



THE UNITED REPUBLIC OF TANZANIA

VICE-PRESIDENT'S OFFICE

**GUIDELINES FOR MANAGEMENT OF
HAZARDOUS WASTE**

DIVISION OF ENVIRONMENT

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FOREWORD

Management of hazardous waste is gradually becoming an environmental and social challenge due to increasing volume and the associated inadequate management. The practice of mixing hazardous waste with municipal waste during collection in uncontrolled dump sites accentuates potential environmental and public health risks. This situation necessitates improved hazardous waste management mechanisms in the country. The effective management system can consist of safe methods to prevent and minimize waste generation, collection, storage, transportation, treatment and disposal of hazardous wastes. Notably, reducing and managing the waste generated in a cost-effective sound manner is widely encouraged.

Tanzania, has taken various initiatives towards addressing the challenge of hazardous waste including establishment of policies and legislations. Being a Party to the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal and Bamako Convention on the Ban of the Import into Africa and the Control of Trans-boundary Movement of Hazardous Wastes within Africa, the country is also obliged to take necessary measures to ensure environmentally sound management of hazardous waste. Although these initiatives have been in place, challenges towards effective management and control of hazardous waste still exist.

Therefore, these Guidelines on Management of Hazardous Wastes have been prepared to serve as a quick reference on hazardous waste management so as to improve their management in the country. The Guidelines cover hazardous waste management hierarchy; brief overview of hazardous waste management practices in the country; legal framework as well as roles and responsibilities of different stakeholders; guidelines on management of hazardous waste; and administrative procedures for trans-boundary movements of hazardous waste.

The effective implementation of these guidelines is expected to enrich among others coordination, cooperation, consultation and information exchange among stakeholders towards achieving environmentally sound management of hazardous wastes in the country.

I therefore urge for your support, commitment and cooperation towards use of these guidelines in sustainable management of hazardous waste. It is my expectation that these Guidelines will serve and continue to be a valuable resource for users.



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ABBREVIATIONS AND ACRONYMS

CBOs	Community Based Organizations
CFCs	Chlorofluorocarbons
EEE	Electrical and Electronic Equipment
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
ESM	Environmentally Sound Management
E-Waste	Electronic Waste
GCLA	Government Chemist Laboratory Agency
HCW	Health Care Waste
HIV	Human Immuno Deficiency Virus
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
IPM	Integrated Pest Management
LGA	Local Government Authority
NEMC	National Environment Management Council
NEP	National Environmental Policy
NGOs	Non Governmental Organizations
PBB	Polybrominated Biphenyl
PCBs	Polychlorinated Biphenyl
PCDD	Polychlorinated Dibenzo Dioxins
PCDF	Polychlorinated Dibenzo Furans
PCT	Polychlorinated Terphenyl
PNC	Polychlorinated Naphthalene Compounds
POPs	Persistent Organic Pollutants
PPE	Personal Protective Equipment
PVDF	Polyvinylidene Fluoride
PVF	Polyvinyl Fluoride
SBC	Secretariat of the Basel Convention
SIDP	Sustainable Industrial Development Policy
TAEC	Tanzania Atomic Energy Commission
UN	United Nations
UNR	United Nations Recommendations on the Transportation of Dangerous Goods
URT	United Republic of Tanzania
VPO-DoE	Vice President's Office – Division of Environment
WHO	World Health Organization

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DEFINITION OF TERMS

Competent Authority	The Governmental Authority designated by the State which is Party to the Basel Convention, for receiving the notification of a transboundary movement of hazardous wastes or other wastes, and any information related to it, and for responding to such a notification.
E-waste	This is a term used to cover almost all types of EEE that cannot be upgraded or repaired for re-use which are finally discarded and enter the waste stream. This includes computers, refrigerators and televisions, just to mention a few.
General notification	A notification which covers several shipments of hazardous wastes or other wastes, having the same physical and chemical characteristics and shipped regularly to the same Disposer via the same customs office for entry and exit, to be carried out during a maximum period of one year.
Hazardous waste	Hazardous waste means any solid, liquid, gaseous or sludge waste which by reason of its chemical reactivity, environmental or human hazardousness, its infectiousness, toxicity, explosiveness and corrosiveness is harmful to human health, life or environment.
Hazardous waste management	Handling of hazardous waste through collection, transport, processing, recycling or disposal, in an effort to reduce their effect on human health or the environment.
Incompatible waste	A waste unsuitable for mixing with another waste or material because it may result in a hazard such as fire, explosion, toxic fumes or flammable gases.
Movement document	A document required to accompany the hazardous wastes or other wastes from the point at which a transboundary movement commences to the point of disposal. Each person who takes charge of a transboundary movement of hazardous wastes and other wastes must sign the movement document.
Notification	A document used to transmit, to the Competent Authorities of the States concerned, all the required information concerning any proposed transboundary movement of hazardous wastes and other wastes.

