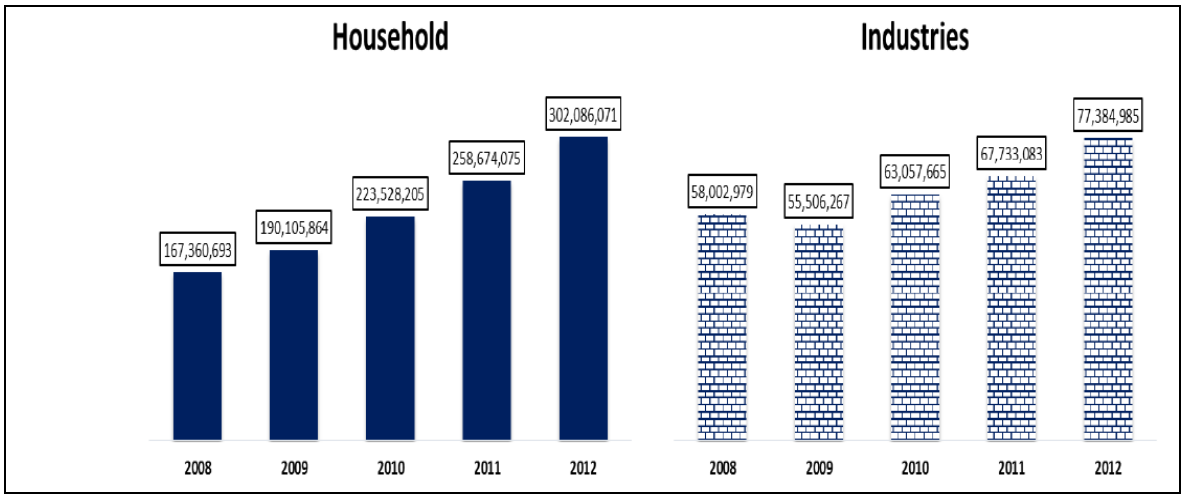


Figure 7: Trend of electricity consumption level from 2009-2012(NISR, 2013)

3.2.2. E-wastes Stakeholders overview: Mass stream of E-wastes

The key stakeholders of e-waste generation and management in Rwanda are the importers, distributors and retailers, consumers, repair workshops/technicians (refurbishers), collectors and disposal facilities. The movement of computers and other e-equipment among the various stakeholders is illustrated in figure below

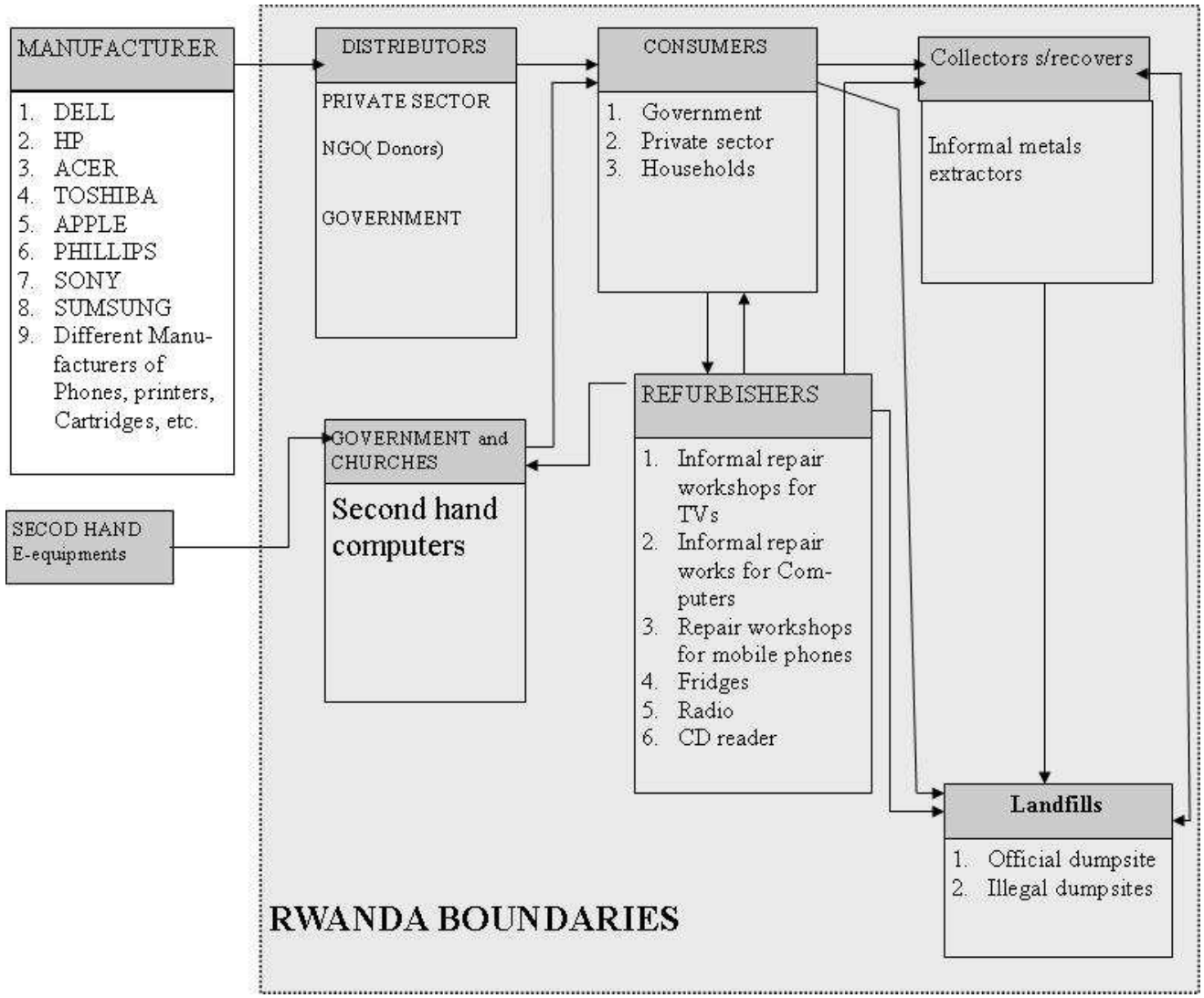


Figure 8: Mass flow of electronic equipment in Rwanda (adapted from Magashi & Schluep, 2011)

❖ Manufacturer

There are currently no manufacturers of computers in the country. All computers and other IT equipment in Rwanda are imported.

❖ Distributors

E-equipment found in Rwanda is distributed by the Government through its procurement, private operators and another good fraction of e-equipment is from different donors which are generally NGOs.

❖ Consumers

Like in other countries, the consumers of E-equipment in Rwanda can be divided into three categories: the Government, the Private sector and the Households. According to the study conducted by REMA in 2011, UN system, NGOs and the government in ICT sector are the major consumer of electrical and electronic equipment in Rwanda.

❖ Collection of E-wastes

Old EE collected from governmental institutions are stored at GIKONDO under the supervision of Rwanda Housing Authority (RHA) which will plan how to auction them. Others are still in stores of those institutions. All those e-wastes stored at GIKONDO are mixed with other waste including waste from office furniture (tables, chairs) (REMA, 2011). The visits to different institutions either public or private revealed that E-wastes are stored in specific stores waiting to be auctioned, the practice that end up by handing the E-wastes and old E-equipment to the refurbishers.



Figure 9: Expired lamps and computers at INES

According to COPED, sometimes the e-wastes generated at household are included in other wastes in the wastes collection sites.

❖ Refurbishers

The refurbishment system of computers in Rwanda is mainly informal. Few refurbishment initiatives also exist in formal private companies. With regard to the informal system, many computer, phone, TV and fledge workshops exist in Kigali and other main cities of the country.

The workshops buy old EE which are auctioned by the Government and private companies as well as those sold by individuals and then repair and sell the repairable computers and other repairable EE.

In addition, normal repair works of computers in various consumers is done at the site of consumers using technicians who are either employees of the distributors/retailers or freelance technicians. Some of the distributors/ retailers provide technical support to their customers including repair works and most of the consumers interviewed prefer to have their computers repaired at their own premises.

❖ Concerns for Mobile penetration and Lamps

Rwanda as the country that is committed to drive its economy using ICT, is facilitating the entry of ICT equipment including the mobile phones. When MTN started to operate in Rwanda, phones were very expensive and were only found in main towns of the country and at few places in rural areas.

Currently new phones are sold in all corners of the country and at affordable prices and one can exaggerate and say that each Rwandan can own a mobile phone. However many of those mobile phones sold at lower prices have short shelf life which is increasing the number of e-wastes from mobile phones.

This is also similar to the lamps that are being sold in different hardware shops in the country. Many of them have a short lifespan. If at least the expired were collected in particular places, the concern should be reduced. The end of expired lamps from different households and some of the institutions seem to be unknown. For those two e-equipment / material special entry guidelines need to be established by MINICOM and in collaboration of some key institutions such REMA, RURA, and RSB.

3.2.3. E-waste and the Basel Convention

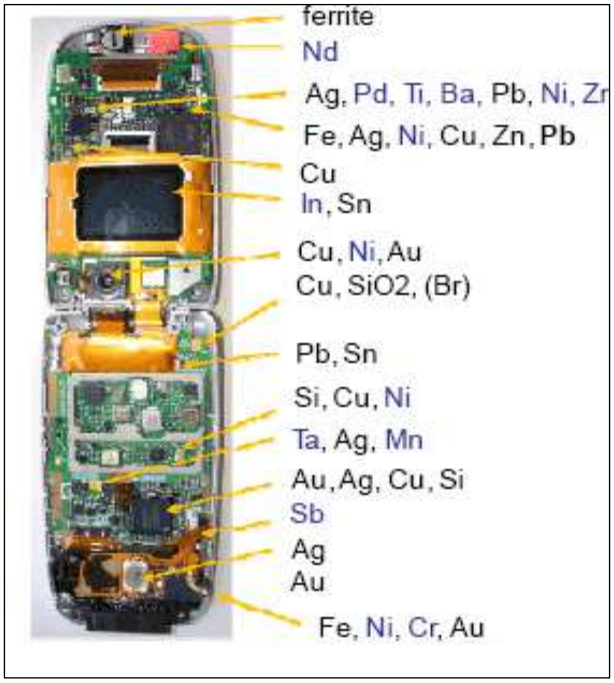


Figure 10: Metals That Could be found Mobile Phone

According to the Basel Convention, E-wastes are hazardous. The following examples are showing some paragraph of the convention where E-wastes or their components are considered within the convention.

(1) Wastes constituents as in Annex I: **Y19- Y31 many of these wastes are e-wastes,**
(2) Annex I: Y45: Equipment with organohalogen compounds e.g. CFCs,
(3) Annex VIII (hazardous wastes):

- A 1090: Ashes from incineration of insulated Cu wires
- A1010: metal wastes and waste consisting of alloys of specific metals e.g. Cd, Pb, Hg, etc.
- Wastes having as constituents or contaminants any of the following: • Arsenic; arsenic compounds • Mercury; mercury compounds • Thallium; thallium compounds
- A1150: Metal ashes from printed circuit boards
- A1170: unsorted waste batteries
- A1180: waste electrical and electronic assemblies or scrap containing components such as accumulators and other batteries included on List A (A1170), mercury switches, glass from CRTs and other activated glass and PCB-capacitors, or contaminated with Annex I constituents (e.g. Cd, Hg, Pb, PCB)A 1190: Waste metal cables
- A2010: glass waste from CRTs and other activated glasses
- Cathode ray tubes (CRTs)
- Printed circuit board assemblies

- mobile phones
- Capacitors
- Mercury switches and relays
- Batteries, accumulators
- Electron beam generator and getter
- Liquid crystal displays (LCDs)
- Cartridges from photocopying machines
- Selenium drums (photocopier)
- Electrolytes, PCBs bearing capacitors
- Insulated copper cables and wires
- Etc

3.2.4. Healthcare related wastes

Healthcare wastes definitions may vary from one country to another and at international level. The World Health Organization (WHO) and the United Nation Environmental Programme (UNEP), under the Secretary of the Basel Convention, do not apply the same definitions and characterize HCW differently. Rwanda has adopted the regional definition to standardize the terminology for the Regional Health Systems Strengthening. The definitions take into consideration:

a) the necessity to provide a precise characterization of the hazards associated with the type of HCW produced in the Regional Health Systems Strengthening and TB Support Project medical institutions and,
b) the financial and institutional capacities of these institutions to set-up an overall HCWM scheme as well as to develop an environmentally sound, affordable and safe treatment/disposal system.

In this report, the following definitions are used:

(1) **Health-Care Waste (HCW)** includes all the waste, hazardous or not, generated during medical activities. It embraces activities of diagnosis as well as preventive, curative and palliative treatments in the field of human and veterinary medicine. Therefore health-care waste is all the waste produced by a medical institution (public or private), a medical research facility or a *laboratory*;

(2) **Non-risk Health-Care Waste** comprises all the waste that has not been infected. They are similar to normal household or municipal waste and can be managed by the municipal waste services. They represent the biggest part (between 75% and 90%) of the HCW generated by a medical institution and include paper, cardboard, non-contaminated plastic or metal, cans or glass, leftover food etc. Also in this category are items such as gloves, gauze, dressings and swabs that have been used for medical care but are visually not

contaminated with blood or body fluids of the patient. This only being applicable if the patient is not confined in an isolation ward. Sanitary napkins from maternity wards, even if contaminated with blood are normally included in this category of waste;

(3) **Pathological Waste** includes all organs (including placentas), tissues as well as blood and body fluids. Following the precautionary principle stipulated by WHO, this category of waste should be considered as infectious whether it may be infected or not.

(4) **Anatomical Waste** comprises recognizable body parts. It is primarily for ethical reasons that special requirement must be placed on the management of human body parts. Hence this waste can be considered as a subcategory of Pathological Waste.

(5) **Infectious Waste** comprises all biomedical and health-care waste known or clinically assessed by a medical practitioner to have the potential of transmitting infectious agents to humans or animals. Waste of this kind is typically generated in isolation wards of hospitals; dialysis wards or centres caring for patients infected with hepatitis viruses (yellow dialysis); pathology departments, operating theatres and *laboratories*. Infectiousness is one of the hazard characteristic listed in annex II of the Basel Convention and defined under class H6.2;

(6) **Highly Infectious Waste** includes all viable biological and pathological agents artificially cultivated in significant elevated numbers. Cultures and stocks, dishes and devices used to transfer, inoculate and mix cultures of infectious agents belong to this category of waste. They are generated mainly in hospital *medical laboratories*;

(7) **Sharps** are all objects and materials that pose a potential risk of injury and infection due to their puncture or cutting properties (e.g. syringes with needles, blades, broken glass…) For this reason, sharps are considered as one of the most hazardous category of waste generated during medical activities and must be managed with the utmost care;

(8) **Pharmaceutical Waste** embraces a multitude of active ingredients and types of preparations. The spectrum ranges from teas through heavy metal containing disinfectants to highly specific medicines. This category of waste comprises expired pharmaceuticals or pharmaceuticals that are unusable for reason or another (e.g. call-back campaign). Not all the pharmaceutical wastes are hazardous. They can thus be classified into the two categories of Non-Hazardous Pharmaceutical Waste and Hazardous Pharmaceutical Waste;

(9) **Cytotoxic Pharmaceutical Waste** may be considered as a sub-group of Hazardous Pharmaceutical Waste. However, this category of waste must be specially managed and disposed of in consideration of its‟ high degree of toxicity. The potential health risks for

people who handle cytotoxic pharmaceuticals are due to the mutagenic, carcinogenic and teratogenic properties of these substances, which can be split into main groups of: alkylated substances, antimetabolites, antibiotics, plant alkaloids, hormones and others;

(10) **Radioactive Waste (not covered by the Basel Convention)** includes liquids, gas and solids contaminated with radionuclides whose ionizing radiations have genotoxic effects. The ionizing radiations of interest in medicine include X and γrays as well as and particles. An important difference between these types of radiations is that X-rays are emitted from X-ray tubes only when the generating equipment is switched on whereas γ-rays, and particles emit radiations continuously. The type of radioactive material used in HCFs results in low level radioactive waste and concerns mainly therapeutic and imaging investigation activities where Cobalt ^{60}Co, Technetium ^{99}Tc, iodine ^{131}I and iridium ^{192}Ir are most commonly used;

(11) **Special Hazardous Waste** includes gaseous, liquid and solid chemicals, waste with a high contents of heavy metals such as batteries, pressurized containers, thermometers, blood-pressure gauges, photographic fixing and developing solutions in X-ray departments, halogenated or non-halogenated solvents etc. This category of waste is not exclusive to the health-care sector. They can have toxic, corrosive, flammable, reactive, explosive, shock sensitive, cyto- or genotoxic properties;

(12) **Effluents** and more particularly, effluents from isolation wards and *medical analysis laboratories* should be considered as hazardous liquid waste that should receive specific treatment before being discharged into the sewerage/drainage system, if such a system exists.

3.2.4.1. Key stakeholders of the HCW

As illustrated in the table 2, the stakeholders are led by the Ministry of Health (MOH). Hospitals (Referral Hospitals , Districts Hospitals, Private Hospitals, Health centers and clinics, KIPHARMA, LABOPHAR, BUFMAR, RBC, PHARMACEUTICAL WHAREHOUSES, RETAIL PHARMACIES and RSB. The table below shows how the numbers of health care facilities have been changing from 2009 to 2012

Table 3: Trend of Health Care Facilities from 2009 to 2012

Year	*2009*	*2010*	*2011*	*2012*
National Referral Hospitals	4	4	4	5
District Hospitals	40	40	40	41
Police/ Military Hospital	2	2	2	2
Health Centers	428	436	442	451
Dispensaries	18	35	95	114
Prisons Dispensaries	16	18	13	16
Health Posts	34	45	60	60
Private dispensaries	-	35	95	114
Private Clinics	-	-	-	60
Grand total	**542**	**615**	**751**	**863**

(Source **NISR, 2013)**

According to this table, HCF increased considerably from 2009 to 2012.

3.2.4. 2.Wastes Management at hospital levels

- ✓ **Wastes segregation**

In public hospitals, wastes are collected by the private companies contracted for this purpose. Before they start to work, the hygiene commission of the hospital trains the company staff in the appropriate skills in hospital wastes management covering both good collection practices and dangers of each category. The company provides to the hospital the wastes bins and other required facilities namely the plastics bags, bins, gloves etc that allow them to meet the hospital obligations.

Segregation of hospitals wastes is done according to the following categories; infectious or clinical waste (hazardous waste), Non-infectious or general waste, highly infectious waste, and sharps waste. For photographic wastes, CHUK and King Faisal Hospital have moved forward as they replaced the classical way of developing film by the digital system where films are printed.

Further, WHO recommends red color for pathological and/or highly infectious wastes. The use of colour coding system is to enhance segregation practices. Careful segregation of waste into different categories helps to minimize the quantities of hazardous waste.

- ✓ **Transportation and Waste Storage**

The collected wastes are transported to the store before they are taken to the incinerator

- ✓ **Wastes disposal practices**

The wastes in red and yellow bins are gathered and finally incinerated. The recent incinerators bought by the MoH and installed at different hospitals have two rooms: the first room burns at 850^0C while the second room burns at around 1110^0C. The maximum volume that the first room can burn is around 50 kg. After the incineration ash is put in the cemented covered septic tank (See pictures below). When full, it is emptied and the ash is taken to Nduba landfill.

The MoH has so far inventoried 34 incinerators within the country in the following health facilities: Bushenge, Byumba, CHUK, Gahini, Gihundwe, Gisenyi, Kabaya, Kabutare, Kibirizi, King Faisal Hospital, Kinihira, Masaka, Muhima, Munini, Nyanza, Ruhango, Rwanda Military Hospital, Murunda, Butaro, Kibagabaga, CHUB, Ruhengeri, Gitwe, Kabgayi, Kibogora, Kibungo, Kibuye, Kirehe, Nemba, Ngarama, Nyagatare, Nyamata, Rwamagana and Shyira.



Figure 11: Incinerator at King Faisal Hospital (left picture) and Ash waste disposal in a concrete pit (right picture).

During the visit, it was noted that the chimneys and the outer parts on the incinerators of different hospitals are black which shows that there are black fumes that escape from the system. It was also found that the incinerators used in Rwanda don't have filters to trap toxic substances. In addition to this, their chimneys are short.

Observed deviation from WHO guidelines for health care wastes management in Rwanda

While WHO recommend the HCW handlers to wear heavy-duty gloves and boots, it was noted during the visits that waste handlers were not adequately protected. Some wastes handlers wore thin disposable surgical gloves instead of thick heavy-duty gloves; others had no face masks in some hospitals

Hospitals without incinerators don't have the appropriate vehicles to transport their wastes to the incineration places. They use the vehicles that are used for other purposes. In addition while WHO recommends to label the vehicles transporting the hazardous wastes. This is not done in all visited hospitals.

The current incinerators do not have filters. Therefore, they release the toxic gases such as dioxins and furans and mercury and fly ash in our atmosphere.

3.2.4.3. Expired Pharmaceuticals in Hospitals

In all hospitals, when expired, pharmaceuticals are removed from the main store and stored apart. After reaching a certain amount, the hospital lists all the wastes and requests the MoH for the authorization to incinerate them. Normally, public health facilities copy REMA and RRA while the private hospitals sometimes also copy MINICOM.

It is when they get the permission from the MOH that they take their wastes to the incinerator. In many cases the MOH, sends an inspector to check if the request meets the reality. When their wastes arrive at incinerator, they pay fees calculated based on the weight of their wastes.

The issue of medical waste and drugs has further pushed the MOH to start an important project of installing an industrial incinerator with a high capacity of handling diverse kind of wastes. The pictures below are showing the incinerator under installation and some construction works still ongoing in Mageragere sector in Nyarugenge district. Even if the project seems to be progressing well some technical problems still need to be fixed before the project of incineration can start.



Figure 12: Industrial incinerator installation (left picture) and construction of the site at Mageragere (right picture)

3.2.4.4. Management of expired pharmaceuticals in RBC/CAMERWA

In Rwanda, there is currently no company that manufactures pharmaceutical drugs on a big scale. There is only one small, public facility (LABOPHAR) that manufactures, on a very small scale, non-sterile drugs such as tablets, capsules, syrups, ointments, suppositories, infusions (such as normal saline, dextrose 5%). Almost all medicines circulating on the Rwandan market are imported and introduced in the supply chain. Currently, the public pharmaceutical supply chain system is organized into national, district, health centers, health post and community levels. At national level, the public institution in charge of the importation of pharmaceuticals and other health related commodities is Rwanda Biomedical Center which in turn distributes to the District Pharmacy which procures and distributes to all health facilities.

According to RBC/ CAMERWA the expired medicines and products are found in all those components of the supply chain and their management is not centred. Each component of the chain manages itself the wastes generated. At central levels, expired, damaged and substandard medicines are all incinerated at different incinerators found in Rwanda but the authorization is given by the Environmental Health Department of the Ministry of Health and always when RBC applies for the authorization a copy is given to REMA and to RRA. As the wastes inventory and incineration is monthly done, they do apply for a long period for the authorization. Therefore, the application doesn't go with the list of products to be incinerated. The incineration fees are paid based on the mass of wastes to be incinerated.

RBC is also responsible for the wastes of the former LABOPHAR. They include the expired raw materials, laboratory chemicals, broken glassware, non operating laboratory equipment, and RBC is still wondering how it will proceed to dispose them of in an environmentally friendly manner.

Recently, CAMERWA contracted a company in Huye District to recycle plastic bags containing infusion liquid. To avail the bags to the company, bags are emptied and the liquid gathered and transported to Nduba landfill. Like other wastes from CAMERWA, the authorization process aforementioned was followed.

- **Causes of expired Pharmaceuticals**

The mentioned causes of expiries are: the change of treatment protocols (e.g. from chloroquine to quinine), and change in the disease burden, inaccurate data from lower levels and the worldwide burden of substandard medicine on the market.

3.2.4.5. Management of effluents or waste water from Hospitals and clinics

The liquid wastes from the hospitals are treated in some hospitals while in others, waste water is sent in pit without any treatment. At King Faisal Hospital, waste water is treated using activated sludge and then sent in the environment. As the system is at the starting phase, the efficiency of the plant is not known but it manages to mitigate the smell. In health centers, waste water is collected in pits without prior treatment.

Management of hospitals wastes both liquid and solid presents in general challenges mainly wastes from photographic room and dental department. These wastes contain hazardous products mentioned in annex I- **Y16**. While waiting for a sustainable practice, some hospitals such as King Faisal and CHUK are trying to reduce the amounts of wastes from these particular services by shifting to digital system where they give to the patient a CD containing the picture instead of producing a film. However, this is not liked by patients as many of them end up claiming the film. In addition to this, in dental department, digital technology is not yet installed.

3.2.3. Wastes from paints processing industries: case of AMEKI and new SIGMA PAINTS Ltd

Paints processing industries generate wastes that fall in hardazous wastes category captured in Basel convention in annex I, Y-12. The field visit focussed on AMEKI COLOR and to the NEW SIGMA PAINTS Ltd. AMEKI in full means, Atelier de Meubles de Kigali. This workshop or Atelier started in 1982. To date, this workshop that fabricates both wood and metallic furniture is among the biggest in the country. There is also AMEKI COLOR. This one started in 1989. It is the biggest in terms of output and capacity. It is located in Gikondo in the industrial area. It deals with paint manufacturing and has the capacity to satisfy customer requirements at short notice regardless of quantities. Presently AMEKI COLOR has almost 70%of the paint market in RWANDA.



Figure 13: Jerry cans and metal containers wastes from paint industry awaiting for recycling at Ameki Color factory.

There is also AMEKI POLYESTER and PLASTIC manufacturing section. AMEKI POLYESTER deals in manufacturing of water tanks out of polyester materials. It is located in Gikondo in the industrial area. AMEKI PLASTIC is still small and presently only manufacturing paint plastic containers. AMEKI POLYESTER and PLASTIC manufacturing started in 1996.

AMEKI generates a wide range of both liquid and solid wastes. Solid wastes generated by AMEKI include plastic wastes (Jerrycans and cups) used in paints packaging. However AMEKI has made tremendous steps as it recycles some of their plastic wastes when raw materials are not sufficient. Before their recycling, plastics are washed and waste water from the washing activity is collected in a tank with the capacity of 80m^3. This underground reservoir is emptied monthly and waste water is transported to Nduba landfill. The sludge settled at the bottom of the tank is removed and dried in AMEKI before its transportation to Nduba landfill. Another source of plastic wastes are packages of raw materials drums but as others they are also taken to some selling points such as Gakinjiro where different people and institutions come to buy them.



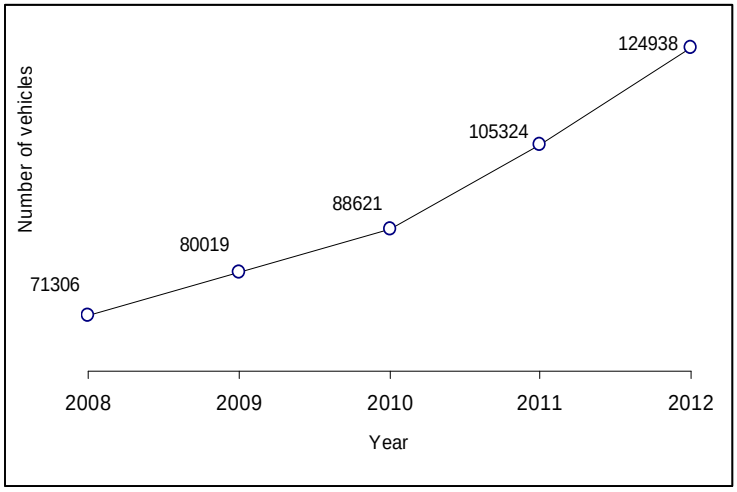
Figure 14: Two septic tanks of a capacity of 80 m^3 holding a toxic chemical wastewater from the paint process (left picture). Dried sludge from the septic tanks (right picture)

Briefly, the analysis of mass mainstream of plastic wastes generated by AMEKI shows that many of plastics used to pack the paints are bought by the local population for other purposes such as water storage, water fetching and other household activities. Metals wastes are also present at AMEKI. They include wastes from AMEKI workshop and AMEKI COLOR. Metals wastes are sold to dealers of SteelRwa. The metals wastes from AMEKI COLOR are cups for packaging the paints and they are washed before they are sold.

NEW SIGMA PAINTS Ltd, a paint manufacturing company that started in 2011 does generate wastewater from paints reactors washing activity. However the first fraction of water from the reactor cleaning is reused in the next preparation of waterpaints while other fractions are sent in the environment without a priory analysis or treatment. Regarding the raw material drums, their

potential clients were found to be the mining companies as they use them in transportation of minerals.

3.2.4. Oil and other wastes from garages



The number of vehicles has increased over the past years as illustrated by the figure 15 below and automatically their increase translates the increase in garage density and oil usage and consumption. The wastes from garage are covered by the annex I of basel convention in its Y-19 category.

Figure 15: Number of registered Vehicles

Garages generate different types of wastes including: tissues, used engine oil; used spare parts; metals scraps, deteriorated and other garbages similar to household wastes.
In Rubavu District and in some garages of Kigali City, the used oil generated by the garage activities is collected and sold to Congolese dealers 2 times a month. In Rusizi, the cement plant (CIMERWA) use the oil as fuel in the heating process and according to them; the regional quantity is not enough.

There are also other emerging usages of oil from garages. One is the usage of garage oil in houses' roof protection. This practice found all over in the country is dangerous because the oil can enhance the fire accident if it happens.

The second emerging application is the reuse of oil from garage at household level as a replacement of the wood and charcoal. Local technicians are manufacturing stoves specific to this reuse. This is the case of technicians from KINAZI sector in Nyanza district who manufacture such stoves.

The scraps metals and replaced spare parts are collected and stored. When the stock is big, SteelRwanda scraps dealers buy and take them to the plant for recycling. However, sometimes the clients like to take the replaced spare parts to their homes. Furthermore, in Kigali City wastes which are not taken to SteelRwanda Ltd are collected by COPED.

The management of garages wastes is not only in the hands of garage owners and their staff. The local government regularly conduct visits to check how garage wastes are managed. For example in Kicukiro district, the district environmentalist inspects garages at least once every 2 months particularly focusing on canalization where water and oil shouldn't be mixed.

3.2.5. Wastes from iron sheets and their accessories processing companies

In recent years, the country has gained a rapid urbanization characterized by the construction of roofs covered by modern iron sheets and their accessories. This sudden development led to the investment in iron sheets and their accessories processing and in few years TOLIRWA that was the only leading company in this sector got new competitors operating on Rwandan territory namely PETROCOM, UPROTUR, SAFINTRA MANUMETAL, etc.

As in most cases, wastes come from the raw materials processing. The above mentioned companies generate wastes that are mainly predominated by metals. According to them, the metal sheets that are used are iron rich. This is the reason why their wastes is collected by metals scrap dealers that end up by selling them to SteelRwa industry located in Rwamagana on the main road going to Rwamagana District, of eastern province.

3.2.6. Laboratory Chemical wastes

This kind of waste is especially found in some institutions like higher learning institutions, research institutions, higher schools and some biomedical laboratories. In general, the kinds of waste mainly generated in those institutions are solids and liquids and unused expired chemicals. These are generally inorganic and organic salts as well as inorganic and organic solvents. It was noted during the visits to the University of Rwanda (UR), the School of Sciences, the Catholic University of Save (CUR) that the handling of chemical reagents in general is not satisfactory. Currently there is no existing facilities for storing both solid and liquid expired chemical reagents. And while conducting laboratory sessions the generated wastewater is everywhere directed in pit tanks without prior treatment.

Figure 16 : Chemical storage room at UR Huye campus where it can be seen diverse kind of toxic chemical.

	
Chemical storage room at UR Huye campus where it can be seen diverse kind of toxic chemical.	This is a temporary storage for expired chemical at UR Huye campus close to the Chemistry laboratory

3.2.7. Municipal and household wastes management

In Rwandan cities, waste management is conducted by private corporations. At present, 13 companies (AGRUNI, COPED, UBUMWE, INZIRA NZIZA, ROAD ENVIRONMENT PROTECTION (REP), CESCO, COCEN, COVAGAYING, ISUKU KINYINYA, UMURIMO MWIZA, INDATWA, BAHEZA) are operating in Kigali City. These companies take care of the collection and final disposal of waste. Waste is collected with garbage trucks and transported to the recycling or disposal sites.

The leading company in wastes collection in Kigali City is COPED GROUP which is a social-profit oriented company operating in Rwanda with a core business of "waste collection & transportation toward waste recycling" from the last 14 years. Up to now COPED Group operates in Kigali City.



Figure 17: COPED trucks dumping municipal wastes at Nduba dumping site (left picture). The right picture is showing a woman worker collecting plastic bottle in the dumping site.

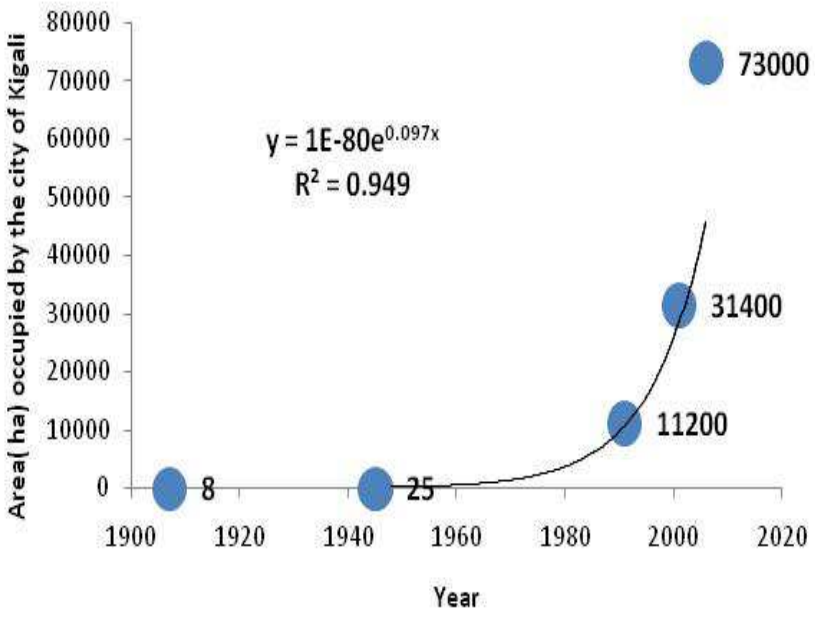
COPED group is subdivided into 6 companies. The table below is showing the tasks for each company.

Table 4: COPED companies and their tasks

Company	Activity
COPED Ltd	Waste Collection;
ECOPLASTIC	Plastic recycling
ECOMAKE Ltd	WASTE TO ENERGY producing "briquettes" used as "charcoal" at household level. This company also deals with WASTE Composting
GREENSHOP AFRICA	Promotion of recycled products used in sanitation
CLEAN THE CITY NETWORK	PUBLIC AWARENESS and Research Development
INOVSTAND	Standards development: SOP, National, and International

Before the company takes the wastes from any source, it does **a Waste Audit exercise by** visiting the client, characterization and quantitative estimation of the waste and a pre-feasibility study.

Trend of Kigali City wastes

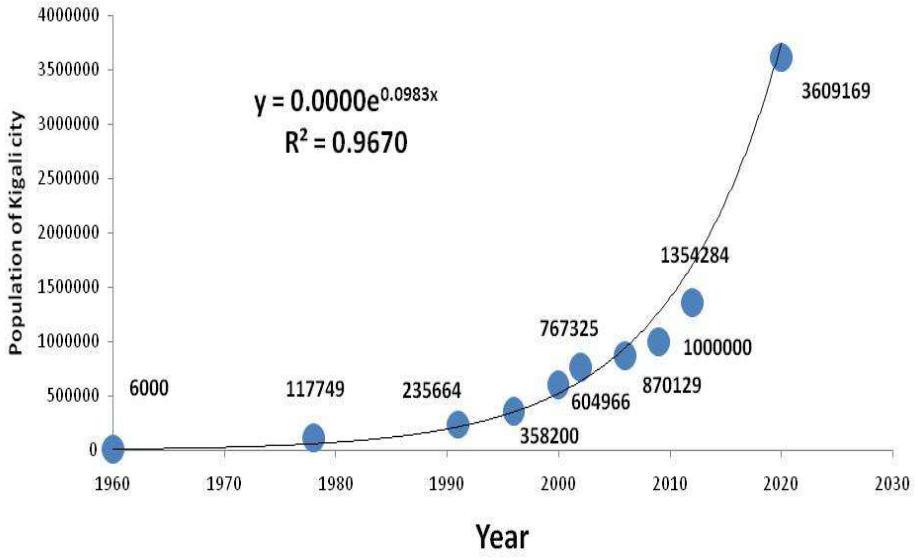


The size and population of Kigali City has rapidly grown especially after 1994, due to the return of refugees from different areas. A big number of them opted to settle in the capital for employment and security reasons (Musahara and Huggins, 2005). Besides that, immigration to Kigali from late 1990s may be a manifestation of more employment and business opportunities compared to other Rwandan towns.

Figure 16: Trend of the space occupied by the City of Kigali

As a result of this demographic dynamics, Kigali City which only covered an area of 112 km^2 with 140,000 inhabitants in 1991 was believed to have a population of about 1,000,000 people living in an area of 730 km^2 in 2006.

The figure below is similar to the next one which gives a picture of both population trend of Kigali City and the solid wastes generated per day. The 2012 National population census put Kigali's population at 1.135 million, making it home to 16 per cent of the country's population.



Researchers have shown that the average global waste generation is around 1.2 kg/day/capita. However, this estimate is broad as the rate varies considerably by region, country, and city but mainly with the economy and the degree of industrialization.

Figure 17: Trend of Kigali City population

Generally, the higher the economy development and rate of urbanization, the greater the amount of solid wastes produced. If we consider the average mass of waste/capita/day and the population of Kigali currently 1,362,000 kg of municipal solid waste (MSW) while the follow the same model with the same R^2

- **Residential waste**

Residential areas of Kigali City have been divided into three main categories: High standing, Middle standing and Low standing residential areas. In all these areas the wastes collection services start after the signing of contract and it is done on a door to door or site to site with a minimum of one collection per week.

COPED requires the clients to sort their waste at least into 4 categories and each category is in a specific container with a specific color as indicated below. For the unsorted wastes, COPED staffs separate them before transporting them to their facilities or to NDUBA landfill.

GREEN BIN/BAG for Organic / biodegradable materials

BLUE BIN/BAG for Recyclables: Plastic, Metal, Glass bottles, Paper and carton,

BLACK BIN/BAG For non recoverable waste like mixed/disposable rubbish

RED BIN/BAG for hazardous waste like pet waste, sharp tools, etc.

- **Commercial wastes**

As in residential areas, COPED also collects regularly wastes from non residential clients such as: small shop/office/Bar/Restaurant to big hotel/shopping mall, institutions and industries. In all cases, the wastes collection process starts after signing a contract and waste sorting is done following the procedure earlier indicated. Unlike the previous case, commercial wastes are collected following corner to corner collection system and this is done on daily basis.

Apart from these scheduled wastes collection activities, COPED offers to the population of Kigali City, special waste collection services where the client with emergence in wastes collection calls and COPED requires at least 24 hours to get ready. This kind of service is given to any kind of client.

The collection in the city has been facilitated by the installation of small sized refuse bins on public areas and waste containers next to big wastes generators such as market where they are lifted to the truck and carried to the wastes management facilities where further sorting and disposal take place. The wastes collection activities by the company staff is done daily in public areas such as the markets, street, business areas etc. while at household level, the company workers pass once per week at each house to collect the domestic solid wastes. The table below shows the private cleaning Companies and landfills/ dumping sites of some cities in Rwanda

Table 5: Private cleaning Companies and landfills / dumping sites of some cities in Rwanda

Districts	*Private cleaning services agencies*	*Landfills sites*
RUBAVU	ACAPE, YFSP	RUTAGARA
HUYE	AFAB, DUHUZINGUFU ENVIROCARE, BEST COMPANY (which is currently replaced by KPC), ISOKOYUBUZIMA, ENDSCO LTD.	RWABAYANGA MUKURA
NYAMAGABE	UMUCYO IWACU GASAKA, HAREMA ISUKU KIGEME	AKABACUZI
MUHANGA	TUBUSEZERERE,	MUSHUBATI
RUSIZI	ENER, COAMECYA, JYAHEZA.	RUHIMBI RUDASOMWA
MUSANZE	KOAMU, TWITE KU ISUKU N' ISUKURA TURENGERA IBIDUKIKIJE,KG Harvest	RUGESHI

The collection areas cover only the urban areas of the country. There is no waste collection in rural areas. There, people use the wastes from their houses to generate manure or to feed their animals. This has been also noticed in districts that are located in remote areas without a well developed town such as Gisagara and Nyaruguru.