CHAPTER ONE:

INTRODUCTION

1.1 Background

Management of hazardous waste and other waste is a growing challenge due to their nature, increasing volume and associated health and safety risks. Tanzania like other developing countries faces the same challenges including; inadequate waste management technologies, economic difficulties and many competing development needs that makes hazardous waste management a low priority.

In addition, low public awareness and improper disposal of hazardous waste due to inadequate infrastructure and enforcement capacity necessary for proper hazardous waste management. The current trend of economic liberalization can exacerbate such a situation by resulting in the increase of the types, quantity and sources of hazardous wastes. Economic liberalization can also lead to the growth of industries and other economic establishments that produce hazardous wastes in areas that were previously reserved for other uses, for example in residential areas or near water sources. Population growth accompanied by economic development has also caused a massive increase in the generation of waste, including hazardous wastes.

The Environmental Management Act (EMA) (Cap. 191) provides for legal and institutional framework for environmental management in the country. The Act mandates the Minister responsible for Environment to make regulations prescribing the best possible ways of handling hazardous waste and other matters as provided in Section 133 (4) (a)-(h). These Guidelines have been prepared in respect of this legal basis to contribute in the efforts of improving hazardous waste management in the country.

1.2 Objectives of the Guidelines

The general objective of the Guidelines is to provide guidance for the environmentally sound management of hazardous waste in the country. .

The specific objectives of the Guidelines are to:-

- i) Supplement the existing legal and policy framework and provide input for assessing requirements on amendments to relevant national policies and legislation on management of hazardous waste;
- ii) Elaborate legal requirements and administrative procedures for handling of importation, transportation and disposal of hazardous waste as provided in the Environmental Management (Hazardous Waste Control and Management) Regulations, 2009;
- iii) Promote environmentally sound management practices of hazardous waste; and
- iv) To facilitate awareness and understanding of key stakeholders in fulfilling effectively their roles in achieving environmentally sound management of hazardous waste.

1.3 Scope of the Guidelines

The Guidelines cover hazardous waste management hierarchy; brief overview of hazardous waste management practices in the country; legal framework as well as

roles and responsibilities of different stakeholders; guidelines on management of hazardous waste during segregation, storage, packaging, labelling, transportation, treatment and disposal; and administrative procedures for trans-boundary movements of hazardous waste.

1.4 Rationale for Development of the Guidelines

Hazardous waste can cause immediate, short-term and long term public health and environmental problems. However, indiscriminate practices such as mixing it with general municipal waste and low priority accorded to hazardous waste management poses potential risks to human health and the environment.

With the volume of hazardous waste in the country increasing coupled with limited resources and necessary infrastructure, the potential threats and risks are alarming. Therefore, improving capacity in management of hazardous waste at all levels is of paramount importance. These Guidelines were prepared to contribute in ensuring safe and environmental sound management of hazardous waste in the country.

1.5 Relationship with Relevant Policies and Legislation

The Guidelines should not be interpreted as replacing any existing national policies and legislation. These Guidelines were prepared with the view to ensuring their complementarity and mutual supportiveness with relevant national policies and legislation. Where gaps with existing policies and legislation occur, the Guidelines could be a useful input to review and improve such policies and legislation.

1.6 Target Audience

These Guidelines targets all those who are involved and/or affected in one way or other with the management of hazardous wastes. The Guidelines are intended for different target groups including the following:

- i) Local Government Authorities and other Regulatory Authorities responsible for controlling and monitoring hazardous waste;
- ii) Personnel working in the waste management industry (e.g. landfill, wastewater treatment facility and incinerator operators);
- iii) Industries
- iv) Custom Officers;
- v) Personnel working in industries generating hazardous waste;
- vi) Students in tertiary education level;
- vii) Media;
- viii) Environmental NGOs and CBOs; and
- ix) General public

CHAPTER TWO:

BASICS AND MANAGEMENT APPROACH FOR HAZARDOUS WASTE

2.1 Hazardous Waste

Hazardous wastes are generated as by-product in the course of operation of any industrial, commercial or institutional operation, and because of their chemical, physical or biological properties, they require special handling and disposal to prevent adverse impacts to human health and the environment.