- **Nduba dumping site**

The Nduba dumping site is a new disposal site opened in the City of Kigali after the closure of the Nyanza Kicukiro dumping site. The latter was causing serious health and safety problems to the people leaving around the site. Therefore, a decision to close the site was taken and the restoration action is to be undertaken. The newly opened dumping site at Nduba was initially designed for receiving in general all kinds of wastes segregated at the origin in order to allow an easy recycling process for some of them. However, from its opening, no infrastructure development is going on as planned. It should be stated that the entire site is actually fenced which stops intrusion of surrounding people into the dumping site coming to take out some of the waste disposed of mainly expired food stuffs from supermarkets.



Figure 18: Mixed waste at Nduba dumping site (left picture). Police supervising the destruction of molasses used in the production of substandard alcohol causing serious damage to people (right picture).

This results in having all kind of waste mixed all together as it can be seen on picture 21. The only activities taking place at this dumping site are the composting of biodegradable waste and the compression of plastic containers before its processing at recycling sites. Furthermore, it was observed that glass bottles which have been stored there have been broken and mixed with soil as shown on photo below.



Figure 19: Compressed plastic stuffs ready for the recycling process (left picture). Broken glass bottles mixed with other kind of plastic and soil without any recycling process in the country (right picture).

Urgent measures regarding the management of this dumping site are required in order to avoid any unwanted accidents or diseases which may be caused by the lack of appropriate sanitation measures at this particular site.

3.2.9. Recycling and Reuse practices in Rwanda

- **Glass reuse:**

Glass bottles are reused for different purposes such as bottling of the local wine and traditional medicine. The most popular bottles are Heineken bottles and liquor bottles.



Figure 20: Heinken Bottles used in local beer battling

- **Plastics reuse**

Plastic bottles from different local juice and water producing industries such as Amazi ya Huye, Inyange, Ese Urwibutso Nyirangarama, Azam etc, are being used in traditional medicine bottling and in family ceremonies particularly in rural areas.



Figure 21: Plastic wastes collected for domestic utilization

This last practice has emerged after the ban of the ancient culture of sharing beer on "*callebasse*" and straw pipes. The other types of plastics used for this purpose are small jerrycans from 1 L to

2 L. Again bottles that were containing mineral water are also re-used to sell cold water to people who are not able to buy bottled water from industries , This has been found in some areas of Kigali such as in Nyabugogo car park station and in Gakinjiro. Small plastic bottles that were containing GIN are used by smaller sellers to sell small quantity of oil, glue, petroleum etc. However, it has been noticed that when totally expired they are dumped informally. In the town, different households are using plastics to trigger the fire from charcoal. This practice is found in all cities of the country and it contributes to air pollution.

- **Plastics Recycling**

Among the visited industries, two of them are recycling some plastics. These are AMEKI and ECOPLASTIC. Ameki does recycle some of their used containers to manufacture the new ones. ECOPLASTIC industry is recycling mostly the plastic bags mainly used by small sellers to pack goods for their clients and the plastic bags that protect shipped new equipment and other goods. Even if the company does recycle plastic waste, there is still one kind of plastic (the SUPANET plastic container) which is not yet recycled. This one requires a special kind of equipment which has been ordered from the US and will be soon installed at the factory.



Figure 22: Recycled jerrycan (left) from a mixture of raw material and grinded old jerrycan (right)



Figure 23: ECOPLASTIC factory at Mageragere (left picture) and SUPANET plastic not yet recycled and stored at the factory site (right picture).

❖ Metals Reuse and Recycling

SteelRwa is the steelmaker of steel bars in Rwanda located on the main road Kigali-Rwamagana. The Industry recycles iron rich scrap by converting them into steel bar and monthly, the industry recycle about 1400 tones. Among 1400 tones of scrap, 1200 are collected from different corners of Rwanda by their dealers and the 200 tones remaining come from two neighboring countries which are Burundi and RDC. The scrap from RDC enters in the country by Goma border and are coded as 72042900 by RRA, a code specific to "other wastes and scrap of alloy"



Figure 24: Metal scrap waiting for the recycling process at SteelRwa(left picture) and reused metals in Agakinjiro (right Picture)

During the recycling process scrap are heated up to 1500 ^{0}C. The entire process generates generally three types of wastes: Smoke and Dust which is finally converted into slag (solid waste) to which is added the energy loss. The dust is lost during the melting of the scrap and it goes in the chimney with the smoke. Once in the chimney, it is dissolved by the cold water

circulating in the chimney. The mixture is led in the settling tank. The final results are solid wastes which look like a volcanic rock.



Figure 25: Solid waste generated by SteelRwa and re-used in Kigali cement

This type of generated waste is collected by the Kigali cement industry for reuse in cement manufacturing process. According to the Managing Director, the smoke that they produce contains only CO_2. SteelRwa ltd. production supplies a number of neighboring countries like Kenya, Uganda, South Sudan, Burundi and Eastern Congo.

3.2.10. Current practices for control of Transboundary movement of wastes: Institution involvements and their responsibilities

- **Knowledge of what is hazardous wastes**

During the visit of customs offices, many of the customs staff asked the interviewer to explain what hazardous waste is and to provide the examples. This shows that they don't know and aren't aware of that concept of hazardous wastes.

- **Waste Types that are Causing Concern**

The types of wastes that cause concern and that have been exported are broken glasses and engine used oil. Actually, the broken glass wastes are no longer exported. They are just dumped at the Nduba site without any other alternative way for recycling.

- **Responsibility of Controls**

In general, RBS is responsible for the control for the quality of goods shipped but where necessary the responsibility is shared with other administrations and authorities including RRA, RAB, RNP and REMA. However RBS doesn't have the responsibility of notifying to the BC secretariat.

- **Statistics on the Export and Imports of Waste**

While the Basel convention requires the focal point to report the transboundary movement of hazardous wastes and other wastes, REMA indicated that there are no statistics or channel of collecting them up to now. According to the information from the Customs, wastes are imported or exported using the forms that are used for other goods while the Basel convention clearly shows the information and the procedure that has to be followed in cases of transboundary movements of wastes. Another challenge is that the codes that are used by RRA for wastes are not understood by all stakeholders involved in transboundary movement of hazardous wastes. In addition they don't allow distinguishing a hazardous waste and other wastes.

- **Take Back Obligations**

Customs do not have the responsibility for the take back obligation. This is largely the remit of RSB, and again data regarding the returns were generally not available to REMA and to RRA Administrations, hence a zero response to these questions. However, one cases of re-export has been indicated by RBS staff. The followed procedure is given in details in the next paragraphs

- **Prior Written Notification and Consent**

Rwanda Revenue Authorities (RRA) does not have the responsibility for the notification process and therefore may not actively be aware of and able to decipher between consignments of waste and other commodities. This was reflected in the responses where interviewed customs office indicated that they are not aware of this procedure.

Given that Customs Administrations are not actively involved in the notification and consent procedure and the inferences of the responses regarding this issue highlighted a significant gap in the source control and as such tracking and control of waste shipments cannot be effectively completed.

- **Inter-Agency Co-operation and Information Flow**

REMA, RBS and RRA respondents reported that communication/co-operation exists between them and other authorities/administration involved e.g. Police, RAB, and local government) in

the implementation of transboundary movements controls. In some cases, this is provided for under national legislation or MoU (MoU between RRA and RNP, MoU between REMA and RNP). The information collected indicated limited data and information in the system.

3.3. Key issues in the waste management to be addressed by the Strategy

Table 6 below is showing the waste code linking it to their generators, the issues they are causing, their impacts, also identifying the actions that needs to be taken, the resources needs and the actors that will be involve their management.

Table 6**: Summary of issues, action to be taken and actors**

Wastes CODE	*Generators*	*Issue*	*Analysis / impact*	*action to be taken*	*Resources Needs*	*Actors*
Y1, 16	Hospitals(CHUK, CHUB, King Faisal, Kanombe military hospital, Kabgayi etc) , Health centers and clinics, MINISANTE (MOH)	-Expired chemical and drugs -Incomplete combustion during incineration process -Lack of filters -Management incineration ash -Hospital waste water management -Lack skilled personnel in wastes management	-Air Pollution - Unknown disposal -Soil, water bodies and ground water contamination - mispractices	- Providing appropriate filter on incinerators -Establishment of wastes water treatment systems - Reuse of incineration ash. -Capacity building trainings in wastes management -Awareness campaigns	-Budget for : (1)Trainings, (2) waste water treatment system, (3) New technology to replace the old x-ray technology. -Specialized trainers	MINIRENA, REMA, RNRA, RSB, MINISANTE (MOH), MINECOFIN, MININFRA, HOSPITALS, NGOs, PSF, Engineers association, Districts and cities
Y2	KIPHARMA , LABOPHAR , BUFMAR	-Expired chemicals and raw materials	-Not labelled correctly -No guideline in the managements	Establishment of a National expired laboratory wastes management guideline	Budget and specialist for its development	Waste generators, MINIRENA, REMA, RNRA, RSB, MINISANTE (MOH), MINECOFIN, MININFRA, HOSPITALS, NGOs, PSF, RSB , RURA, Engineers association, Districts and cities
		-Broken glassware	Unknown disposal	Keep them in stocks while waiting for a recycling option	A private Glass blowing unit for recycling with human technical expertise	
		-Non working equipment	Unknown disposal	Label them correctly and keep them in stores while waiting for the alternative	Seek advice from specialized technicians	
Y3	HOSPITALS , CAMERWA , PHARMAC	Expired drugs	-Big volume -The disposal of some of	- Providing appropriate filter on incinerators - Reuse of incineration ash.	-Training budget -Specialized trainers	Waste generators, MINIRENA, REMA, RNRA, MINISANTE (MOH),

Wastes CODE	*Generators*	*Issue*	*Analysis / impact*	*action to be taken*	*Resources Needs*	*Actors*
	EUTICAL WHAREHOUSES, RETAIL PHARMACIES		them is still unknown - Incineration process not adequate			MINECOFIN, MININFRA, HOSPITALS, NGOs, PSF, Engineers association, Districts and cities
Y4	MAGERWA, MINAGRI, RAB, RETAIL BIOCIDES PHARMACIES, RSB	-The mass stream not monitored - Expiries	- Incineration process is not adequate	- MINAGRI/RAB should monitor the mass stream of agriculture products, On expires MINAGRI to partner with MOH for incineration	Staff in charge,	Wastes generator, MINIRENA, REMA, RNRA, MINISANTE, MINAGRI, RAB, PSF, RSB, RURA, RDB
Y5	Trust industry, GAKINJIRO, AMEKI, SADOLIN, NEW SIGMA PAINTS	-Unprotected manipulation of metals that may be contaminated at Gakinjiro; -Waste water from paint processing at AMEKI versed at NDUBA, Solid waste - Sludge from wastes water	-Water pollution -soil pollution -Human life exposure	-Characterization of that wastes(chemically and physically) - Utilization of the appropriate technology for its treatment	Budget and skilled personnel	MINIRENA, REMA, RNRA, MINICOM, RSB, MINISANTE (MOH), PSF, RURA, RDB
Y6, 14	Higher learning institutions (UR-compus, ICK, INES, CUR), RSB, Some industries such as SULFO, AMEKI, SADOLIN, secondary schools, some industries, KIPHARMA, DUPHAR, AFRISHEM, NILDA,BMC	-Expired chemicals -Used solvents are channel in pit tank	-Unknown disposal -Possible Contamination of ground water, surface water and soil	-Collect them in -Development of the National laboratory wastes management, -Keep them in a specific reservoirs and label them correctly - Possible utilization in Cement industry	Budget and specialist to develop a national laboratory wastes management	MINIRENA, REMA, RNRA, MINEDUC, MINISANTE (MOH), PSF, MINICOM, wastes generators, RURA, RDB

Wastes CODE	*Generators*	*Issue*	*Analysis / impact*	*action to be taken*	*Resources Needs*	*Actors*
	(Biomedical center Ltd), REG & WASAC					
Y7	RWANDASteel Industry, CIMERWA, Kigali Cement Industry , RULIBA	SteelRwa generating slag	Rich in metals particularly iron	-used by Kigali cement as a raw material	-	Wastes generators, MINIRENA, REMA, RNRA, RURA, MINIFOM, MINISANTE (MOH), PSF, Districts and City
Y9	GARAGES, AMEKI, SULFO, NYIRANGARAMA, INYANGE	-Garage oil (used engine oil)	-Managed differently - Sometimes send in the environment	-Collect in an appropriate reservoir -Reuse by cement industry -link cement industry with garages	-budget for reservoir	MINIRENA, REMA, RNRA, RSB, District and City, PSF, MINICOM, Waste generators, MINISANTE
Y10	REG & WASAC	Transformers suspected to contain PCBs	-No confirmation of the presence or absence of PCBs	-laboratory Analysis required	Budget for analysis	MINIRENA, REMA, RNRA, MININFRA, REG & WASAC , RSB, UR
Y11	Not Applicable (NA)	NA	NA	NA	NA	NA
Y12-13	UTEXRWA, Printing companies, UMUTARA enterprise, AMEKI, SADOLIN, NEW SIGMA PAINTS	Empty Cartridges containers Waste water (see Y6)	-Disposal of cartridges not known	-Keep them in the stock until the recycling process is specified -Setting up a collection system for this type of wastes	-Waste data manager -Recycling technology	MINIRENA, REMA,RNRA, MINICOM, PSF, Wastes generator, RSB, RURA, MINISANTE
Y15	Mining companies, MINADEF, RNP	No info	-	-	-	MINIRENA, REMA, RNRA, MININFRA, MINADEF, RNP
Y17	MANUMETAL, GARAGES, TOLIRWA, PETROCOM , UPROTUR, SANFITRA, MIRONKO	-Metal Scraps	-Collected and sold the steelRwa dealers	-	-	MINIRENA, REMA, RNRA, MINISANTE (MOH), RURA, RSB, PSF, waste generators
Y18	UTEXRWA,	Plastics,	-	-implementation of	-Private investors	MINIRENA,

Wastes CODE	*Generators*	*Issue*	*Analysis / impact*	*action to be taken*	*Resources Needs*	*Actors*
	SteelRwa industry, All industries	sludge, metals, waste water, papers, woods	Environmental pollution -Human health risk	appropriate disposal and recycling technologies.	-Skilled personnel	REMA, RNRA, MINICOM, MINISANTE (MOH), PSF, RSB, RURA, waste generators
Y19-Y49	UR-colleges, RSB, REG & WASAC , RNP, NAEB, Hospitals, Mount Kenya, ICK, CUR, INES	Expired chemicals	-Human health exposure _environmental concern	-Inventory aiming at putting out their qualitative and quantitative practices -Establishment of laboratory wastes management guidelines -Sorting	-Skilled personnel -Budget for the inventory	REMA, UR, and wastes generators
e-waste	Importers, MINISTRIES, MAGERWA, Household, Higher Institutions (UR, ICK, INES, INATEK, Mount Kenya University), COOPED, REMA, Informal recyclers, Schools, etc.	-lack of updated records -Non existence of e-wastes collection system -Unknown exit	-Human health under danger _ environmental pollution - Unawareness of both environmental and health impacts	-Establishment of data acquisition system -Creation e-equipment repairs cooperatives working in a specific area with an appropriate wastes store.	- Waste data manager -Budget for working site preparation	All public and private institutions.
Municipal wastes	Kigali City, Huye, Rubavu, Musanze, Komembe , Rwamagana	-wastes are not sorted at both generation and dumping sites -No guidelines for wastes sorting - Dumping sites not fulfilling all requirements	- Environmental pollution: GHG, ground water, surface water, Human health threatened. -Big space required	-Data collection and exchange system -Establishment of National Municipal wastes management policy -Develop a municipal wastes incineration project.	-Waste data manager -Budget and skilled personnel -private sector involvement.	MINIRENA, REMA, RNRA, MININFRA, MINICOM, MINISANTE (MOH), PSF, MINADEF, RURA, RDB, Districts and City

3.4. Status of illegal traffic in hazardous waste and other wastes in the country

Even if cross-border trade, mainly informal, also plays an important role in poverty reduction as it provides trading opportunities to many of the poorest population, particularly women, who are the most active traders along Rwanda's borders; it also facilitates the illegal traffic of both authorized and unauthorized trades. These illegal trades are being facilitated by the porous nature of Rwanda border, particularly the Uganda and DRC borders.

Cross border Trade products include fruit and vegetables, livestock, meat and dairy products, manufactured goods (cement, beverages and cosmetics), agro-processed goods and substantial re-exports. These products are exported informally often on foot by small traders who operate along the borders. A simple look to this list cannot trigger the attention. However, all these products can be hazardous depending on the concentration of some chemicals or to the level of infection. Another famous illegal traffic that is known consists in plastic bags that are used to pack the goods from small sellers. The field visits to Gatuna and Rusizi borders have again confirmed the tendency of introducing them into the country although their ban is known since many years ago.

The field visit again illustrated the cases of the tendency of shipping the palm oil in our country for other purpose rather than soap processing as requested by RBS. One of the garages of RUBAVU and some of Kigali City indicated also the transboundary movement of oils from garages to CONGO. However this has not been confirmed by the RUBAVU border.

The illegal drug trade is also frequent and the Northern and Eastern provinces are the worst hit by illegal drugs trade and both men and women are involved. According to the newtimes available on http://www.newtimes.co.rw/news/views/article_print.php?i=14946&a=51899&icon=Print, nearly all drug abuse cases registered involved marijuana and illicit liquor, commonly known as Kanyanga. Over 1,000 litres of the lethal brew were seized and 136 suspects arrested in connection with the offence, while 659 kilos were impounded and 456 suspects taken into custody.

Most of the crimes were registered in the Eastern Province, where 442 kilos of cannabis and 308 litres of illicit brew were seized and 153 arrested for alleged involvement in the crimes. The Northern Province filed the highest cases involving Kanyanga where over 477.5 litres were seized while most consumers were arrested in Kigali.
Data from the RNP showed a total of 10,219.5 kilograms of cannabis and 36,767 liters of Kanyanga from 2012, 2013 and from January to September 2014 as shown in figures below.