Hazardous waste can either be solid, liquid and gaseous or sludge which by reason of its chemical reactivity, environmental or human hazardousness, its infectiousness, toxicity, explosiveness and corrosiveness is harmful to human health, life or environment. Generally, they are considered as hazardous waste if exhibits one or more of the characteristics listed in **Table 1**.

Table 1: List of Hazardous characteristics according to UN classification

UN Class	Code	Hazard Symbol	Characteristics
1	H1		Explosive
			An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings.
3	H3		Flammable liquids
			The word "flammable" has the same meaning as "inflammable". Flammable liquids are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers, etc., but not including substances or wastes otherwise classified on account of their dangerous characteristics) which give off a flammable vapour at temperatures of not more than 60.5°C, closed-cup test, or not more than 65.6°C, open-cup test. (Since the results of open-cup tests and of closed-cup tests are not strictly comparable and even individual results by the same test are often variable, regulations varying from the above figures to make allowance for such differences would be within the spirit of this definition.)
4.1	H4.1		Flammable solids
			Solids, or waste solids, other than those classed as explosives, which under conditions encountered in transport are readily combustible, or may cause or contribute to fire through friction.
4.2	H4.2		Substances or wastes liable to spontaneous combustion
			Substances or wastes which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up on contact with air, and being then liable to catch fire.

UN Class	Code	Hazard Symbol	Characteristics
4.3	H4.3		Substances or wastes which, in contact with water emit flammable gases Substances or wastes which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.
5.1	H5.1		Oxidizing Substances or wastes which, while in themselves not necessarily combustible, may, generally by yielding oxygen cause, or contribute to, the combustion of other materials.
5.2	H5.2		Organic Peroxides Organic substances or wastes which contain the bivalent-o-o-structure are thermally unstable substances which may undergo exothermic self-accelerating decomposition.
6.1	H6.1		Poisonous (Acute) Substances or wastes liable either to cause death or serious injury or to harm human health if swallowed or inhaled or by skin contact.

UN Class	Code	Hazard Symbol	Characteristics
6.2	H6.2		Infectious substances Substances or wastes containing viable micro organisms or their toxins which are known or suspected to cause disease in animals or humans.
8	H8		Corrosives Substances or wastes which, by chemical action, will cause severe damage when in contact with living tissue, or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport; they may also cause other hazards.
9	H10		Liberation of toxic gases in contact with air or water Substances or wastes which, by interaction with air or water, are liable to give off toxic gases in dangerous quantities.
9	H11		Toxic (Delayed or chronic) Substances or wastes which, if they are inhaled or ingested or if they penetrate the skin, may involve delayed or chronic effects, including carcinogenicity.
9	H12		Ecotoxic Substances or wastes which if released present or may present immediate or delayed adverse impacts to the environment by means of bioaccumulation and/or toxic effects upon biotic systems.
9	H13		Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the characteristics listed above.

2.2 Sources and Types of Hazardous Waste

The major sources of hazardous waste include industrial activities, agriculture and agro-industry, health care facilities, mining, commercial centres, domestic and the informal sector (refer Table 2). Agro-industry encompasses farming activities (including urban agriculture), livestock production, and agro-produce processing activities on which the hazardous waste fractions include pesticides, industrial fertilizers, veterinary products and animal carcasses. Hazardous waste generation from industries is critical due to their large geographical spread in the country, and the fact that the annual growth in hazardous waste generation can be directly linked to industrial growth.

Table 2: Typical Sources of Hazardous Waste

Sector	Source	Hazardous waste
Agriculture	Production, formulation and use of pesticides and herbicides	Unused/obsolete pesticides and empty containers
Domestic	Storage, use and disposal of household items	Batteries and dry cells; furniture polishes; wood preservatives, stain removers; paint thinners; rat poisons; herbicides and pesticides; mosquito repellents; paints; disinfectants and fuels (including kerosene).
Energy	Electricity distribution	Oils from electrical equipment such as capacitors and transformers especially those containing Polychlorinated Biphenyls (PCBs).
	Petrol storage	Hydrocarbon sludges/ liquids
Mining and mineral processing	Mining extraction and processing	mine tailings
Health care facilities	Hospitals, dispensaries and health centres	Pathological waste; human blood and contaminated needles; pharmaceutical wastes
Service	Vehicle servicing and repair	Lubricating oils; used batteries; solvent wastes; paint wastes
Laboratories	Diagnostic and other laboratory testing	Spent solvents, unused reagents, reaction products, testing samples, contaminated materials
Small-scale Industry	Metal treating Photo-finishing Textile processing Printing Leather tanning Oil refining	Acids, heavy metals Solvents, acids, silver Cadmium, mineral acids Solvents, dyes, inks Solvents, chromium Spent catalysts
Large-scale Industry	Petrochemical manufacture Chemical/Pharmaceutical manufacture	Oily waste Tarry residues, solvents

2.3 Health and Environmental Effects of Hazardous Waste

Hazardous wastes are substances capable of causing an array of adverse health effects, notably death, birth defects among humans and animals; cancer, neuro-behavioural impairment including learning disorders; immune system changes; skin diseases; reproductive defects of exposed individuals as well as their offspring; and diseases such as endometriosis, increased incidence of diabetes and others.

Hazardous waste when improperly handled, they can release toxicants or pollutants from where they deposit into air, water, sediment and enter the food-chain. The associated pollutants or toxicants of hazardous wastes are distributed through the air and ocean currents – they travel long distances and enter into atmospheric processes, air–water exchange and cycles involving rain and dry particles. These processes lead to the exposure of even remote populations of humans and animals.

2.4 Environmentally Sound Management (ESM) of Hazardous Waste

Environmentally sound management (ESM) of hazardous waste is a broad policy concept without a clear universal definition. The Basel Convention on the Control of Trans-boundary Movements of Hazardous Waste and Their Disposal, defines ESM of hazardous wastes or other wastes as “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 adverse effects which may result from such wastes” (Paragraph 8 - Article 2 of the Convention).

The Convention also requires each Party to take the appropriate measures to ensure the availability of adequate disposal facilities for the environmentally sound management of hazardous or other wastes, which shall be located, to the extent possible, within it, whatever the place of their disposal. The term disposal is broad as it includes also recovery and recycling. Lists of operations which are considered as disposal or recovery are presented in **Appendix I**.

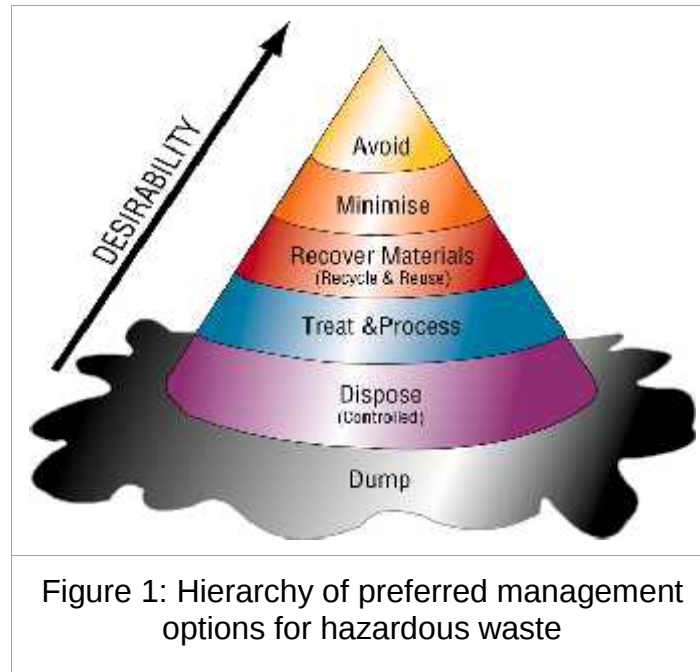
The Convention further requires each Party to ensure that it takes such steps as are necessary to prevent pollution due to hazardous wastes and other wastes arising from its management and, if such pollution occurs, to minimize the consequences thereof for human health and the environment. In addition, the Basel Convention requires that hazardous wastes or other wastes, to be exported, are managed in an environmentally sound manner in the State of Import or elsewhere.

2.5 Hazardous Waste Management Hierarchy

In deciding on the appropriate approach for managing any waste there is a hierarchy for decision making which addresses issues such as sustainability, health, safety, and environmental protection. It is applied to existing or proposed practices, examining and testing these at each level, starting at the top of the hierarchy. For hazardous waste the hierarchy is as follows (Figure 1):

- i) Prevent the generation of hazardous waste;
- ii) Where elimination is not possible apply means and techniques to reduce the quantity of hazardous waste generated
- iii) Minimize amount of waste for disposal by recycling, reuse and/or recovery. This includes the recovery of energy which may be available from the waste.