Figure 26: Illegal traffic of cannabis

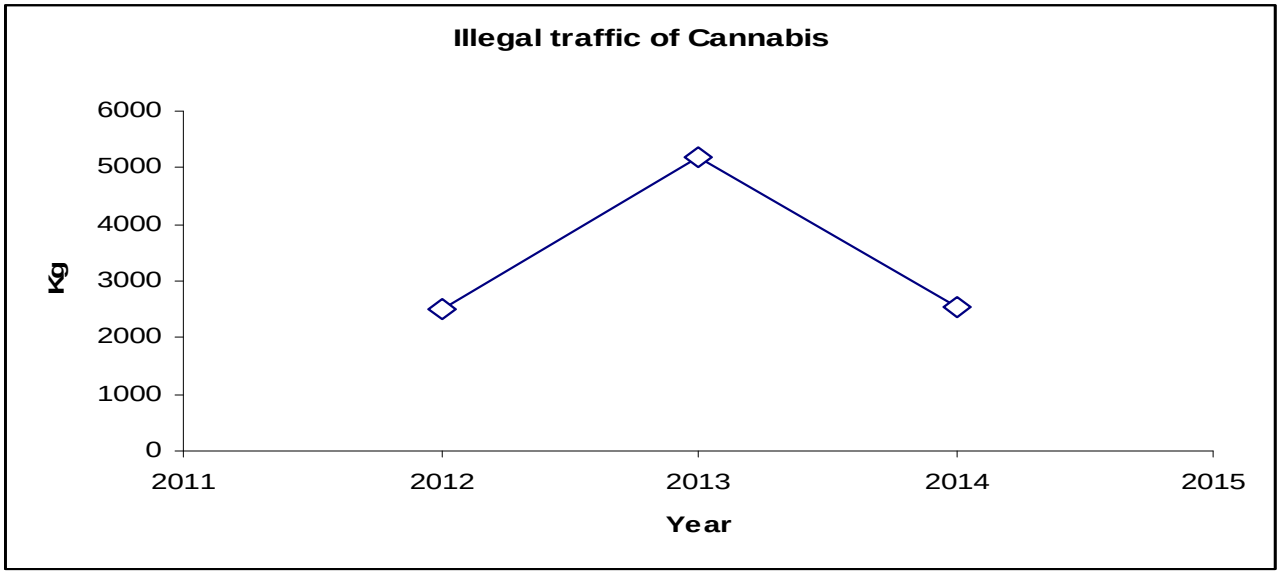
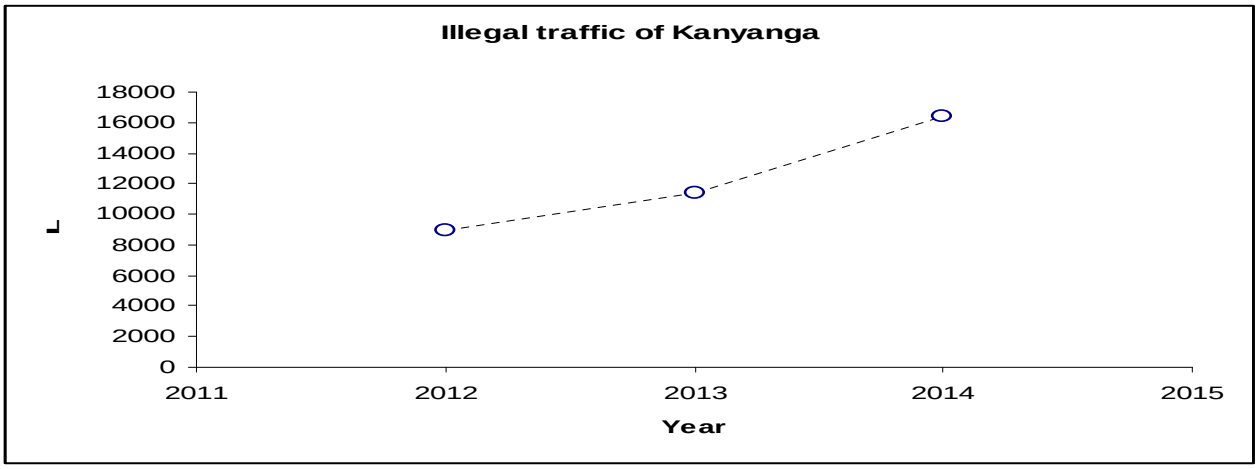


Figure 27: Illegal traffic of Kanyanga



In that newtimes, Supt Emmanuel Ngondo, the Director of anti-narcotics unit in the Criminal Investigation Department (CID), marijuana cases were prevalent in the Eastern districts of Kirehe, Ngoma and Kayonza while Kanyanga cases were high in Gicumbi, Nyagatare and Burera districts. Marijuana was believed to be peddled from Tanzania and the DR Congo while Kanyanga is said to be ferried from Uganda.

For now, security agencies, the public and other institutions have joined the battle while previously, the task was almost left to the police. This has helped identifying dealers and consumers following tip-offs from the public. Furthermore, the Rwanda Revenue Authority (RRA) and the National Police have strengthened their commitment to fight fraud and all forms

of illegal trade by signing a MoU through which the Police has established a unit known as Revenue Protection Unit (RPU) attached to the tax body. The unit works hand in hand with RRA staff at the border.

3.5. Legal, policy and institutional framework of waste management

The increase in population, rapid urbanization and rapid development result in an increase in hazardous wastes and other wastes generation. In order to achieve an environmentally sound management of hazardous wastes and other wastes, the national legal, policy and institutional framework of waste management constitutes the fundamental basis for sustainable environmentally sound management of waste. The Basel Convention provides an internationally agreed framework which many countries use for the development and implementation of national waste management-related policies and international commitments. The effective environmentally sound management of waste and implementation of waste management policy depends on the institutional capacity of national and subnational waste management related agencies.

It is in this line that Rwanda is equipped with institutions, laws, regulations, and policies enacted to protect environment. Also Rwanda adhered and ratified international treaties and conventions' aiming at the promotion and the protection of environment either, nationally or internationally.

3.5.1. Legal framework

(1) The Constitution of the Republic of Rwanda

The Constitution of the Republic of Rwanda of 04 June 2003 as amended to date in spite of being the supreme law of the country does not contain specific provisions regarding the waste management. Its article 49, however states that *"Each citizen has the right to healthy and satisfying environment. Each person has the right to protect to conserve and promote the environment. The government will take care of the environment protection. An Act defines the procedures of protecting, conserving and promoting environment"* and according this article the environmentally sound management of waste should be included in the environment protection and promotion.

Being part of the international arena, Rwanda shares with the rest of the words several concerns, including "the environmental protection and promotion" that should be treated commonly internationally. It is in this line that the Constitution of the Republic of Rwanda, 2003 in its **article 190** stipulates that "*The treaties and international agreements regularly signed and approved have since their making public within the official magazine, an authority superior to that of the organic laws and those of ordinary laws, under reserve, for each agreement or treaty of its execution by the other part.*"

(2) International conventions and Protocols

A. Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal

The BASEL Convention on the Control of Transboundary Movements of Hazardous wastes and their disposal as adopted at BASEL on 22 March 1989, and approved by the Presidential Order n° 29/01 of 24 August 2003 approving the membership of Rwanda includes hazardous wastes that are explosive, flammable, poisonous, infectious, corrosive, toxic, or eco-toxic. Annexes I-III identify the categories or waste and characteristics that the Convention covers. Annexes VIII and IX list specific wastes identified as hazardous or non-hazardous. The Convention has 168 Parties.

During its first decade, a principle focus of the Convention was to establish a control system for transboundary movements of hazardous waste. Additionally, a number of environmentally sound management guidelines were developed under the Convention. More recently, work of the Convention has focused on capacity building and technical assistance. In 1995 the “Basel Ban” was adopted. This amendment to the Convention bans hazardous waste exports from Basel Annex VII countries (members of the EU, OECD, or Liechtenstein) to all other Basel Convention parties. The Basel Ban will not come into force until ratified by three-fourths of the parties that accepted it. A 1999 Protocol on Liability and Compensation also has not yet come into force. The objective of the Protocol is to provide for a comprehensive liability regime, as well as adequate and prompt compensation, for damage resulting from the transboundary movement of hazardous and other wastes, including incidents occurring because of illegal traffic in those wastes. More recently, the Basel Convention formed the Mobile Phone Partnership Initiative with industry to addresses the environmentally-sound management of end-of-life of mobile phones. As of February 2014, 180 states and the European Union are parties to the Convention. Afghanistan, Haiti and the United States have signed the Convention but not ratified it.

B. United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty negotiated at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro from 3 to 14 June 1992. The objective of the treaty is to *"stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"*.

The United Nations Framework Convention on Climate Change (UNFCCC) was opened for signature at the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro (known by its popular title, the Earth Summit). On 12 June 1992, 154 nations signed the UNFCCC, that upon ratification committed signatories' governments to reduce atmospheric concentrations of greenhouse gases with the goal of "preventing dangerous anthropogenic interference with Earth's climate system". This commitment would require

substantial reductions in greenhouse gas emissions (see the later section, "Stabilization of greenhouse gas concentrations").

C. Convention on the Ban on the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa (Bamako Convention)

The Bamako Convention, adopted under the auspices of the Organization of Africa Unity (OAU), prohibits hazardous waste imports into Africa. It was adopted at the Conference of Environmental Ministers in Bamako, Mali, on 30 January 1991. Only members of the OAU are eligible to become Parties to the Bamako Convention. The Convention includes categories of wastes listed in Annex I. The Convention covers wastes possessing any of the characteristics listed in Annex II, as well as any waste considered hazardous under the domestic laws of the State of import, export, or transit.

D. Montreal Protocol on Substances that Deplete the Ozone Layer

The MONTREAL International Convention on Substances that Deplete the Ozone Layer, signed in LONDON (1990), COPENHAGEN (1992), MONTREAL (1997), BEIJING (1999), especially in its Article 2 of LONDON amendments, and Article 3 of COPENHAGEN, MONTREAL and BEIJING amendments as approved by Presidential Order n° 30/01 of 24 August 2003 related to the membership of Rwanda;

The purpose of The Montreal Protocol is to protect the stratospheric ozone layer. The Protocol has 189 Parties. It came into force in January 1989 to addresses chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform, methyl bromide, and hydrochloroflourocarbons). The Protocol stipulates that the production and consumption of these compounds be phased out and establishes schedules to achieve this goal. The Vienna Convention for the Protection of the Ozone Layer (1985), which outlines States' responsibilities for protecting human health and the environment against the adverse effects of ozone depletion, established the framework under which the Montreal Protocol was negotiated. The Montreal Protocol was amended in 1990, 1992, 1997, and 1999.

E. The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC)

The ROTTERDAM International Convention on the establishment of international procedures agreed by states on commercial transactions of agricultural pesticides and other poisonous products, signed in ROTTERDAM on 11 September 1998 and in New York from 12 November 1998 to 10 September 1999 as approved by Presidential Order n° 28/01 of 24 August 2003 approving the membership of Rwanda;

The Rotterdam Convention or PIC promotes shared information and responsibility in the international trade of certain hazardous chemicals. Under PIC, importing countries should receive shipments of banned or severely restricted substances only after they have had an opportunity to make an informed decision. A total of 39 chemicals currently are subject to the

PIC procedure: 24 pesticides, 11 industrial chemicals and 4 severely hazardous pesticide formulations. The Convention establishes a process for listing new chemicals. PIC has 112 parties, and the Convention entered into force on February 24, 2004.

F. The Stockholm Convention on Persistent Organic Pollutants (POPS)

Under the Stockholm Convention on Persistent Organic Pollutants (POPs), countries commit to reduce and/or eliminate release of the 12 POPs of greatest concern (the "dirty dozen") into the environment. With over 150 signatories, the Treaty came into force on May 17, 2004. A mechanism by which other chemicals may be added is included in the Treaty.

G. The CARTAGENA protocol on Biosafety to the Convention of Biological Biodiversity signed in NAIROBI from May 15, to 26, 2000 and in NEW YORK from June 5, 2000 to June 4, 2001 as authorised to be ratified by Law n° 38/2003 of 29 December 2003;

H. The RAMSAR International Convention of February 2, 1971 on Wetlands of International importance, especially as waterfowl habitats as authorised to be ratified by Law n° 37/2003 of 29 December 2003;

I. The BONN Convention opened for signature on June 23, 1979 on conservation of migratory species of wild animals as authorised to be ratified by Law n° 35/2003 of 29 December 2003;

J. The Washington Agreement of March 3, 1973 on International Trade in endangered species of Wild Flora and Fauna as authorised to be ratified by Presidential Order n° 211 of 25 June 1980;

(3) Laws

A. Organic Law No 04/2005 of 08/04/2005 determining the modalities of protection, conservation and promotion of environment in Rwanda

This is the law that regulates the protection of Environment in Rwanda. The law sets out the general legal framework for environment protection and management in Rwanda. Under the fundamental protection principle (art.7, 2º) the organic law “discourages extravagant financial expenses as well as environmental degradation that may cause severe and irreversible problems. The activities considered or suspected to have negative impacts on environment shall not be implemented even if such impacts have not yet been scientifically proved. Scientific uncertainty must not be taken into consideration for the benefit of the destroyers of environment instead it may be used in conservation of the environment.” It is in this line that 2 institutions were established to implement this law (art.65), namely:

1. The Rwanda Environment Management Authority abbreviated in English as "REMA", a public establishment with legal personality and shall enjoy financial and administrative autonomy;

2. The National Fund for Environment in Rwanda, abbreviated as "FONERWA" in French, which is responsible for soliciting and managing financial resources.

And committees responsible for conservation and protecting the environment at the Provincial, City of Kigali, and District, Town, Municipality, Sector and the Cell levels were also established.

Chapter IV of the Organic Law Article 67 clearly institutes the obligation to subject projects to mandatory Environmental Impact Assessment.

The Article 33 recognizes that some wastes are more dangerous where it is stated that: “Any waste, especially from hospitals, dispensaries and clinics, industries and any other dangerous waste, shall be collected, treated and changed in a manner that does not degrade the environment in order to prevent, eliminate or reduce their adverse effects on human health, natural resources, flora and fauna and on the nature of the environment**”.**

The same law barns some informal wastes treatment and practices in its Article 32 where it states that: “No one is permitted to dispose waste in an inappropriate place, except where it is destroyed from or in a treatment plant and after being approved by competent authorities” in its article 34: “Burying toxic waste is only done when there is an authorization and in accordance with special regulations”

The law also regulates the import of chemicals and puts an emphasis to toxic ones. Furthermore, in its article 24, it prohibits the Burning of garbage, waste or any other object (tyres, plastics, polythene bags and others).

Table 7: Sanctions for Solid and Wastewater Management according to the Organic law on Environmental Protection

Type of violations	*Measures of sanctions*
***Anyone who undertakes illegal research or commercial activities of valuable minerals* (art.101)**	A fine ranging from one million (1,000,000) to two million and five hundred thousand (2,500,000) Rwandan francs and an imprisonment ranging from six (6) months to two (2) years or one of these penalties.
***Anyone who dumps in unaccepted manner or without authorization any waste that is subject to prior authorization provided for by this organic law (*art.102)**	A fine ranging from one million Rwandan francs (1,000,000) to five million (5,000,000) Rwandan francs and an imprisonment ranging from six (6) months to two (2) years or one of these two penalties
Anyone who pollutes inland water masses by dumping, spilling or depositing chemicals of any nature that may cause or increase water pollution	A fine ranging from two million (2,000,000) to five million (5,000,000) Rwandan francs and an imprisonment ranging from two (2) months to two (2)

Type of violations	*Measures of sanctions*
(art.103)	years or one of these penalties
Any treatment plant which is authorized to treat waste products but which dumps it in inappropriate place **(art.105)**	A fine ranging from one million (1,000,000) to ten million (10,000,000) Rwandan francs
Any person who deposits, abandons or dumps waste, materials, or who pours sewage in a public or private place **(art.107)**	A fine ranging from ten thousand (10,000) to one hundred thousand (100,000) Rwandan Francs except if such a place has been designated by competent authorities

Source: *Extracted from Rwandan Organic Law (No. 04/2005) determining the modalities of protection, conservation and promotion of environment*

B. Law N° 63/2013 of 27/08/2013 determining the mission, organization and functioning of Rwanda Environment Management Authority (REMA)

The law establishing REMA, the authority in charge of supervising, monitoring and ensuring that issues relating to environment are integrated in all national development program (art.3) with one of the main mission (art.3, 1º) to implement Government environmental policy; does not speak about waste management clearly. It only talks about the prevention, protection and promotion of the environment in the following terms:

According to this law (art.3), REMA is responsible,… 7°to participate in the preparation of activities strategies designed to prevent risks and other phenomena which may cause environmental degradation and propose remedial measures; 8°to provide, where it is necessary, advice and technical support to individuals or entities engaged in natural resources management and environmental conservation; and .. 2° to advise the Government on policies, strategies and legislation related to the management of the environment as well as the implementation of environment related international conventions, whenever deemed necessary.

C. Law Nº16/2012 of 22/05/2012determining the organization, functioning and mission of the National Fund for Environment (FONERWA)

In its article 2, the main responsibilities :1ºMobilising and managing resources used in activities at protecting environment and natural resources and 3ºto support public organs, associations and individuals aimed at protecting environment, research as well as managing climate change. However, this law does not refer clearly on waste management unless waste management is understood as environment protection. Also, as the activities of waste management should need funds for their execution the other responsibility of FONERWA, stating that (art.2,

2º):"Mobilizing and managing funds to be used in the fight against climate changes and it impacts" does not cover waste management.

D. Law N° 43/2013 of 16/06/2013 governing land in Rwanda

This Law determines (art.1) modalities of allocating, acquisition, transfer, use and management of land in Rwanda. As waste management is dealing with the means for the collection, transport and disposal of hazardous wastes or other wastes, including after-care of disposal sites, expropriation defined (art.2) as "an act of taking away individuals' land by the State due to public interest in circumstances and procedures provided by law and subject to fair and prior compensation"; should be done for the purpose of availing waste disposal sites in environmentally sound manner.

E. Law N°57/2008 of 10/09/2008 relating to the prohibition of manufacturing, importation, use and sale of polythene bags in Rwanda

This law prohibits the manufacturing, usage, importation and sale of polythene in Rwanda. According to this law, any unauthorized person who sells polythene bags shall be punished by a fine ranging from ten thousand (10.000 Rwf) to three hundred thousand (300.000 Rwf) Rwandan francs. Any unauthorized person who uses polythene bags shall be punished by a fine ranging from five thousand (5000 Rwf) to one hundred thousand (100.000 Rwf) Rwandan francs and his/her bags shall be confiscated. All persons mentioned in this Article shall be dispossessed of their Polythene bags and the bags shall be taken to the appropriate stores established by REMA.

(4) Other related-regulations

A. Restrictions on Transboundary Movement

For Restrictions on Transboundary Movement treated in the Basel Convention, the Organic Law N° 04/2005 of 08 April 2005 , determining the modalities of protection, conservation and promotion of environment in Rwanda, contains restrictions related to export for recovery, import for final disposal, import for recover, and for transit. Concerning the restriction on export for final disposal the law is seconded by (1) instruction n° 01/04 of the Rwanda Bureau of Standards related to the issuance of quality certificate for imported goods which enter into force on the 1/12/2004 ; and by (2) Ministerial order n° 005/04/10/MN fixing rules of calculation for entrance rights (Section VI presenting the list of industrial chemical products or related industries admitted to be imported in Rwanda) enter into force on the 25/10/2004

B. Environmental Impact Assessment Regulations

REMA has developed the EIA regulations which provide a guideline and requirements for EIA in Rwanda. Projects with identified adverse impacts on environment call for a full EIA process for mitigation measures and thus the Ministerial Order N°004/2008 of 15/08/2008 establishing the list of works, activities and projects that have to undertake an environmental impact assessment highlights some projects as follows; construction and repair of international and national roads, plants, large bridges, industries, factories, hydro dams and electrical lines, public dams for water conservation, large hotels public building which accommodate more than one hundred daily, extraction of mines and public land fills among others.

C. Ministerial Order N°005/2008 of 15/08/2008 establishing modalities of inspecting companies or activities that pollute the Environment;
According to this ministerial Order (article 2), without prejudice to laws and regulations governing criminal investigations, officers competent to investigate environmental crimes shall conduct an inspection aimed at protecting the environment as provided for in the Articles of the order. And the article 3 stipulates that" The competent officers mentioned in Article 2, may enter and carry out a search in any place suspected to be carrying out activities which pollute the environment."

D. **Ministerial Order N°006/16.01 of 15/07/2010 establishing special regulations relating to burying toxic wastes;**
With the purpose of "determining the modalities of burying toxic wastes (art.1)", this order, in its chapter related to modalities of burrying toxic wastes, specifies about the Application for authorization to burry toxic wastes (art.4), and the Cost of burying toxic wastes (art.5); without giving precisions on burying sites and methodology unless those provided by the burrier (art.4, 10°-12°).

3.5.2. Policy framework

A. Environmental Policy

The overall objective of the *Environmental Policy* is the improvement of population's wellbeing, the judicious utilization of natural resources and the protection and rational management of ecosystems for a sustainable and fair development (MINITERE, 2003). The Policy seeks to achieve this through improved health and quality of life for every citizen and promotion of sustainable socio-economic development through a rational management and utilization of resources and environment, integrating environmental aspects into all the development policies, planning and in all activities carried out at the national, provincial and local level, with the full participation of the population, conservation, preserve and restoration of ecosystems and maintenance of ecological and systems functions, which are life supports, particularly the conservation of national biological diversity, optimum utilization of resources to attain a sustainable level of resources consumption, awareness creation among the public to understand

and appreciate the relationship between environment and development, ensuring participation of individuals and the community in the activities for the improvement of environment with special attention to women and the youth and ensuring the meeting of the basic needs of present population and those of future generations. The Policy recognises the adoption of environmentally friendly technologies and that the technology constitutes high priority for central and local authorities. The Policy also understands the role of private sector and civil society in coordinated and harmonious actions which favour the environment (MINITERE, 2003).

B. National policy on injection safety, Prevention of transmission of nosocomial infections and Healthcare waste management (MINISANTE, May 2009)

The mission of this policy is to improve the health status of the Rwandan population, by protecting it from any disease transmitted by injections, other medical procedures and medical waste, thereby making the population more productive. The overall objective of this policy is to ensure no person is infected as a result of health-care she/he has received. It aims at putting in place mechanisms, systems and practices to prevent transmission of infection through injections and other medical procedures and ensuring that medical waste is disposed of in a safe manner that does not have any risk to Health personnel, patients and the community.

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

As an update of the 2004 WSS Policy, the current policy defines sanitation in a broader sense by including solid waste and storm water management. According to this policy, “today, no national policy or harmonized regulatory framework addresses solid waste management, leaving the task to households, communities, NGOs, the private sector, community associations and district authorities operating with limited technical and financial means. However, Kigali and other towns are undertaking considerable efforts to maintain the urban environment clean and plastic bags are forbidden within the country.

Problems arise at all stages of waste collection and disposal. Kigali’s waste contains still 70% of organic, biodegradable waste and in rural areas this portion of waste may reach more than 95%. However, waste sorting, composting and recycling activities are at the very beginning and until now, Rwanda did not invest in environmentally safe landfills. The only operating dumpsite in Kigali receives about 400 tons per day of solid, not sorted waste or 140’000 tons per year. Deep seated fires, methane explosions, landslides and leachates threatening rivers and groundwater are some of the common problems of such basic dumpsites.

In its Objective 8, Implement integrated solid waste management, the Policy stresses that “Poor management of solid waste from households or businesses can undermine endeavours of

economic development and spread disease and discomfort. Priority shall be given to the minimization of waste and the implementation of an integrated solid waste management in urban areas. Today, a wide array of technologies is available for waste collection, treatment and disposal. However, implementing activities shall be based on concepts, and technologies are to be evaluated within the integrated policy framework in terms of social acceptance and financial and technical feasibility."

D. National Industrial Policy (MINICOM, April 2011)

In its section 4.3.7, about environmental sustainability, the policy stipulates that Economic activities are intrinsically linked with the physical environment. And that Waste management services are part of the key infrastructure required and should be provided for by Government. So that The Rwanda Industrial Policy will enforce the implementation of Rwanda's environmental and policies, such as the requirement for industry relocation from marshland areas.

3.5.3. Institutional framework

The *Institutional Sanitation Framework* is still evolving. The Sanitation Sector is characterized by significant structural changes and reforms, either accomplished in recent years or still on-going. In Rwanda, the Sanitation Sector involves several stakeholders, including government state institutions, NGOs, civil society, the private sector, decentralized entities and donors. Responsibilities of each stakeholder for environmental concerns and sanitation are presented in table 8.

Table 8: Division of responsibilities of stakeholders in sanitation sector

Institutions	*Responsibilities*	*Observations*
MININFRA	Implementation of investment and labour intensive Water and Sanitation projects, funding sanitation projects, prepare, monitor and regulate water quality and hygiene standards, setting policies related to sanitation, water supply, infrastructure, urbanization and settlements, support districts in the construction of water supply systems, latrines and hygiene promotion	**Common responsibilities:** Monitoring and Regulation, Hygiene promotion, Funding, Policy Making, Technical support
MINISANTE	Control and monitor activities of all the hospitals, health services in respecting regulations on hospital and hazards waste management and promote sanitation, healthy standards and regulations for water and sanitation, funding the construction of latrines within the hospital, overseeing the implementation of Environmental health related programmes that mitigate water borne diseases, promoting of hygiene among the population; developing policies, strategies and guidelines for sanitation as well as medical waste disposal and treatment, takes the lead in household sanitation and hygiene promotion	**Common responsibilities:** Hygiene Promotion , Monitoring and Regulation, Funding
MINIRENA	Define the overall Policy of Water and Sanitation, mobilise funds for the Sanitation Sector, provide support to districts in the sector, organise activities of land as well as of WSS, planning of Water and Sanitation projects, funding of Water and Sanitation projects, using governments funds, but also bilateral and multilateral donors funds	**Common responsibilities:** Funding, Policy Making, Land, Technical support
MINALOC	Ensure good governance in all local administration levels including environment governance at local level, playing an intermediary role in channelling funds for development projects, over-seeing various community environment management related programmes: Vision 2020 Umurenge, HIMO, Ubudehe and CDF which involve poor communities to participate in various initiatives aimed at enhancing their income so that they can have access to micro-credit and start income generating activities	**Common responsibilities:** Funding, Governance, Participation
MINICOFIN	Coordinate the National Budgeting, Planning and Financing Framework, including WSS services	**Common responsibilities:**

Institutions	*Responsibilities*	*Observations*
	sector, resource mobilization, and coordination of development partners and allocation of budgets to different Ministries and sectors, overseeing and advising on the formation of various funds (including the Environment Fund), mainstreaming Sanitation concerns in the budgetary DDP processes	Funding**,** Planning
MINIJUST	Develop and advise on formulation of laws and regulations, oversee the formulation and enactment of various laws and regulations including those that are pertinent to the environment and sanitation sector	**Common responsibilities**
MINEDUC	Partner for educational programmes (development of relevant curricula in coordination with MININFRA) and school sanitation programmes, training human resources in the management and protection of environment; funding the construction of schools latrines, oversee the implementation of environmental education programmes in schools (by supporting Environmental Clubs), as well as initiating the process of mainstreaming environment into schools	**Common responsibilities:** Funding**,** Training
REMA	Set up Environment Standards and Regulations (e.g. EIA, etc.), monitor and comply with environmental awareness, leading role in enforcement of environmental regulations and awareness promotion campaigns about domestic and industrial solid waste management, act as the implementation organ of environment-related policies and laws, coordinates different environmental protection activities undertaken by environmental promotion agencies as well as supporting local levels in the sector of environment	**Common responsibilities:** Monitoring and Regulation**,** Implementation**,** Technical support
RURA	Ensure that basic services including Water and Sanitation are provided according to the required standards and that there is good conditions for fair completion in provision of those public services (i.e. water and sanitation)	**Common responsibilities:** Monitoring and Regulation
REG & WASAC	Water production and distribution in countrywide; responsible for urban sewerage systems and sludge emptying services, coordination of all activities related to the programmes aimed at development of water and	**Common responsibilities:** Distribution, Funding

Institutions	*Responsibilities*	*Observations*
	sanitation, sensitization of users of water in any way possible, as well as sanitation infrastructure, proper management of water and sanitation, funding the construction of sanitation and water facilities, waste management	
National Land Centre	Land Administration and Management both at the National and Decentralised level and support the local level in the sector of land	**Common responsibilities:** Land, Technical Support
Rwanda Bureau of Standards (RSB)	Participate in inspection of Sanitation systems of hotels and other businesses along with MINISANTE and the City of Kigali	**Common responsibilities:** Inspection (monitoring) of sanitation services
Kigali Council, Districts (Nyarugenge, Gasabo and Kicukiro)	Execute and implement the state regulations on environmental protection at local (City) level, participate in inspection of sanitation systems, hygiene for hotels and in Policy Making process, land and environmental management, urban planning, sanitation plants maintenance, providing drinking water, sanitation, and waste treatment and disposal, mobilise funds (e.g. tax collection as stipulated by law and decentralisation policy), prepare budgets and projects including those related to environment and sanitation, implement government policies and specific projects and participate in policy making process	**Common responsibilities:** Implementation, Inspection, Funding
NGOs and International Organisation (BAD,WB,EU, UNHabitat, WHO, etc.)	Provide Water and Sanitation facilities, especially to the poor, provide technical support, advice in policy making in this sector of sanitation	**Common responsibilities:** Funding, Policy Making, Technical Support
PRIVATE COMPANIES	Waste collection, recycling and management	

Source: *Author, compiled from different documents related to Environment and Sanitation, 2011.*

Rwanda participates in the initiative on illegal traffic Basel, Stockholm and Rotterdam Conventions and the Montreal Protocol, in the past years as mentioned in the introduction.

A part from these international commitments, the country has set laws and policies to tackle the illegal international traffic in hazardous and other wastes such as

- "*Instruction du Ministre de la Santé no 20/12 du 18/02/2006 déterminant les conditions et modalités applicables aux dons de produits pharmaceutiques au Rwanda*" which states that the donated pharmaceutical products must have at least the shelf life of at least two years and always MINASANTE has to be informed.

- The Ministerial Order No: 1 of 25/10/2011 regarding the importation of used electronics/ICT equipment. It states that used electronics are banned for importation. However if the imported computers are for education purposes they will be allowed and shall meet the provision of article 8, of the Ministerial Order which states that used computers imported for education purposes:
  - Shall be less than or equal to two (2) years old if it has been in use, and in good working conditions.
  - Shall be less than four(4) years old if it has never been in use
  - Shall have a documented commitment of the donor/ supplier that the goods supplied are in good working conditions and meet the requirements of instructions.

- Refurbished computers shall meet the provision of article 11, in order to comply by ISO/IEC 24700,
-RAM, hard disk, microprocessors are allowed to be imported for commercial purposes provided that the importer intention is not for computer assembling. But they have to comply with the safety standards (EAS390:2005, ISO/IEC 24700) and must come with other documents mentioned in the ministerial order.
- All computers shall be in compliance with EAS 390:2005

In addition RBS has developed a good number of standards available on http://www.rwanda-standards.org/~RSB/main-nav/standards.html that show the quality of goods and other products circulating on Rwanda market have to fulfill.
The developed standards are also published in World Standard Harmonization (WSH) and as required by WSH, RSB updates its publication after six months.

Furthermore RBS has developed a list of prohibited and restricted imports available on http://www.rwanda-standards.org/~RSB/main-nav/quality-assurance/prohibited-and-restricted-goods.html. The same website bears the list of prohibited and restricted exports. Some of these products are also available on RRA website http://www.rra.gov.rw/rra_article295.html as the two institution works hand in hand

The RBS website also has a list of regulated imports and requirements summarized in the table below:

Table 9: List of regulated imports and requirements

N⁰	*Products / commodity*	*Requirements*	*Law / Regulation*
1	Non refined Palm Oil (amamesa)	– Purchase Order from soap making factory – Official Authorization by RSB – Transported in tanks/jerrycans or drums	Regulation from RSB DG lette r, reference 502/RSB/DG/12 of 27/04/2012
2	Used electronics	– Used electronics are banned f or importation into Rwanda	
		–	The Ministerial Order No:1 of 25/10/2011
		– Used computers imported for education	related to importation of used
		– purposes shall meet the provis ion of article	electronics/ICT equipment
		– Ministerial Order No 1 of 25/10/2011	
		– Refurbished computers sh all meet the provision of article 11, in orde r to comply by ISO/IEC 24700,	
		– All computers shall be in com pliance with EAS 390:2005	
3	Pesticides, Fertilizers an d animal medicines	– Importation License fro m Rwanda Agriculture Board (RAB)	Law N° 30/2012 Of 01/08/23012 on governing of agrochemicals
		– Available on list of accepted p esticides	**N° 30/2012 of 01/08/23012**
		– Certificate of Analysis	Law governing agrochemicals. **N° 30/2012 du 01/08/23012** Loi portant utilisation des Produits agrochimiques.
4	Human medicines	– Importation License from Min istry of Health	Law No 12/99 of 02/07/1999 a nd Ministerial instruction No 20/12 of 18/02/06
		– Batch Certificate	
		– Packing list	
5	Condoms	– Batch Certification by Rwand a Bureau of Standards (RSB) materials	

N⁰	*Products / commodity*	*Requirements*	*Law / Regulation*
		laboratory/mandatory testing before distribution	
		– Importation License from Ministry of Health	
6	Alcoholic drinks	– They shall meet the labeling requirements	
		– Any drink that exceeds forty five per cent (45%) of alcohol and any other drink which does not have the required quality for consumption shall be considered as Narcotic drug.	Law N°03/2012 of 15/02/2012 governing narcotic drugs, psychotropic substances and precursors in Rwanda **(article 24)**
		– Alcohol content on label is mandatory	Law N°03/2012 of 15/02/2012 governing narcotic drugs, psychotropic substances and precursors in Rwanda
		– Certificate of Analysis	Law N°03/2012 of 15/02/2012 governing narcotic drugs, psychotropic substances and precursors in Rwanda
7	Used clothes	– Fumigation Certificate	RSB Official Communiqué 030/RSB/DG/11 of 12/01/2011 banning sell and importation
		– Packing list,	into Rwanda of used undergarments and night wears
		– Used underwear not allowed to be imported into Rwanda.	
8	Ethanol spirit	– **A. Imported for medical and cleaning**	Official Communiqué published in Imvaho

Actions in country borders are systematically in place and missions of inspection are regularly jointly conducted with staff from RSB, RAB/MINAGRI, RRA/ and Police (National and Local Level) working together.

To implement its standards, national policies, laws and international requirements that the country has signed, RSB conducts the visual inspection and/or physical chemical tests for any suspect products using its testing laboratories. If any imported product fails to meet the standards, RSB requires the importers to re-export the goods following the procedure of Rwanda Revenue Authority for re-export. The RSB officer at the nearest inspection station is invited to witness the loading and sealing of the container and issues the owner of the goods with a copy

bearing a seal number to be filed. After the vehicle transporting re-exported products crosses the Rwanda border, the client provides to RSB with copies bearing a stamp of custom's respective border.

Apart from the re-exportation, the importer can also opt to destroy the goods. In that case the clients

- Consult Rwanda Environmental Management Authority (REMA) to confirm whether the products can be allowed to be destroyed/incinerated in Rwanda.
- Consult Kigali City Council to provide landfill in case of destruction but in case of incineration, hospitals such as Kanombe Military Hospital or any other hospital are consulted.
- Consult Rwanda Revenue authority and pay implicated taxes.
- Consult Rwanda National Police for the purpose of ensuring security and safety of people during the process of destruction.
- Invite the Rwanda Standards Board on the date and time of witnessing the execution of the decision made.

RSB also has started a new system of inspecting the goods in the export country. This is the case of SGS, a Chinese Company that inspects Chinese goods to be exported to Rwanda.

3.5.4. Identified gaps and proposed solutions

Table 10: Gaps identified and suggestions

GAPS	*SUGGESTIONS*
Lack of institutional framework for waste management in visited institutions specifically and generally in the waste disposal (burying or other appropriate disposals)	To set up waste management framework for each institution
No specific law for waste management in general	To draft a bill for waste management
No certificates of analysis for some imports	To strengthen the imports process monitoring throughout all the supply chain
Limited knowledge in standardization	To increase knowledge and skills of the key persons in charge of waste management
Lack of labelling and miss labelling of some products	Training the staff and monitoring the supply chain
Non conformity of certificate of analysis with product labelling	Training the staff and monitoring the supply chain
Product labelled in unofficial language	Training the staff and monitoring the supply chain

3.5.5. Links of the Basel convention with some protocol or convention signed by the country

The Basel Convention has several links to other Multilateral Environmental Agreements. For example, in the Montreal Protocol it is mentioned in the following decisions:

- Recovery, recycling and reclamation (Decision IV/24)
- Trade in controlled substances and the Basel Convention (Decision V/24)
- Status of recycled CFCs and halons under the Basel Convention (Decision VII/31)
- Destruction technologies and procedures (Decisions I/12F, II/11, III/10, IV/11, V/26, VII/35, XIV/6)
- Disposal of controlled substances (Decision XII/8).

There are some similarities between the Non-Compliance Procedures of the Montreal Protocol and the mechanism for promoting implementation and compliance of the Basel Convention, in the work to prevent illegal trade and in the relationship with WTO. With the Rotterdam Convention, the obligations in relation to imports and exports of chemicals listed in Annex III are very close to Basel Convention obligations. Similarly, Article 6 of the Stockholm Convention on measures to reduce or eliminate releases from stockpiles and wastes, in the identification of stockpiles, management of stockpiles and wastes in an environmentally sound manner and the disposal of in such a way that the POP content is destroyed or irreversibly transformed. No transport of POPs waste across international boundaries shall take place without taking into account the Basel Convention. The Stockholm Convention requested the Conference of the Parties to cooperate closely with the appropriate bodies of the Basel Convention on the level of destruction and irreversible transformation, on methods that constitute environmentally sound management (ESM) and on the levels of POPs that are considered low.

The Basel Convention plays a decisive role in achieving the Millennium Development Goals (MDGs) - poverty reduction, reducing child mortality, improving maternal health, ensure environmental sustainability. In addition, state-of-the art recycling in accordance with agreed standards could create business opportunities and safe jobs; a higher yield of secondary raw materials; conservation of precious resources through extraction and re-use rather than primary mining; and better protection of the air, soil, water and thus human health.

Exceptions to Basel convention

The provisions of Convention does not affect transboundary movements which take place pursuant to bilateral, multilateral or regional agreements, provided that such agreements are compatible with the environmentally sound management of hazardous wastes and other wastes as required by this Convention (Article 11, paragraph 2). For example a Party to the Bamako Convention may export hazardous waste to another African nation that is a Party to the Bamako Convention if that country agrees to accept the waste and has technology and capacity to treat or

dispose of the waste in an environmentally sound manner. The country of export must demonstrate that it does not have such capacity to treat the waste.

3.6. Sectoral strategies and plans impacting on hazardous wastes and waste management

The following sectors will develop Sector Strategies in line with "Environment and Natural Resources" which is more related to waste management in EDPRS 2 and DDPs: (1) Agriculture, (2) Private sector Development, (3) Transport, (4) Energy, (5) Water and Sanitation, (6) Urbanization, (7) Information Communication Technology, (8) Environment and Natural Resources, (9) Youth, (10) Social Protection, (11) Health, (12) Education, (13) Decentralization, (14) Justice, Reconciliation, Law and Order, (15) Public Finance Management, and (16) Financial Sector Development.

- **EDPRS II**

The Second Economic Development and Poverty Reduction Strategy (EDPRS 2) has been launched from our "Vision 2020"[1]. Its main objective is to devise Rwanda's medium-term strategy in order to put Rwanda on a higher growth trajectory to ensure that the country achieves middle-income status by 2020[2]. EDPRS 2 (2013 – 2018) focuses on [3]: (1) Rapid growth targeted 11.5%; (2) Fast poverty reduction (15% points) to less than 30%; (3) Close trade balance with rapid growth of exports (28%); and (4) Increased private sector investment.
EDPRS 2 is built on 4 Thematic Areas which are Economic Transformation, Rural Development, Productivity and Youth Employment, and Accountable Governance with cross cutting issues that are (1)Capacity building, (2)Environment and climate change, (3)Gender and family, (4)Regional integration, (5)HIV/AIDS and NCDs, (6)Disaster management, and (7)Disability & Social Inclusion.

The main objective of the **Economic Transformation thematic area** is to propose an ambitious, prioritized and coherent cross-sectoral strategy to sustain rapid growth and facilitate Rwanda's process of economic transformation to meet Vision 2020 revised targets. This strategy builds on a decade of sustained rapid economic growth and evidence of incipient Economic Transformation in Rwanda's economy. It is a process that encompasses all the main sectors of the economy – private sector, agriculture, energy, transport, finance, urbanization, the environment and natural resources. **On Environment and climate change,** EDPRS 2 states that

[1] **Vision 2020** is a Government development program in Rwanda, launched in 2000 by Rwandan president Paul Kagame. Its main objective is transforming the country into a knowledge-based middle-income country, thereby reducing poverty, health problems and making the nation united and democratic.

[2] http://www.edprs.rw/content/edprs-2, accessed on August 15, 2014

[3] http://www.minecofin.gov.rw/fileadmin/General/EDPRS_2/Summary_Presentation_of_EDPRS2.pdf

major areas of attention will be mainstreaming environmental sustainability into productive and social sectors and reducing vulnerability to climate change, ecosystem protection and rehabilitation

- **Environment in EDPRS II**

Environment and Climate Change

Rwanda's economy is heavily dependent on its environment and natural resources and the livelihoods of rural (and increasingly urban) communities depend on access, use and management of such resources. Without sound environmental management, development activities in key sectors such as agriculture, industry, infrastructure, commerce, and energy can lead to significant environmental degradation that can undermine economic growth. Economic impacts are likely to be exacerbated by climate change, which through increased floods, landslides and droughts, is likely to increase damage to infrastructure and property. Research has estimated that climate change could result in additional net economic costs (on top of existing climate variability) for Rwanda that are at least equivalent to a loss of almost 1% of GDP each year by 2030.

Achieving sustainable economic growth in Rwanda will require the prudent use of natural resources and ensuring that climate resilience is built into economic planning. Mainstreaming environmental sustainability provides an opportunity for improved and sustained livelihoods of present and future generations of Rwandans.

The GoR has made significant progress towards mainstreaming environmental sustainability, for example through the Budget Call circular that has included environment and climate change mainstreaming guidelines for sectors, the increasing use of strategic environmental assessment, and successful pilots of rural 'climate proofed' settlement development. However, there is need for improvement, particularly in terms of the capacity to implement and enforce environmental policy, and to foster in complex, cross-cutting environment and climate change issues into strategic planning.