- iv) Treat waste to stabilize, immobilize, contain or destroy hazardous properties.
- v) Dispose of residues with minimum environmental impact.
- vi) Appropriately contain, isolate and store hazardous waste for which no acceptable treatment or disposal option is currently available.



a) Waste Prevention, Minimization, Recycling and Re-use

Avoiding and reducing the waste which needs treatment and disposal should be an early objective for an effective system of hazardous waste management. This is in view of the difficulties and cost implication in handling of the hazardous wastes and the serious adverse impacts that may result from improper management of such wastes. In this regard, cleaner production techniques can be used in achieving waste prevention and minimization. This may include using non-hazardous raw materials in production processes or through product or process redesign or recycling or reuse of resources available in the waste and thereby prevents releases of hazardous substances into the environment by all routes, directly or indirectly. In many cases the introduction of cleaner production measures brings economic benefits in addition to savings in waste disposal costs.

b) Treatment

A treatment technology refers to those techniques which decompose or break down or extract or bond the hazardous material into non-hazardous constituents or reusable state or into a form which can be easily managed. A number of hazardous waste treatment technologies are currently available used either as pre-treatment prior to final disposal and /or disposal methods in their own right. . Whichever is the case, the aim is to modify the physical and/or chemical properties of the waste. They may be classified as technologies aimed at reducing volume (precipitation, dewatering, phase separation), immobilization of

toxic components (solidification processes) or detoxification (thermal treatment by incineration, chemical treatment such as neutralization and biological treatment).

A particular technology is usually not appropriate for all hazardous waste, and the choice of the best practicable way of treating a given waste depends on many factors, including the availability and suitability of disposal or treatment facilities, safety standards and cost considerations.

c) Disposal

Final disposal of hazardous waste involves a number of options, but most involve disposal to land, if only for the residues from treatment processes. Properly designed, engineered and managed landfill may be used for disposal of hazardous wastes. Other option includes co-disposal with municipal where strict and careful operations need to be observed to prevent potential environmental pollution.

2.6 Storage and Transportation of Hazardous Waste

a) Storage

Particular care over the conditions of storage is essential including cool, dry, well ventilated conditions should be used for containerized waste. Containers or packages should not be stored in the open air or permeable surface or base material. All waste containers must be properly, unambiguously and indelibly labelled. Appropriate information for the emergency services should be displayed and emergency equipment such as protective clothing, breathing apparatus and fire extinguishers should be readily available.

b) Transportation

Safe transportation of hazardous waste from source or generator to storage or disposal is critical and needs careful planning, actual transportation and tracking. Requirements for transportation of hazardous waste by air, water, road and rail include classification of dangerous substances; packaging and labeling; suitability of the vehicle; proper training for drivers and other waste handlers; information (manifest) to be carried in the vehicle; and emergency procedures to be followed. Some of the key international instruments covering transportation of hazardous wastes include the following:

- i) Recommendations on the transport of dangerous goods (UNR);
- ii) International Civil Aviation Organization (ICAO) - shipment by air;
- iii) International Maritime Dangerous Goods Code (IMDG) - shipment by water;
- iv) United Nations Resolution on Traffic in Toxic and Dangerous Products and Wastes;
- v) Basel Convention on the Control of Transboundary Movements of hazardous wastes and Their Disposal; and
- vi) Bamako Convention Ban on the Import into Africa and Control of Trans-boundary Movements and Management of Hazardous Wastes within Africa

CHAPTER THREE:

OVERVIEW ON CURRENT MANAGEMENT PRACTICES OF HAZARDOUS WASTE

The current practices of hazardous waste management in the country depend on various factors, including the source, type and nature of the waste. Generally the hazardous waste generated in a considerable amount is from agricultural activities, industrial processes, health care, mining activities and imported second hand electronic and electrical equipment. In view of the limited capacity in terms of technology, human and financial resources leading to; inadequate enforcement of waste management laws and waste disposal facilities as a result the hazardous wastes are mostly disposed through the readily available means to the waste generator such as mixing with municipal waste; open dumping; incineration in Kiln plants and burning in self-designed incinerators.

3.1 Industrial Hazardous Waste

There are various categories of industries generating hazardous waste of which the amount, nature and management option depends on the type of the industrial operations. For example, paints and foam industries generates liquid waste mostly from cleaning operations of machines and mixing equipment. The hazardous liquid waste is either directly discharged in municipal ponds or sewerage system or contained in an on-site facility for treatment prior discharge. On the other hand, textile industries also generate liquid hazardous waste during production process. However, the management option is different from the latter as the waste are of large volume, thus requires special treatment facilities prior discharge. Some few industries have treatment ponds for the generated liquid waste. The challenge remains to those industries which do not have treatment facilities and discharge untreated liquid waste to the environment through municipal sewerage systems or near- by water streams.