The national Green Growth and Climate Resilience Strategy, approved by Cabinet and developed with various sectors, promotes cross sector interventions to mainstream environment and climate change while addressing national priorities. The strategy is supported by a fund for environment and climate change (FONERWA) to facilitate access to sustainable financing and support implementation. The EDPRS 2 considers these strategic tools as entry points for guiding specific interventions within national sector strategic plans and their implementation. Attention is also placed on robust monitoring and evaluation systems, such as the green accounting framework, which will be essential in ensuring more effective policy implementation and to demonstrate the economic benefits of environmental protection.

Priority areas for environment and climate change as cross cutting issues are (i) mainstreaming environmental sustainability into productive and social sectors; (ii) reducing vulnerability to climate change and (iii) preventing and controlling pollution. Key sectors expected to deliver on these include agriculture, energy, environment and natural resources, infrastructure, health, private sector and financial sector.

- **Waste management in EDPRS II**

EDPRS II in its Priority Area 5: Pursue a 'green economy' approach to economic transformation with Outcome 5.1: Increased level of "green" investment and environmentally sustainable urban development that exploits 'green' economic opportunities

Rapid urbanization will occur in Rwanda in the next five years, with 35% of the population envisaged to live in urban areas by 2020. This is likely to have huge economic and environmental impacts, through increased pressure on urban infrastructure, such as transport and ***solid and liquid waste management systems***. This could push up costs but it also represents an opportunity to transform urban development and the urban economy. The National Land-use Master Plan, the Kigali City Master Plan, the plans for secondary cities and the District Development Plans provide a timely opportunity to promote some of these ideas through the planning system. New global funds also exist that could help to support the development of such approaches in Rwanda.

- **DDPs**

Guidelines for development of district development plans in the context of EDPRS 2 elaboration, are available at http://www.ngororero.gov.rw/uploads/media/Guidelines_for_DDPs_in_EDPRS_2.pdf, In line with Vision 2020 objective of transforming Rwanda into a middle income country by 2020, the overall objective of EDPRS 2 is to increase the quality of life of all Rwandans through rapid and sustainable economic growth (11.5% per annum) and accelerated poverty reduction (to below 30%).

To meet these objectives, EDPRS 2 will be developed around four strategic thematic areas (Economic Transformation, Rural Development, Productivity and Youth Employment, and Accountable Governance), which will drive rapid and sustainable economic growth, as well as fast poverty reduction. EDPRS 2 will be implemented through a set of District and Sector Strategies, which will be fully aligned to the priorities and themes of EDPRS 2. District and Sector Strategies will mainstream key cross-cutting issues and will contribute to the achievement of the objectives outlined under the four thematic areas. According to the foresaid guidelines, All

DDPs are expected to reflect the following 5 guiding principles, both in development and content.

- ✓ **Innovation:** EDPRS 2 aims at being the engine that will drive Rwanda to achieve growth of 11.5% per annum and to reach the status of a middle-income country. This cannot be achieved only by continuing strong performance or improving performance in existing strategies. EDPRS 2 therefore places strong importance on innovation, and new initiatives and implementation strategies to achieve Rwanda's ambitious development goals.

- ✓ **Strong focus on emerging priorities:** EDPRS 2 will recognize the achievements that Rwanda has made in its development during EDPRS 1 and place an increased focus on new emerging priorities and challenges that need to be addressed to ensure Rwanda is on track to achieve Vision 2020 targets. These will be captured through the four proposed thematic areas. The focus on thematic areas will not, however, diminish the need for strong continued performance in foundational sectors, such as education and health, which made significant strides during EDPRS 1.

- ✓ **Inclusiveness and engagement:** The EDPRS elaboration process has been designed to promote ownership at all levels of government and intentionally create feedback mechanisms.

- ✓ **District led Development:** EDPRS II recognizes the need for differentiated development strategies at the district level. High emphasis will therefore be placed on ensuring strong linkages between EDPRS 2, Sector Strategic Plans (SSPs) and District Development Plans (DDPs).

- ✓ **Sustainability:** EDPRS 2 interventions will aim at sustainability and all sectors and districts will be asked to ensure that programs of EDPRS 2 deliver long lasting and sustainable outcomes.

3.7. Incentives or disincentives measures with respect to waste management and sustainable use.

Waste management can be well achieved by setting up certain measures (incentives and disincentices) aimed at stimulating or discouraging cooperatives, companies or people working in waste management sector. Incentives are considered as something or a measure that encourages people to do something with the aim of getting a profit or a reward. A disincentive is something or a measure that prevents or discourages action in regards with waste management practices.

Table 11: Incentives with respect to waste management and sustainable use.

Incentives measures with respect to waste management and sustainable use.	Disincentives measures with respect to waste management and sustainable use.
Generator Incentives Residential: Pay-As-You-Throw. One of the best examples of an incentive that can have a major impact on decreasing wastes. Commercial Incentives. The larger the costs for waste collection and disposal, the higher the interest level for businesses in waste prevention, reuse, recycling, and composting. This is particularly true if the businesses can benefit from recycling by decreasing their waste collection and disposal services, both in number and size of bins and decreasing the frequency of pickups. Free collection of recyclable materials: Recycle materials should be collected freely in order to encourage people to buy or produce recyclable wastes. Revenue Sharing: Industries should recover their products' covers with a fee paid to the customer returning the cover.	Penalties for Nonperformance. Penalties for nonperformance as "liquidated damages" should become more popular in solid waste and recycling contracts. Contract Clauses. Conditions could be included in long-term agreements for these facilities, such as: Disposal. Commit industries to a total capacity recovering of their product' wastes. This enables the community to benefit directly by extending the life of the landfill, if it reduces the amount of wastes it brings to the facility. Preprocessing. Require that all wastes be processed for reuse, recycling, and/or composting before land filling. This is particularly important for the larger, more distant "mega-landfills" increasingly being developed by the larger garbage companies. Source separation. Require that targeted materials be source-separated before accepting at facilities.

Table 12: Challenges to waste management and sustainable use

CHALLENGES	*IMPLICATION / DESCRIPTION*
Lack of records on wastes	Companies that are involved in wastes managements are not keeping the records and this is not facilitating both researchers and investors.
Wastes not being viewed as "Resources"	Public information campaigns need to encourage turning what used to be considered as **"waste"** into **"resources."** In few years if you have been told that metals scraps could be recycled to generate iron bar, you could not accept!
Wastes sorting is not yet a culture	Resources can be recovered from waste if they are separated at the source of generation, and are treated properly
Costs of wastes managements projects	Wastes managements especially wastes recycling is very expensive, as it requires higher technology and skilled human resources. This is limiting private operators to invest in.
Lack of local experts in waste management	Even if Rwanda has made a tremendous progress in environmental management, the country still lacks technicians in some environmental or related fields.
Rapid increase in volumes and changing characteristics of municipal solid	There is an overall correlation between the generation of MSW, wealth (Gross Domestic Product, GDP per capita) and urbanization The types of MSW produced change according to the standards of living in the City. Wastes generated in Kigali and other cities are totally different. The wastes in provinces have a large proportion of organic waste, whereas the wastes in Kigali City are more diversified with relatively larger shares of plastics and paper. In addition Electrical and electronic wastes (e-waste) are rapidly growing especially in Kigali City. Other types of waste streams of concern in the context of an urban lifestyle and somehow specific to Kigali City are construction and demolition waste and end-of-life vehicles.

3.8. National priorities and targets with reference to strategic plan for the implementation of the Basel convention for the period 2014 – 2021.

Wastes management has been considered by the Government of Rwanda particularly after the 1994 Tutsi genocide. In that regards laws, policies, plans, strategies and conventions were put in place or signed and made open to the public. However, an effective implementation of the Basel convention still needs too much improvement as currently there are no supporting documents, wastes database and framework toward a sustainable implementation of the Basel convention as noted during the field visits. The table below shows the priorities in their respective order that need to be addressed in order to meet the requirement of the strategic plan of COP10.

Table 13: Country priorities

Priority order	*Priorities*	*Responsible Institution*	*Priority achievement Methodology*	*Output*	*Budget*	*Time frame*
1	To conduct an inventory of all hazardous wastes and other wastes in Rwanda	MINIRENA, MININFRA, MOH, MINAGRI, MINICOM, MUNICIPALITIES, REMA, RNRA, PSF	Stakeholders consultations, data collection	All hazardous and other wastes inventoried in Rwanda	75,000,000	2015
2	Set a National Definition of hazardous waste	MINAGRI, MINISANTE (MOH), UR, MINIRENA, REMA, RSB, RAB, RNP, RRA, MINIJUST	Seminar sessions	A clear definition distinguishing hazardous wastes from other wastes	15,000,000	2014
3	Setup a control system of transboundary boundary movement of wastes required by Basel convention	MINAGRI, MINISANTE (MOH), UR, MINIRENA, REMA, RSB, RAB, RNP, RRA, MINIJUST	Seminar sessions	A control procedure in agreement with Basel Convention showing: who is responsible to notify, • documentation and general notification process , • contact between the exporter and disposer, • insurers/financial guarantees, • international transport rules and regulations, and • Environmentally sound management.	25,000,000	2014 – 2021
4	Set up an institutional framework to combat illegal traffic of wastes	UR, MINIRENA, REMA, RSB, RAB, RNP, RRA, MINIJUST, MINALOC, MININFRA	Seminar sessions	An operational institutional framework showing the responsibility of each stakeholder in illegal traffic combat	80,000,000	2014 – 2021
5	Training of involved	MINIRENA, REMA, RSB,	Training session with developed	Key stakeholders in illegal traffic	90,000,000	2014 – 2021

Priority order	*Priorities*	*Responsible Institution*	*Priority achievement Methodology*	*Output*	*Budget*	*Time frame*
	stakeholders in both control system implementation and illegal traffic detection	RAB,RNP, RRA, MINIJUST, MINALOC, MININFRA, secretariat of Basel convention	trainer and trainees materials.	prevention and control: REMA, RSB, RRA, RNP, RAB will be equipped with sufficient knowledge on documents utilization, types of illegal traffics and how there are done, strategies to stop the illegal traffic		
6	Set up national policy for wastes management	MINIRENA, REMA, RSB, RAB, RNP, RRA, MINIJUST, MINALOC, MININFRA, MINISANTE, UR, REG & WASAC	seminar sessions	A policy that views the waste management as essential to reducing its environmental footprint and to providing a safe and healthy environment to Rwandans. The aim of the policy should include : Reduce waste generation, wastes sorting, re-use, recycling, risk minimization, minimum wastes to landfill	55,000,000	2014-2016
7	Set up wastes data acquisition system	RAB, REMA, RSB, RAB,RNP, RRA	Buying a software and training on data collection, entry and analysis	Availability of data to the focal point at the right time with the right quality	100,000,000	2014-2021
8	Set up an education or a sensitization mechanism	MINEDUC, MINIRENA, REMA, RSB, RAB, RNP, UR, RRA, MINIJUST, MINALOC, MININFRA, PSF	Use the media, websites, trainings, e-mails etc.	Awareness to key stakeholders	45,000,000	2014-2021
9	Set up a national wastes sorting guideline	MINIRENA, REMA, RSB, RAB, RNP, RRA, MINIJUST,	Seminar sessions	-This will allow waste management to be done in environmentally	60,000,000	2014-2016

Priority order	*Priorities*	*Responsible Institution*	*Priority achievement Methodology*	*Output*	*Budget*	*Time frame*
		MINALOC, MININFRA, UR		sound manner -Private investors will be encouraged -Human risks will be reduced		
10	Regroup the E-equipment repairs in one place and construct an appropriate e-waste storage system	MINALOC, MINIRENA, REMA, MININFRA, MINICOM	Sensitization, Waste storage construction	This will make the monitoring of e-wastes mass stream easily	300,000,000	2014-2016
11	Link the wastes recycler and re-users with the wastes generator	REMA, PSF, Recyclers, Re-users	Exhibition Sales	Wastes generator will know where they can send their wastes	40,000,000	2014-2016
12	Characterize the wastes generated	REMA , Waste generator, wastes re-users and Recyclers	Do laboratory tests	Baseline that will facilitate the selection of an appropriate technology	75,000,000	2014-2016
General total					**960,000,000**	**2014 – 2021**

➢ **Future scenarios**

- **Make an inventory of hazardous wastes**

In Rwanda, we do not know accurately the quantities of hazardous wastes generated or imported in the country and what kind of management should be applied to them. Such information, however, is important for regulating, planning, devising priorities and controlling the management of wastes and particularly the management of hazardous wastes.

The lack of precise and detailed information is a constraint to awareness on the part of political and administrative authorities. This inventory should focus but not limited to the expired chemicals from different institutions, the expired e-equipment, quantity of wastes from painting industry and radiographic and dental department of hospitals. This inventory should also be coupled with the establishment of hazardous wastes data collection channel and the appointment of waste data manager.

- **Safe handling of hazardous waste**

Except in health sector where educational trainings towards the safe handling of hazardous health care waste are being done, for other sectors there are no guidelines for the handling of hazardous waste. This should be an obligation for the institutions that are generating the hazardous wastes and the guideline should cover the entire process of the institution including the disposal of the wastes.

- **Construct and operate treatment facilities**

Currently many efforts are being made and wastes treatment facilities are being constructed in some institutions. However there are many institutions that have wastes treatment facilities and others that don't have while they are producing wastes including hazardous wastes. These include for example the paints processing plants, Hospitals, higher learning institutions, food industries etc.

CHAPTER 4: STRATEGIC PLAN FOR THE IMPLEMENTATION OF THE BASEL CONVENTION (2014-2021)

The present document will guide the country in the implementation of a new strategic framework for the period 2012 to 2021 adopted by the Conference of Parties in October 2012 (COP 10). The strategic framework defines the fundamental aims and priorities of the Convention for the relevant decade while taking into account changes that have occurred since its adoption. Rwanda as the country that is at the starting point of the BC implementation has to furnish considerable efforts in order to match the goals of the 2012 to 2021 strategic plan. The following are the steps to be covered prior or in conjunction with the 2012-2021 strategic plan implementation.

4.1. Steps in Basel convention implementation

The implementation of the BC should follow well defined steps. In the elaboration of these steps, emphasis was given to the steps that are particularly important and in relation to resource mobilisation to implement the strategic plan.

4.1.1. Step I: National Working Group

Given the large spectrum of the wastes covered by the BC, a national multi-stakeholder co-ordinating mechanism or Working Group for the purpose of dealing systematically with the implementation of the Basel Convention, including financial resource mobilisation should be established. This National Working Group would combine expertise on technical, financial and administrative aspects of waste management. The national Basel Convention focal point could head the Working Group or equivalent body. It is important that the Working Group be composed of representatives from ministries and/or institutions and stakeholders involved in the management of hazardous and other wastes.

4.1.2. Step 2: Baseline

During the Stocktaking phase of this assignment, a qualitative assessment was done and some quantitative pictures regarding the country wastes were taken. However, the most fundamental element of the baseline is a detailed national waste inventory, including waste audits. This activity should be combined with the establishment of the data acquisition and transmission system covering the whole country with the objectives of conveying regularly wastes' data to the focal point.

4.1.3. Step 3: Waste Management Options

During the stocktaking phase some management techniques were noted. However further details were found to be necessary. The required technology in each of the relevant areas concerned, waste management options to address the issues identified and related to the national situation should be adopted. In this area, the Basel Convention secretariat, UNEP, FAO, OECD and other organisations have compiled information and technical guidelines that make up a useful basis for identifying waste management options. Examples of the Basel Convention guidelines are the Technical Guidelines on the Identification and Management of Used Tyres (1999) and the Instruction Manual for Control System for Trans-boundary Movements of Hazardous Wastes and other Wastes (1998). Once identified, the costs of implementing the activities related to the options considered should be assessed at a level of details that would allow preliminary considerations of priorities and the needs for resource mobilisation.

4.1.4. Step 4: Funding Possibilities

Even if the financial support and in-kind assistance are sometimes availed by the Basel Convention secretariat, these funds are far from sufficient to allow the country to take adequate actions to meet the objectives of the Convention. Funding must therefore be obtained from other sources. The funds from the BC secretariat may primarily be used for capacity building, development of guidance and implementation tools, information dissemination, awareness-raising and education.

A) Resource mobilization strategy for the implementation of the strategic plan for the implementation of the Basel Convention

The budget of Rwanda comes from the collected revenues through taxes paid by individuals and companies. The government receives grants and loans to supplement its domestic revenues. However, Rwanda is committed to progressively increase the share of domestic revenue financing of the budget with view to become self-reliant in the future.

A-1) Possible sources of funds for the BC implementation in Rwanda

a) Rwanda Environmental Fund (FONERWA)

Like some other countries, Rwanda established the environmental fund known as FONERWA. This fund provides funding in the form of grants and/or loans, to both private sector and public institutions including government bodies. In FONERWA financing is usually allocated on the basis of certain overall priorities and on the quality of the application for funds. Proposals writing should be one of the strategies that the focal point (REMA) can use to secure some money from FONERWA.

b) Financing by wastes generators

As the funds secured from FONERWA will be limited and cannot cover all the financing needs for the BC implementation, other National sources of finance are therefore needed. Financing by wastes generators may either come from wastes generator charge payments or wastes generator self-financing. For example, penalties paid by people no complying with the environmental laws.

The law favours the environment management but its full implementation is a problem especially as far as penalties are concerned.
Wastes generator charges can be a source of financing to sustain the provision of certain waste management services such as waste inventory, wastes collection and sometimes treatment or other services linked to wastes management. Wastes generators self-financing describes the situation where generators of waste (e.g. large industrial companies) invest in and operate their own recycling systems, treatment facilities, etc. This can be facilitated by the incorporation of the wastes management policy in each institution organigram.

c) Public Budgets

Some of funds may come from public budgets at various government levels. This may be central government, province or district. Public budgets will provide two relevant types of funding:

- Funding of the operating costs of running the administrative apparatus (ministries, etc.);
- Subsidies for operation and maintenance of services systems made available to the public;

Funding of activities from the public budget to the Basel Convention activities will be agreed upon in annual consultation and negotiation processes between line ministries such as the MoH and MINIRENA and MINECOFIN.

A-2) International funding sources in overview

As the budget of Rwanda has two main sources which are taxes paid by individuals or companies and grants and loans from the international bilateral, multilateral and NGOs, REMA through the MINIRENA will also consider the international funding sources.
International sources of funding may be divided into the following main groups based on their different sources of capital and different types of financing provided:

- Financial Mechanisms of the Basel Convention;
- Multilateral grant donors;
- Bilateral grant donors and lending facilities;
- International NGOs.

With regard to international funding agencies, informal contacts should be made at this point in order to investigate funding prospects, either to the local representation of the agencies concerned, if such exist, or to the agencies' headquarters. If assistance is possible and realistic, information on the correct points of contacts and procedures for applying for assistance should be obtained. This should be led by the Ministry of foreigner affaires and the Ministry of natural Resources. In the next paragraphs the potential international organization financing the BC project are described

a) Bilateral Grant Donors and Lending Facilities

A number of countries are engaged in development assistance. They apply a variety of modalities for providing bilateral assistance to developing and transition countries.
Most of developed countries have established national aid agencies, usually under the Ministry of Foreign Affairs or a similar ministry. The majority of countries provide assistance to environmental programmes or projects in general, but some specifically to the waste sector. Some exemples are listed below:

b) Multilateral Grant Donors

These organizations mainly include UN organizations providing grant funds. Generally, these organizations are established to deal with specific issues with global implications such as environmental issues, health, agriculture, etc. They often have multiple functions related to the particular issue covered of which support for projects in developing/transition countries is just one. The resources for the grants provided are made up of donations from various governments and are often quite scarce. Most often the type of support provided is technical assistance such as capacity building, training, information dissemination, etc.
Criteria: The multilateral donors have various criteria for support, which are often linked to strategic concerns and the prospects of being able to (i) replicate projects in several countries and (ii) financial sustainability of the projects since the funds are limited. The most important in relation to support for actions related to waste management are described below.

c) International NGOs.

Since the amount of money from the country budget for wastes managements including the implementation of conventions Rwanda has signed may not be sufficient vis-à-vis the environmental needs of the country, proposal grants writing is important for grant-making in order to achieve some country goals. The followings are international organizations that fund the projects in the framework of the Basel convention.