Although, industries have liquid waste management options in place, the challenge still remain on inadequate regular monitoring of what is discharged to the environment, to whether meets the required hazardous liquid waste standards.

Majority of solid hazardous waste are generated from different sources including industrial operations, agricultural activities and pharmaceutical warehouses. The resulting wastes involve expired chemicals, pesticides and pharmaceuticals. Currently, these wastes are managed through containment and incineration or shipped to developed world whenever appropriate disposal options are not locally available.

Additionally, in some cases hazardous and non-hazardous wastes are often not segregated; hence are mixed together with municipal waste at disposal sites. Also there are minimal recovery and recycling activities for some types of industrial related waste materials.

3.2 Healthcare Waste (HCW)

The healthcare waste is generated in a wide variety of sources, starting from the hospital (a primary target), human and animal clinics, health centers, intermediate facilities, physician offices, research institutes (animal and human health) and homes (especially diabetic patients and HIV/AIDS patients. However, the mechanism to facilitate HCW management including expired drugs at ground level has not been fully instituted.

About 80% of the HCW generated is non infectious which can be disposed of as household waste. Hazardous and infectious waste accounts for the remaining 20%, of which the generation rate is about 0.41 kg/occupied bed per day for referral, regional and district hospitals or 0.03 kg/patient per day for health centres and dispensaries. Some of the medical facilities in Tanzania are characterized by inadequate and inappropriate waste disposal facilities..

3.3 Mining Waste

It is estimated that more than 12,500,000 tones of mining waste (overburden, tailings and waste rock excluding artisanal/small scale miners) is being generated annually from large scale mining activities. The nature of the waste varies considerably to include hazardous chemicals and highly toxic metals (mercury, lead, cadmium, arsenic, chromium, beryllium, silver, and thallium). However, waste generation by artisanal and small scale gold miners is uncontrolled as they lack awareness and capacity to manage mining waste. The waste generated which mainly constitutes tailing wastes and mercury contamination resulting from gold amalgamation is a threat to human health and the environment.

The current management practices of hazardous waste with exclusion artisanal and small scale gold miners include; recycling through back-filling excavated part of the rock or use in construction; disposing to the tailing storage facilities; piling of waste rocks and regeneration of natural vegetation.

3.4 Electronic Waste (e-waste)

Sorting or segregation of e-waste in general is non-existent in the country. The amount of e-waste generated is largely unknown. A crude estimate provides an indicative amount of e-waste generated in the country in the range of 18,000 - 33,000 tonnes annually. The amount of e-waste generated is considered to be far less than 0.5% of municipal solid waste generated in the country. However, regardless of its small quantity, the hazardous nature of the e-waste raises public concerns. Unfortunately, there are no functional schemes for management of e-waste in any of the Local Government Authorities in the country. In addition, the recovery and recycling of valuable materials from e-waste is very limited and is primarily informal (Figure 2). Also, there is no designated facility for environmentally sound treatment and/or disposal of e-waste in the country. This results into mixing of e-waste and municipal waste and thus accentuating risk to public health and the environment.



Figure 2: A hand-cart loaded with e-waste being ridden in Mwananyamala area, Dar es salaam, presumably *en route* to a scrap dealer.

3.5 Contaminated Sites

Contaminated sites, spills and abandoned industries are often never remediated or restored to their original conditions, so they continue to be sources of pollution to groundwater and soil through leachate, to air by volatilization and to surface water by surface run-off.

A number of sites have been identified to be contaminated with pesticides and other hazardous chemicals such as PCBs mainly from leaking electrical equipment. Some of the contaminated sites include Vikuge farm (Coast Region) which served as storage sites for obsolete pesticides and an abandoned fertilizer plant in Tanga Region which has been a potential source of environmental pollution.

CHAPTER FOUR:

LEGAL AND INSTITUTIONAL FRAMEWORK FOR MANAGEMENT OF HAZARDOUS WASTE

4.1 Hazardous Waste Related Policies and Legislation

4.1.1 Hazardous Waste Related Policies

4.1.1.1 National Environmental Policy (NEP)

Tanzania adopted the National Environmental Policy (NEP) in December 1997. Since environmental management is multi-sectoral as well as multidimensional, the policy formulated is a framework document, which gives direction on elements to be considered in order to mainstream environmental matters into sectoral policies. The importance of environmental management for sustainable development has been clearly stipulated in the NEP.