Table 14: Possible Funding Sources for Main Waste Management Actions to Implement the Basel Convention

Type of Action	Most Relevant Funding Sources
Implementation of waste management	
Establishment of institutional and administrative frameworks and capacity for implementation of national legislation	National public budgets Multilateral grant donors Bilateral grant donors Basel Convention funds
Reduction of transboundary movements of hazardous wastes, including adherence to the control system	National public budgets Company self-financing (Multilateral grant donors) (Bilateral grant donors) (Basel Convention funds)
Promotion of cleaner technologies	Basel Convention funds FONERWA National public budgets Industry / trade organisations Multilateral grant donors Bilateral grant donors Environmental NGOs
Introduction of cleaner technologies to minimize generation of hazardous wastes and other wastes	Company self-financing International development banks and funds Bilateral lending agencies Commercial banks National environmental funds
Information, education and awareness-raising in support of waste minimization and waste environmentally sound management	Basel Convention funds National environmental funds National public budgets Multilateral grant donors Bilateral grant donors Environmental NGOs
Establishment of waste management infrastructure (collection, recovery, storage and disposal, etc.)	National public budgets Company user charges International development funds and banks Bilateral grant donors and lending agencies Commercial banks

d) Possible international sources of funds for the Basel Convention

i) Emergency Fund

The Emergency Fund was established to assist Parties that are developing countries or countries with economies in transition in cases of emergency and compensation for damage resulting from incidents arising from transboundary movements of hazardous wastes and other wastes and their disposal. United Nations Development Programme.

ii) Basel Convention: Technical Cooperation Fund

The Basel Convention regulates the cross-border movements of hazardous wastes (such as persistent organic pollutants, POPs) and other specified wastes, primarily through a prior informed consent procedure. It also promotes the environmentally sound management of waste. The Convention's technical cooperation trust fund assists developing countries and other countries in need of technical assistance in implementing the convention. The fund receives voluntary contributions from donors (industrialized and developing countries). Funds are normally spent on financing projects, capacity-building, and participation in the meetings of the parties.

e) Strategic Approach to International Chemical Management (SAICM)

SAICM was developed to help ensure that, by the year 2020, chemicals are produced and used in ways that minimize significant adverse impacts on the environment and human health. Developing countries and countries with economies in transition are eligible for support from the trust fund.

f) The Global Environment Facility (GEF)

An independent financial organization, the GEF provides grants to developing countries and countries with economies in transition for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer and persistent organic pollutants (POPs). These projects benefit the global environment, linking local, national, and global environmental challenges and promoting sustainable livelihoods.

g) Grant Assistance for Grassroots Human Security Projects (GGP)

GPP was established by the Japanese government to assist nonprofit organizations in developing countries in responding to various development needs in a prompt and complete manner on a comparatively small scale. Eligible recipients include NGOs, local public authorities, educational institutions, and hospitals and medical institutions. For details on GGP, please contact the Japanese Embassy in your country.

h) United Nations Development Programme (UNDP)

The United Nations Development Programme (UNDP) provides grant funding for economic and social development. Funds come from the voluntary contributions of Member States of the United Nations and affiliated agencies, who have committed themselves to providing approximately USD 1 billion yearly to UNDP's regular resources. Other funding arrangements, including cost-sharing, provide approximately USD 1 billion in additional resources each year.

Support to Waste Related Sectors

The UNDP has committed to the Millennium Development Goals, agreed in 2002 at the United Nations Millennium Summit. The goals include ensuring environmental sustainability as one out of 7 main goals. The UNDP offers grant funding for technical assistance in six areas of practice, including energy and environment. The major areas of support include national strategic, policy and regulatory frameworks for environmentally sustainable development; national and local-level capacity development to support participatory approaches to environmental management; and helping countries to meet their commitments under the global environmental conventions on biodiversity, climate change and desertification. For 2002, estimated total programme expenditures within the energy and environment sector were USD 298 and constituted 16.11% of total expenditure. The UNDP is the implementing agency in relation to a number of trust funds and facilities. In relation to environment and the waste sector, the following are the most important:

Type of Financial Assistance Provided: Assistance is provided in the form of grants.
Project Size and Co-financing Requirements: There is no official maximum size of project. The UNDP encourages cost-sharing contributions but there is not a specific requirement.
Access to Assistance: UNDP assistance is programmed through a country cooperation framework (CCF). This is developed within the framework of the dialogue between the UN system and the national authorities in the countries. This dialogue results in a common country assessment (CCA), and a United Nations Development Assistance Framework (UNDAF), which is a strategic framework for the country-level activities of the entire United Nations system. The UNDP's CCF sets out the key results, the strategies through which the results will be achieved, and how they will be assessed. Once a CCF is approved, UNDP resources are assigned and individual programmes and projects are formulated. Project proposals should be referred to the relevant country office for possible inclusion in the programme of support.

i) Deutsche Gesellschaft für Technische Zusammenarbeit (GIZ)

The Deutsche Gesellschaft für Technische Zusammenarbeit (GIZ) (Germany Federal Interprise for International Cooperation) is a government-owned corporation for international cooperation of Germany. In more than 130 developing or transition countries, GIZ is supporting 2,700 development projects and programmes, chiefly under commissions from the German Federal Government. GIZ was founded in 1975 as a corporation under private law. The German Federal Ministry for Economic Cooperation and Development (BMZ) is its main financing organization. GIZ also undertakes commissions from other government departments, from governments of other countries, from international clients such as the European Commission, the United Nations or the World Bank, as well as from private-sector corporations. GIZ operates on a public-benefit basis. Any surpluses are exclusively re-channeled into its own development cooperation projects.

Support to Waste Related Sectors

The GIZ works with hazardous waste management, municipal waste management, and waste management policy.

Co-operation Countries and Regions

- **Latin America and the Caribbean**:

Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela

- **Africa:**

Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of Congo, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger,

Nigeria, Republic of Congo, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, and Zimbabwe

- **Near and Middle East and the Maghreb:**

Algeria, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Palestinian Territories, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, Yemen. Mediterranean Region, Europe, Central Asian Countries: Afghanistan, Albania, Armenia, Azerbaijan, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyz Republic, Latvia, Lithuania, Montenegro, Pakistan, Poland, Romania, Russian Federation, Serbia and Montenegro, Slovakia, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan.

4.1.4. Step 5: Strategic plan for the implementation of the Basel Convention (2014-2021)

4.2. Vision of the Strategic plan for the implementation of the Basel convention 2014-2021

The vision of this NIP is to protect the human health and the environment through controlling the un-sound wastes management, controlling transboundary movements, ensuring and strengthening the environmentally sound management of such wastes in order to achieve a clean environment as stated in the country's constitution, vision 2020, EDPRS II and the Millennium Development Goals.

4.3. Guiding principles

Some guiding principles are drawn taking into consideration the waste management hierarchy (prevention, minimization, reuse, recycling, recovery including energy recovery, and final disposal). In doing so, we encourage the control of the transboundary movement and practices that deliver the best overall environmental outcome, taking into account life-cycle thinking.

4.4. .Strategic Framework for the Implementation of the Basel Convention 2012–2021

In October 2012, the Conference of Parties (COP 10) adopted a new strategic framework for the period 2012 to 2021, that defines the fundamental aims and priorities of the Convention for the relevant decade while taking into account changes that have occurred since its adoption.

4.5. Strategic goals and objectives

Responsibility for the attainment of the goals and objectives within the framework of the Convention lies primarily with each party with the involvement of relevant stakeholders. The support of the Convention Secretariat and the regional and coordinating centres will be crucial in

the attainment of these goals and objectives by developing countries and countries with economies in transition, in the light of their respective capacities and particular requirements. Attainment of the strategic goals also hinges upon the availability of means of implementation. In this regard, full consideration should be given to Article 10 of the Convention.

Goal 1: Effective implementation of parties' obligations on transboundary movements of hazardous and other wastes

Objective 1.1: To reach a common understanding among parties of the definition, interpretation and terminology of wastes covered by the Convention, including the distinction between wastes and non-wastes.

Objective 1.2: To prevent and combat illegal traffic in hazardous and other wastes.

Objective 1.3: To improve performance in meeting requirements pertaining to, among other things, notifications of national definitions of hazardous and other wastes, prohibitions and other control measures.

Objective 1.4: To generate, provide, collect, transmit and use reliable qualitative and quantitative information and data regarding export, import and generation as required under Article 13 of the Convention.

Goal 2: Strengthening the environmentally sound management of hazardous and other wastes

Objective 2.1: To pursue the development of environmentally sound management of hazardous and other wastes, especially through the preparation of technical guidelines, and to promote its implementation in national legislation.

Objective 2.2: To pursue the prevention and minimization of hazardous waste and other waste generation at source, especially through supporting and promoting activities designed to reduce at the national level the generation and hazard potential of hazardous and other wastes.

Objective 2.3: To support and promote parties' capacity-building, including technological capability, through technology needs assessments and technology transfer, so as to reduce the generation and hazard potential of hazardous and other wastes.

Objective 2.4: To facilitate national, regional and international commitment with regard to the management of priority waste streams, as identified in the programme of work of the Convention, taking into consideration the priorities of developing countries and countries with economies in transition and in accordance with the requirements of the Convention.

Objective 2.5: To enhance and promote the sustainable use of resources by improving the management of hazardous and other wastes and to encourage the recognition of wastes as a resource, where appropriate.

Goal 3: Promoting the implementation of the environmentally sound management of hazardous and other wastes as an essential contribution to the attainment of sustainable livelihood, the Millennium Development Goals and the protection of human health and the environment

Objective 3.1: To develop national and regional capacity, particularly through the Basel Convention regional and coordinating centres, by integrating waste management issues into national sustainable development strategies and plans for sustainable livelihood.

Objective 3.2: To promote cooperation with national, regional and international bodies, in particular cooperation and coordination between the Basel, Rotterdam and Stockholm conventions, to improve environmental and working conditions through the environmentally sound management of hazardous and other wastes.

Table 15: Logical Framework

Goal N^0 1: Effective Implementation of Parties' Obligations on Transboundary movements of Hazardous and other waste
Objective 1: To reach a common understanding among parties of the definition, interpretation and terminology of wastes covered by the Convention, including the distinction between wastes and non-wastes.
Results: National Definitions of wastes, trained personnel

Activities	Indicators	Source of verification	Actors	Requirements / means	Time frame	Budget
Participation in international and regional trainings to enhance the knowledge on the Basel convention including the wastes, non wastes and hazardous wastes definitions.	-Number of trainings attended -Documents from the trainers	• Activity reports of the focal points • Trainees report	REMA, RRA, RSB, RAB, MINICOM, MoH, RNP	• Budget • Human Resources	2014-2021	51,000,000
Setup of a national definition of non-wastes, wastes and hazardous wastes and communicate it to secretariat of Basel convention	-Availability of document -Notification from the secretariat acknowledging the recognition of formulated definitions.	• Activity reports of the focal points • Minutes from the meeting of stakeholders	REMA, RRA, RSB, RAB, MINICOM, MINISANTE, RNP	• Skilled Human resources • Budget	2014	15,000,000
Sub total		•		•		66,000,000
Objective 2: To prevent and combat illegal traffic in hazardous and other wastes.						
Results: A working system for controlling the transboundary movement of wastes, A working institutional framework operating the control system, trained personnel						

Activities	Indicators	Source of verification	Actors	Requirements / means	Time frame	Budget
Activities	Indicators	Source of verification	Actors	Requirements	Time frame	Budget
Establishment of a national wastes transboundary movement control system	Availability of procedure for the notification of transboundary movements of hazardous waste or other waste that is made up by: • a responsibility to notify, • documentation and general notification, • contact between the exporter and disposer, • insurers/financial guarantees, • international transport rules and regulations, and • environmentally sound management	• Focal point report • Stakeholders meeting minutes • Availability of the documentation in focal point office	EAC members, REMA, RSB, RRA, RNRA, MINIRENA, MINICOM, RNP	• Budget • Skilled human resources	2014-2016	25,000,000
Establishment institutional arrangement for transboundary movement wastes showing clearly the stake of each member.	• Texts establishing the missions of the institutional framework	• Report to the focal point • Minutes of stakeholders meeting that establishes the framework	EAC members, REMA, RSB, RRA, RNRA, MINIRENA, MINICOM, RNP, MININFRA, MINAGRI	• Budget • Skilled human resources	2016	30,000,000
Training on the implementation of the transboundary movement control system.	• Training report holding a trainees list • Training manuals	• Minutes of the meeting preparing the training • Report of training to the focal point	EAC members, REMA, RSB, RRA, RNRA, MINIRENA, MINICOM, RNP	• Budget • International trainers • National trainees	2016-2021	60,000,000
Cooperation with regional parties for control reinforcement	• Availability of a cooperation report • Availability of MoUs	• Activities Report to the focal point	EAC members, REMA, RSB, RRA, RNRA, MINIRENA, MINICOM	• Budget	2017-2021	50,000,000
Sub total						165,000,000
Objective 3: To improve performance in meeting requirements pertaining to, among other things, notifications of national definitions of hazardous and other wastes, prohibitions and other control measures.						
Results :An improved control system, an improved personnel capacity						
Activities/Logic of intervention	**Indicators**	**Source of verification**	**Actors**	**Requirements**	**Time Frame**	**Budget**
Review / update of the control system	• Availability of Revised/ updated version of the control system	• Activities Report to the focal point • Minutes of the revision/update meetings	REMA, RRA, RNP, RAB, RSB, MINICOM, MINAGRI, MINISTRY OF ICT, MININFRA, MISANTE	• Skilled human resources • Budget	2017	20,000,000
Regular national	• Training report holding a trainees list	• Activities report to the focal point	REMA, RRA, RNP, RAB,	• Budget • Trainers and	2014-2021	90,000,000

Activities	Indicators	Source of verification	Actors	Requirements / means	Time frame	Budget
trainings of key stakeholders	• Training manures		RSB, MINICOM, MINAGRI, MINISTRY OF ICT, MININFRA, MISANTE	trainees		
Participation in regional and international trainings and cooperation for control enhancement	• Availability of a cooperation report • Availability of MoUs	• Activities report to the focal point	REMA, RRA, RNP, RAB, RSB, MINICOM, MINAGRI, MINISTRY OF ICT, MINIFRA, MISANTE (MOH)	• Budget • Human Resources	2014-2012	200,000,000
Sub total						**310,000,000**
Objective 4: To generate, provide, collect, transmit and use reliable qualitative and quantitative information and data regarding export, import and generation as required under Article 13 of the Convention.						
Results: Availability of good data from an established data acquisition system, personnel with improved skills						
Establishment of data acquisition system for national wastes and transboundary movement of waste	• Availability of the software	• Activities report to the focal point	REMA, RSB, RAB, RRA, RNP, MINIRENA	• Budget • Data collection software or technology • Human ressources	2014-2021	30, 000,000
Training on illegal traffic detection	• Availability of the training report • List of trained personnel	• Minutes of the meeting preparing the training • Report of training to the focal point	REMA, RSB, RAB, RRA, RNP, MINIRENA	• Budget • Trainers • Trainees	2014-2021	90, 000,000
Training on data management ,transmission and analysis	• Training report • Availability of the data	• Minutes of the meeting preparing the training • Report of training to the focal point	REMA, RSB, RAB, RRA, RNP	• Budget • Software or a Platform • Human resources	2014-2021	30, 000,000
Recruitment of wastes data manager.	• Availability of qualified personnel	• Availability of the job description of the data manager in focal point officer	REMA, RSB, RAB, RRA, MINIRENA, MIFOTRA	• Budget • Human resource	2014-2016	15, 000,000
S/T						**135,000,000**
Total G1						**676,000,000**

Goal n° 2: Strengthening the environmentally sound management of hazardous and other wastes

Specific Objective 1: To pursue the development of environmentally sound management of hazardous and other wastes, especially through the preparation of technical guidelines, and to promote its implementation in national legislation.

Results: A number of guidelines on environmental sound management of hazardous and other wastes will be developed.

Activities	Indicators	Source of verification	Actors	Requirements	Time frame	Budget
Development of national policy on hazardous and other waste	National policy on hazardous and other waste developed	Report of meetings Activity reports of the technical teams , Report to the secretariat of the Convention	Ministry in charge of natural recourses, Ministry of infrastructure, REMA, RNRA, municipalities and private sector working in the field of waste management	• Budget • Human resources	2014-2016	15,000,000
Production of appropriate guidelines on hazardous and other waste in general	Public and Privates institution equipped with national guidelines on hazardous and other waste.	Report of meetings Activity reports of the technical teams , Report to the secretariat of the Convention	Ministry in charge of natural recourses, Ministry of infrastructure, REMA, RNRA, municipalities and private sector working in the field of waste management	• Human resources • Budget	2016-2018	200,000,000
Validation workshop for the above documents by key stakeholders	Public and Private institutions involved in waste management attending the meeting Provided guidelines on hazardous and other wastes reviewed and validated	Report of meetings Activity reports of the technical teams , Report to the secretariat of the Convention	Ministry in charge of natural recourses, Ministry of infrastructure, REMA, RNRA, municipalities and private sector working in the field of waste management	• Human resources • Budget	2018	35,000,000
Sub total				•		**250,000,000**

Specific Objective 2: To pursue the prevention and minimization of hazardous waste and other waste generation at source, especially through supporting and promoting activities designed to reduce at the national level the generation and hazard potential of hazardous and other wastes

Activities	Indicators	Source of verification	Actors	Requirements	Time frame	Budget
Results: A number of awareness campaigns and sensitizations meeting on the management of hazardous and other wastes will be organised.						
Activities	**Indicators**	**Source of verification**	**Actors**	**Requirements / means**	**Time frame**	**Budget**
National trainings on wastes prevention, minimization and disposal targeting different types of wastes and their key generators.	List of trained personnel	Report of meetings Activity reports of the technical teams , Report to the secretariat of the Convention	Ministry in charge of natural recourses, Ministry of infrastructure, REMA, RNRA, municipalities and private sector working in the field of waste management	• Budget • Human resources (trainers and trainees)	2014 - 2021	35,000,000
Development of institutional wastes management policy that comply with the national waste management policy.	Availability of institutional policy in different institution	Report of the institution to the focal point	Different institutions(industries, Laboratories, Hospitals) and REMA	• Human resources • Budget	2016 - 2019	55,000,000
Sub total						**90,000,000**
Specific Objective 3: To support and promote capacity-building for parties, including technological capability, through technology needs assessments and technology transfer, so as to reduce the generation and hazard potential of hazardous and other wastes.						
Result: A number of capacity building trainings and technology transfer to public and private companies will be organised.						
Activities	*Indicators*	*Source of verification*	*Actors*	*Requirements / means*	*Time frame*	*Budget*
Facilitate efforts towards direct foreign investment in the country, taking into account national and international conditions, for the minimization and environmentally sound management of hazardous wastes and other wastes.	Number of public institutions and private companies that have developed and implemented national strategies, plans or programmes for hazardous waste minimization.	Report of meetings Activity reports of the technical teams , external funds received, Report to the secretariat of the Convention	MINICOM, MINECOFIN, RDB, RRA, RURA, MINIRENA, MININFRA, REMA, RNRA, external donors, municipalities and private sector working in the field of waste management	• Skilled Human resources	2014-2021	90,000,000
To facilitate capacity development mainly for	Number of public institutions and private companies receiving capacity-building	Report of meetings Activity reports of the technical	Ministry in charge of natural recourses,	• Human resources	2014-2021	40,000,000

Activities	Indicators	Source of verification	Actors	Requirements	Time frame	Budget
sustainable resource mobilization by cooperation with multilateral and bilateral international donors and by provision of financial support for implementation of the Strategic Framework.	support that report reductions in hazardous waste generation	teams , external funds received, Report to the secretariat of the Convention	Ministry of infrastructure, REMA, RNRA, external donors, municipalities and private sector working in the field of waste management	• Budget		
To quantify the financial requirements for the effective implementation of the Strategic Framework, both at the domestic and international level, with a view to identifying possible funding sources, including innovative ones.	***Number of public institutions and private companies receiving capacity-building support for hazardous waste minimization.***	***Report of meetings Activity reports of the technical teams , external funds received, Report to the secretariat of the Convention***	***Ministry in charge of natural recourses, Ministry of infrastructure, REMA, RNRA, external donors, municipalities and private sector working in the field of waste management***	• ***Human resources*** • ***Budget***	***2014-2021***	***85,000,000***
				•		***215,000,000***
Specific Objective 4: To enhance and promote the sustainable use of resources by improving the management of hazardous and other wastes and to encourage the recognition of wastes as a resource, where appropriate. ***Result: A number of recycling technologies will be introduced mainly focusing on the use of waste as valuable resources.***						
Activities	**Indicators**	**Source of verification**	**Actors**	**Requirements / Means**	**Time frame**	**Budget**
Incorporation of a waste management department in some institutions such as Hospital, industries, higher learning institutions, Research laboratories, ministries.	Availability of environmental department in organigram of institutions	• Institution meeting reports • Institution organigram	REMA, MINISTRIES, Private Sector, NGOs, Public institutions	• Budget and Human resources	2016-2021	30,000,000
Link the wastes generators and wastes re-users	Cooperation MoUs between wastes re-users and wastes generators	Reports of cooperation activities in both institutions	REMA, Wastes generators and Re-users		2014-2021	40,000,000
Sub total						70,000,000
Total G2						**625,000,000**

Goal n° 3: Promoting the implementation of the environmentally sound management of hazardous and other wastes as an essential contribution to the attainment of sustainable livelihood, the Millennium Development Goals and the protection of human health and the environment.

Specific Objective 1: To develop national and regional capacity, particularly through the Basel Convention regional and coordinating centres, by integrating waste management issues into national sustainable development strategies and plans for sustainable livelihood.

Result: Number of public and privates companies reporting, through the focal point on the integration of waste and hazardous waste issues into their development plans or strategies.

Activities	Indicators	Source of verification	Actors	Requirements / means	Time frame	Budget
To assess national and regional Capacity requirements	Conducted study on the national and regional capacity requirements	Baseline study on the national and regional capacity requirements	REMA, MINEDUC, MINIRENA, RRA, RSB, MINEAC, RNP	• Budget • Human resources	2014	10,000,000
To assess national and regional capacity needs	Conducted study on the national and regional capacity needs	Baseline study on the national and regional capacity needs	REMA, MINEDUC, MINIRENA, RRA, RSB, MINEAC, RNP	• Budget • Human resources	2014	15,000,000
To design national and regional capacity development modules taking into consideration private sector	Designed Training manual on national and capacity development inserted also in education at all levels	Training manual on national and capacity development inserted also in education at all levels	REMA, MINEDUC, MINIRENA, RRA, RSB, MINEAC, RNP	• Budget • Human resources(Trainers and trainees)	2014	35,000,000
To undertake a national and regional capacity development of staff	Number of sessions organised, Number of people trained	Reports on the training, Qualified technical staff in place	MINIRENA, MINAFFET, MINEAC; MINAGRI		2014-2015	45,000,000
To adapt existing institution and infrastructure to the Basel convention requirements	Adaptation of existing institutions & infrastructure and creation of new ones in conformity to the Basel convention obligations	Adapting and creating texts adopted by cabinet and parliaments	Related institutions and infrastructure, REMA, MINEDUC, MINIRENA, RRA, RSB, MINEAC, RNP, MININFRA, MINECOFIN	• Budget • Human resources	2014-2016	400,000,000
To develop waste dealers in waste management hierarchy (prevention, minimization, reuse, recycling, other recovery including energy recovery, and final disposal)	Number of waste dealers trained	Reports on the training and qualified professional in waste management	Private sector, MINEDUC, REMA, MINEAC	• Human resources • Budget	2014-2017	50,000,000
To design a M&E framework	***Designed M&E framework***	***M&E framework plan***	***Basel Conventions***	• ***Human resources***	***2014-2016***	***35,000,000***

Activities	Indicators	Source of verification	Actors	Requirements / means	Time frame	Budget
			Regional Centre and national responsible institutions	• ***Budget***		
To design a national and regional reporting framework	***Designed national and regional reporting framework***	***National and regional reporting framework plan***	***Basel Conventions Regional Centre and national responsible institutions***	• ***Budget*** • ***Human resources***	***2014-2016***	***72,000,000***
Develop capacities in waste identification, management and disposal for national leaders	Number of sessions organised, Number of people trained	Reports on the training and qualified professional in waste management	Basel Conventions Regional Centre and national responsible institutions	• Budget • Human resources	2014-2015	80,000,000
Develop capacities in information exchange, dissemination, awareness raising and education	Number of sessions organised, Number of people trained	Reports on the training and qualified professional in waste management	Basel Convention Regional Centre and national responsible institutions	• Budget • Human resources	2014-2015	45,000,000
Development of a comprehensive model regulatory system for waste management integrating sustainable development strategies and plans for sustainable livelihood	Workshops organized for the Development of a comprehensive model regulatory system for waste management integrating sustainable development strategies and plans for sustainable livelihood	Comprehensive regulatory system for waste management integrating sustainable development strategies and plans for sustainable livelihood	REMA, MINEDUC, MINIRENA, RRA, RSB, MINEAC, RNP, MININFRA, MINECOFIN, Private sector, Basel Convention Regional Centre	• Budget • Human resources	2014-2015	60,000,000
Sub total				•		**847,000,000**
Specific Objective 2: To promote cooperation with national, regional and international bodies, in particular cooperation and coordination between the Basel, Rotterdam and Stockholm conventions, to improve environmental and working conditions through the environmentally sound management of hazardous and other wastes.						
Result: Number of activities on common issues undertaken by the bodies under the three conventions.						
Activities	**Indicators**	**Source of verification**	**Actors**	**Requirements / means**	**Time frame**	**budget**
To assess the stakeholders in the three conventions	Conducted assessment on the stakeholders of the three conventions	Stakeholders assessment report	Concerned institutions in the three conventions	• Budget • Human resources	2014-2016	100,000,000
To specify responsibilities of every stakeholder	Conducted assessment of the respective responsibilities of each stakeholders	Assessment report	Concerned institutions in the three conventions and regional centre	• Budget • Human resources	2014-2016	10,000,000

Activities	Indicators	Source of verification	Actors	Requirements / means	Time frame	Budget
To capture common responsibilities and establish a cooperation framework between stakeholders	Conducted assessment of common responsibilities and established cooperation framework.	Cooperation Task force body and MoU	Concerned institutions in the three conventions and regional centre	• Budget • Human resources	2014-2016	30,000,000
To strengthen regional cooperation and participate in common activities	Frequency of Participation in workshops	Minutes of the workshops	Concerned institutions in the three conventions and regional centre	• Budget • Human resources	2014-2016	60,000,000
Active participation and support work in the common meetings	Responsibilities in the support works and meetings	Reports and Minutes	Concerned institutions in the three conventions and regional centre	• Budget • Human resources	2014-2016	100,000,000
Conduct background studies to support cooperation	Conducted studies	Studies reports	Concerned institutions in the three conventions and regional centre	• Budget • Human resources	2014-2016	50,000,000
To achieve improved legislative and regulatory mechanisms in participating countries	Implement and enforce Legislation/ regulation.	Legal instruments published accordingly	Concerned institutions in the three conventions and regional centre	• Budget • Human resources	2014-2016	50,000,000
To develop enforcement and administrative capacity	Develop training documents and train-the-trainer activities. Carry out pilot demonstration of cleaner health care waste management	Training modules Reports	Concerned institutions in the three conventions and regional centre	• Budget • Human resources	2014-2016	30,000,000
Establish and maintain a website for the forum to improve communication among members, provide linkages and good technical relations with other regional forums to ensure exchange of information and experiences	*Website*	website	Concerned institutions in the three conventions and regional centre	• Budget • Human resources	2014-2016	60,000,000
sub total				•		**490,000,000**
Total G3				•		**1,337,000,000**
Grand Total						**2,638,000,000**

Table 16: Total Budget for each objective

Objective	*Total Budget 2014/2021*
Goal N^0 1: Effective Implementation of Parties' Obligations on Transboundary movements of Hazardous and other waste	
Objective 1: To reach a common understanding among parties of the definition, interpretation and terminology of wastes covered by the Convention, including the distinction between wastes and non-wastes	*66,000,000*
Objective 2: To prevent and combat illegal traffic in hazardous and other wastes	*165,000,000*
Objective 3: To improve performance in meeting requirements pertaining to, among other things, notifications of national definitions of hazardous and other wastes, prohibitions and other control measures	*310,000,000*
Objective 4: To generate, provide, collect, transmit and use reliable qualitative and quantitative information and data regarding export, import and generation as required under Article 13 of the Convention	*135,000,000*
S / total Goal 1	**676,000,000**
Goal n° 2: Strengthening the environmentally sound management of hazardous and other wastes	
Objective 1: To pursue the development of environmentally sound management of hazardous and other wastes, especially through the preparation of technical guidelines, and to promote its implementation in national legislation	*250,000,000*
Objective 2: To pursue the prevention and minimization of hazardous waste and other waste generation at source, especially through supporting and promoting activities designed to reduce at the national level the generation and hazard potential of hazardous and other wastes	*90,000,000*
Objective 3: To support and promote capacity-building for parties, including technological capability, through technology needs assessments and technology transfer, so as to reduce the generation and hazard potential of hazardous and other wastes	*215,000,000*
Objective 4: To enhance and promote the sustainable use of resources by improving the management of hazardous and other wastes and to encourage the recognition of wastes as a resource, where appropriate	*70,000,000*
S / total Goal 2	***625,000,000***
Goal n° 3: Promoting the implementation of the environmentally sound management of hazardous and other wastes as an essential contribution to the attainment of sustainable livelihood, the Millennium Development Goals and the protection of human health and the environment	
Objective 1: To develop national and regional capacity, particularly through the Basel Convention regional and coordinating centres, by integrating waste management issues into national sustainable development strategies and plans for sustainable livelihood	847,000,000
Objective 2: To promote cooperation with national, regional and international bodies, in particular cooperation and coordination between the Basel, Rotterdam and Stockholm conventions, to improve environmental and working conditions through the environmentally sound management of hazardous and other wastes	490,000,000
S/total Goal 3	**1,337,000,000**
TOTAL	**2,638,000,000**

Specific Objective 1: To develop national and regional capacity, particularly through the Basel Convention regional and coordinating centres, by integrating waste management issues into national sustainable development strategies and plans for sustainable livelihood.

Notes

(1) The budget needed for the activities listed in the table above will be obtained from different sources as listed in table 14.

(2) The training activities will split into three phases and will be covering all aspects of the basel convention.

Phase 1 will be the training of trainers where the international experts will come and train the local trainers. Before the training, the experts will adapt their training manual to the Rwanda context. These modules will be validated by REMA during the validation workshop that will include other main stakeholders of the Basel convention such as MOH, RRA, RNP, RSB, RAB, MINIJUSTE, UR.

The Phase 2 concerns the training of staff of different entities in the country, whereas **the Phase 3** concerns the post-training and the monitoring of acquired competences.
In phase 3 a monitoring and evaluation exercise will be done. The aim of this exercise is to assess how institutions are applying the knowledge acquired in Phase 2 and challenges or gaps that have risen.

From the gaps and challenges, the trainers will readapt the training manuals and the final versions will be used in Phase 3 trainings. This adaptation can be done by local trainers or if required experts abroad can intervene. The focal point can also link the local trainers to the BC secretariat.

Table 17: Deliverables and time frame for the training

Phases	***Activities/deliverables***	***Duration***
PHASE I	An inception report, concerning the planning of mission of the consultant. The report shall include in particular the schedule of the activities as well as the synopsis of his methodology. Presentation of drafts of training manuals (technical and financial management, conflict management, etc) Presentation of the draft of the validation test.	2 weeks
	Conduct a validation workshop by REMA	
	Training of trainers (3 focal point staff, 2 staff from RRA, 2 staff from MINIJUSTE, 2 RNP, 2 RAB, 2 RSB) Training report	10 days
	Validation test. Issue of a Certificate of Training	
PHASE II	Training An inception report, concerning the planning of mission of the local trainers The report shall include in particular the scheme of the activities as well as the synopsis of his methodology.	2015-2017

Phases	*Activities/deliverables*	*Duration*
PHASE III	An inception report, concerning the planning of mission of the local trainers. The report shall include in particular The schedule of activities as well as the synopsis of his methodology Assessment of weaknesses and needs of trained personnel. Development of additional training modules Development of the draft for the validation workshop.	3 weeks
	Strengthening of the gains of the of the local staff Monthly Progress Report.	2018-2021

4.5. Evaluation of strategic plan results

In the Evaluation step, data will be collected from different actors depending on their interventions and analyzed. Data collected will be focusing on the progress made in implementing the strategy and the extent to which the national specific objectives have been achieved.

Apart from the field data collection, the focal point should also use reports from different actors to assess the progress towards meeting the strategic objectives. Therefore, it is obvious they must ensure that whoever is doing the work is keeping appropriate records so that progress can be assessed.

During the evaluation, direct questions to the specific persons should be asked or an online survey should be developed to get anonymous responses and gauge if the type of response obtained are those that were expected from a specific actors. Apart from giving the picture of the strategy progress, the evaluation results can also be extremely useful in communication with founders and other audiences, increasing and supporting credibility and capacity to reach the goals of the strategies.

Table 18: Evaluation ranking and output quality

Evaluation condition	Percentage of implementation	Quality
If the objectives is implemented at	100	Excellent
	[90-100[	Superior
	[80-90[	High
	[70-80[	good
	[50-70[	Moderate
	[0-50[	Fail

After the evaluation the feedback will be sent to the actor for more improvement

4.6. Institutional Framework to prevention and combat illegal traffic in hazardous and other wastes

To make the wastes management effective, an appropriate institution framework which responds coherently and effectively to current and future challenges and efficiently bridges the gaps in the implementation of Basel convention is needed. The institutional framework for Basel convention implementation should integrate the waste management hierarchy (prevention, minimization, reuse, recycling, other recovery including energy recovery, and final disposal) in a balanced manner and enhance implementation by strengthening coherence, coordination, avoiding duplication of efforts and reviewing progress in implementing of the Basel convention 2014-2021 strategies.

It will recognize that joint efforts at the local, national, regional and global levels will be the key tools for sustainable management of wastes. In the proposed framework, REMA will play different roles, the most important one being the coordination of all activities. The table below is specifying the intervention of each institution.

Table 19: Institutional Framework to prevention and combat illegal traffic in hazardous and other wastes

Awareness		***Prevention***	
Actors	**Responsibilities**	**Actors**	**Responsibilities**
REMA	- Coordination and elaboration of awareness programs about traffic of hazardous and other wastes - Use the media and its website to raise community awareness	REMA	- Coordination and elaboration of necessary guidelines, policies, laws,…; - Supervise the compliance with those guidelines, policies, laws,….; - Collaborate with RRA, RSB, RNP, RAB in wastes code standardization - Establish the data collection system
RSB	- Elaboration of awareness programs traffic in hazardous and other wastes - Use the media and its website to raise community awareness	RSB	- Elaboration of necessary guidelines, policies, laws for both new products and wastes - Establish standards and control their implementation - Supervise the compliance with those guidelines, policies, laws, etc. - Collaborate with REMA, RRA, RNP, RAB in wastes code standardization - Adhere to the data collection system set by REMA

Awareness		***Prevention***	
Actors	**Responsibilities**	**Actors**	**Responsibilities**
MEDIA	Mediatisation and Sensitization to population on traffic of hazardous and other wastes	MINIJUST	- Through parliament emitting necessary laws regulating the illegal traffic in hazardous and other wastes
MINEDUC	Incorporation of the awareness on traffic of hazardous and other wastes in the education curriculum	REB	- Supervise the compliance with the guidelines, policies, law - Collaborate with REMA, RSB, RNP, RAB in wastes code standardization - Adhere to the data collection system set by REMA
MINECOFIN	Availing the budget and financing the awareness programs	MINAGRI/ RAB	- Supervise the compliance with those guidelines, policies, law - Collaborate with REMA, RRA, RNP, RSB in wastes code standardization
RNP	Supervise and support in terms of security and the awareness programs	MINIRENA /REMA	- Issuing necessary ministerial orders - Linking the focal point (REMA) to other ministries
Local Government Authorities	- Sensitization to the population about traffic of hazardous and other wastes - Sensitization to the population about the effect of hazardous and other wastes on their life, environment and to the development	MINECOFIN/MINALOC, MINIRENA, REMA	- Availing budget, financing and political support to the institution assigned to this Ministry (RURA, RSB, RDB) that are involved in prevention - Facilitate private investment in wastes management through RDB
Private sector	Sensitization to the private investors (industries and companies) on wastes management and on illegal traffic of hazardous and other wastes	Private sector and population in general	- Compliance with prevention measures and reporting on non compliance
		RNP	Securing prevention activities

PROSECUTION		***CONTROL***	
Actors	**Responsibilities**	**Actors**	**Responsibilities**
REMA	- Reporting on non compliance and courts/tribunals; - Applying appropriate fines - Witnessing illegal traffic of hazardous and other wastes cases in courts/tribunals	REMA	- Setting up control system (documentation system = Control measure) - Conducting controls when deemed necessary Coordinate the activity
RRA	- Reporting on non compliance and seizing the courts/tribunals; - Applying appropriate fines - Witnessing illegal traffic of hazardous and other wastes cases in courts/tribunals	RSB	- Setting up control measures; - Conducting controls at country border
RSB	- Reporting on non compliance and seizing the courts/tribunals; - Applying appropriate fines - Witnessing illegal traffic of hazardous and other wastes cases in courts/tribunals	RRA/REMA	- Setting up control measures; - Conducting controls at country borders
MINAGRI	- Reporting on non compliance and seizing the courts/tribunals; - Applying appropriate fines - Witnessing illegal traffic of hazardous and other wastes cases in courts/tribunals	MINAGRI/RAB/REMA	- Setting up control measures; - Conducting controls at country border
MINIJUST	- Through tribunals and	RNP	- Supporting control at

PROSECUTION		*CONTROL*	
Actors	**Responsibilities**	**Actors**	**Responsibilities**
	parliament applying applicable laws and regulations		border and within the country - Securing control activities
TRIBUNALS	- Sitting and deciding on cases of illegal traffic of hazardous and other wastes	MINECOFIN	Availing budget and Financing the prosecution process
RNP	- Apprehending hazardous and other wastes illegal traffic; - Securing all the prosecution process	Private Sector and population in general	- Compliance with control measures and controllers
LGA	- Facilitating the prosecution process when needed	LGA	- Facilitating the control process when needed
MINECOFIN	Availing budget and Financing the prosecution process	Local Government Authorities	Control the wastes management practices in the entity
Private Sector and Population in general	- Facilitating the prosecution process when needed		

MONITORING	
Actors	**Responsibilities**
REMA	- Setting up monitoring framework; - Conducting the monitoring
RSB	- Reporting to REMA on hazardous and other wastes illegal traffic
MINAGRI	- Reporting to REMA on hazardous and other wastes illegal traffic
RRA	- Reporting to REMA on hazardous and other wastes illegal traffic
RNP	- Securing the monitoring process
MINECOFIN	- Availing budget and Financing the prosecution process
Private Sector and population	- Facilitating the prosecution process when necessary

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APPENDICES

Appendix 1: Continuation of types of wastes under Basel Convention and present in Rwanda

Code	*West type*	*Generators*
Y19	Metal carbonyls	UR-colleges, RSB, REG & WASAC, RNP, NAEB, Hospitals, Mount Kenya, ICK, CUR, INES and other higher learning institutions
Y20	Beryllium; beryllium compounds	
Y21	Hexavalent chromium compounds	
Y22	Copper compounds	
Y23	Zinc compounds	
Y24	Zinc compounds	
Y25	Selenium; selenium compounds	
Y26	Cadmium; cadmium compounds	
Y27	Antimony; antimony compounds	
Y28	Tellurium; tellurium compounds	
Y29	Mercury; mercury compounds	
Y30	Thallium; thallium compounds	
Y31	Lead; lead compounds	
Y32	Inorganic fluorine compounds excluding calcium fluoride	
Y33	Inorganic cyanides	
Y34	Acidic solutions or acids in solid form	
Y35	Basic solutions or bases in solid form	
Y36	Asbestos (dust and fibres)	
Y37	Organic phosphorus compounds	
Y38	Organic cyanides	
Y39	Phenols; phenol compounds including chlorophenols	
Y40	Ethers	
Y41	Halogenated organic solvents	
Y42	Organic solvents excluding halogenated solvents	
Y43	Any congenor of polychlorinated dibenzo-furan	
Y44	Any congenor of polychlorinated dibenzo-p-dioxin	
Y45	Organohalogen compounds other than substances referred to in this Annex (e.g. Y39, Y41, Y42, Y43, Y44)	

Appendix 2: Three Wastes Management Projects Contributing to Basel Convention Implementation

Project I: Wastes inventory



Project I Wastes inventory.docx

Project II: Capacity building



PROJECT II Capacity building.doc

Project III: Kigali Municipal Solid Waste incineration project



Project III Kigali Municipal Solid Waste