The objectives of the Policy include ensuring sustainability, security, and equitable use of resources to meet the basic needs of the present population without compromising those of the future generations, without degrading the environment or risking health or safety. The policy also focuses on preventing degradation of land, water, vegetation and air, which are crucial elements for life. The policy advocates for development and application of environmentally friendly pest control methods, and underscores the need for promotion and application of environmentally friendly technologies such as recycling reuse and safe waste disposal.

4.1.1.2 National Health Policy of 2007

The National Health Policy is aimed at providing directions towards improvement and sustainability of the health status of all the people by reducing disability, morbidity and mortality, improving nutrition status and raising life expectancy. The policy recognizes that, good health is the major resource essential for poverty eradication and economic development.

The policy has specific provisions for;

- promoting occupational health services whereby, the Ministry of Health and Social Welfare through implementation of this policy ensure worker's protection against all occupational hazardous which may occur in the work places such as industries, estates, plantations and other high risk institutions.
- Guidelines on proper disposal practices of waste/expired chemicals
- Adequate national capacity to ensure safety through management and control of chemicals and their products.
- Raising public awareness on safe chemical use and handling

4.1.1.3 Agricultural and Livestock Policy (1997)

The policy emphasizes on promotion of Integrated Pest Management (IPM) through plant protection and agricultural extension services. It also requires strengthening of agrochemicals registration and monitoring. However, the policy does not provide specific guide on Persistent Organic Pollutants (POP) Pesticides. This is due the fact that by the time of formulating of the policy POPs issues were not yet prominent. However, it stresses on implementation of IPM. Tanzania embarked on IPM programme since 1992 and to date pest management technologies packages for cotton, maize, coffee and vegetables have been developed together with farmers and are being implemented. This has resulted in reduced use of pesticides. Also various substitutes are already in use. These include chemical, biological and botanical pesticides.

4.1.1.4 The Sustainable Industrial Development Policy (1996-2020)

The Sustainable Industrial Development Policy (SIDP) gives a framework of broad on factors, which influence the direction of the country's industrialization process for the next 25 years. The national goals, towards which the industrial sector is geared, include human development and creation of employment opportunities, economic transformation for achieving sustainable growth, external balance of payments, environmental sustainability and equitable development. Under the section on "sound environmental management" the policy framework states that; "In order to ensure promotion of environmentally friendly and ecologically sustainable industrial development, the following will be implemented:

- (a) The government will carry out sensitization on environmental awareness in its broader application;
- (b) The government will forge deliberate and mandatory devices to reactivate legal mechanisms to enable involved institutions to be more effective in matters of environmental management;
- (c) An appropriate motivational mechanism will be provided within the Investment Promotion Act geared to cater for promotion of investments which contain anti-pollution programmes;
- (d) Environmental Impact Assessment (EIA) and appropriate mitigation measures will be enforced for all projects at implementation stage; and
- (e) The government will promote the continuous application, of an integrated preventive environmental strategy to industrial processes, products and services which will include propagating efficient use of raw materials and energy, elimination of toxic or dangerous materials, as well as reduction of emissions and wastes at source.

In this regard, the government will develop the capacity within its institutional machinery and support other initiatives designed to enhance application of cleaner production concept as an important complement to end-of-pipe pollution control. Therefore the policy promotes the reduction and eventual elimination of discharges/emissions of toxic chemicals. Therefore, issues of Polychlorinated Biphenyl (PCBs), Polychlorinated Dibenzo Dioxins (PCDD) and Polychlorinated Dibenzo Furans (PCDF) from industrial processes, can be covered in this respect.

4.1.1.5 National Energy Policy (2003)

The policy objectives are to ensure availability of reliable and affordable energy supplies and their use in a rational and sustainable manner in order to support national development goals. The policy therefore aims to establish an efficient energy production, procurement, transportation, distribution and end-use systems in an environmentally sound manner. The policy statements regarding environment, health and safety are: promoting environmental impact assessment as a requirement for all energy programmes and projects; promoting energy efficiency and conservation as a means towards cleaner production and pollution control; promoting development of alternative energy sources including renewable energies and wood fuel end-use efficient technologies to protect woodlands; promoting disaster prevention, response plans, and introducing standards for exploration, production, conversion, transportation, distribution, storage and fuel end-use.

4.1.1.6 National Water Policy – July 2002

Water is one of the most important agents to enable Tanzania achieve its Development Vision objectives (both social and economic), such as eradicating poverty, attaining water and food security, sustaining biodiversity and sensitive ecosystems. The revised National Water Policy and subsequent reviews and reforms of existing laws, institutional framework and structures are aimed at meeting the objectives of Water and the Tanzania 2025 Development Vision.

It is now more than ten years since the 1991 National Water Policy was launched. During this period, many changes have taken place in the sector with major emphasis on active participation of communities, private sector and local governments as the role of central government in services provision diminishes.

Tanzania signed Agenda 21, which is an outcome of United Nations Environment Meeting in Rio de Janeiro. The Agenda emphasized all nations to protect natural resources including water resources against pollution and conservation of the ecosystems. The Policy also emphasized that the Central Government has a responsibility of protecting water sources while environmental protection was not accorded its due importance.

4.1.2 Hazardous Waste Related Principal and Subsidiary Legislation

4.1.2.1 The Environmental Management Act No. 20 of 2004

The Act provides for legal and institutional framework for environmental management in the country. It mandates Local Government Authorities (LGAs) to issue and enforce guidelines and standards on management of hazardous waste.

It further prohibits import or export of hazardous waste without a permit issued by the Minister responsible for Environment. It further requires any movement of hazardous waste within and through the country be conducted in a manner that prevents or minimizes adverse effects to human health and the environment.

4.1.2.2 The Local Government (Urban Authorities) Act No. 8 of 1982 and the Local Government (District Authorities) Act No. 7 of 1982

The Acts mandate Local Government Authorities, among others, to facilitate provision of sanitation and waste management services. In this regard, the

management of hazardous waste is implicitly addressed although there is no specific reference to hazardous waste management issues.

4.1.2.3 The Industrial and Consumer Chemicals (Management and Control) Act of 2003

The Act provides for the management and control of the production, import, transport, export, storage, dealing and disposal of industrial and consumer chemicals in the country. The law provides for the registration, restrictions, prohibition and inspection of chemicals. Furthermore it has provisions for safe handling, chemical wastes, accidents; management of spills and contaminated sites and decommissioning of plants.

4.1.2.4 The Water Resources Management Act No. 11 of 2009

The main objective of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that among others meets the basic human needs of present and future generations, prevents and controls pollution of water resources and protects biological diversity especially the aquatic ecosystems. Furthermore, it requires carrying out an Environmental Impact Assessment for any development in water resource areas or watershed.

4.1.2.5 The Water Supply and Sanitation Act No. 12 of 2009

The main objective of the Act is to ensure universal access to efficient, effective and sustainable water supply and sanitation services for all purposes by taking into account, among others, protection and conservation of water resources; and development and promotion of public health and sanitation.

4.1.2.6 The Public Health Act No. 1 of 2009

The Act provides for the promotion, conservation and maintenance of public health with a view of ensuring comprehensive functional and sustainable public health services. It prohibits disposal of hazardous waste on land or water body unless Environmental Health Impact Assessment is carried out.

4.1.2.7 The Plant Protection Act of 1997

The Act provides for prevention of the introduction and spread of harmful organisms, to ensure sustainable plant and environmental protection; to control the importation and use of plant protection substances; and to regulate export and imports of plants and plant products.

4.1.2.8 The Mining Act No 14 of 2010

The Act provides for regulation on prospecting and processing of, and dealing in minerals. The Act requires all holders of mining licenses to take appropriate measures for the protection of the environment in accordance with the Environmental Management Act including undertaking EIA in mining activities.

4.1.2.9 The Occupational Safety and Health Act of 2003

The Act provides for protection of worker's safety, health and their welfare at places of work as well as other persons at work against hazards to health and safety arising out of or in connection with activities of persons at work.

4.1.2.10 The Merchant Shipping Act No.21 of 2003

The Act provides for, among others, pollution prevention and protection of marine environment and marine security. It prohibits discharge of oil or oily mixture anywhere at sea unless under special circumstances.

4.1.2.11 The Merchandise Marks Act of 1963

The Act prohibits supply of fake products, unsafe products and those which do not meet specific standards some of which may otherwise fall under hazardous waste category.

4.1.2.12 Environmental Management (Hazardous Waste Control and Management) Regulations (2009)

The Regulations control all categories of hazardous waste and address generation, storage, transportation, treatment and disposal of hazardous waste and their movement into and out of Mainland Tanzania. They require hazardous waste management be guided by principles of environment and sustainable development namely, the precautionary principle; polluter pays principle; and the producer extended responsibility. The Regulations places responsibility to the generator of hazardous waste for the sound management and disposal of such waste and shall be liable for damage to the environment and injury to human health arising thereby. The regulations further recognizes management and control of pesticides, radioactive and industrial and consumer chemical waste to regulated under respective legislation

4.2 Institutional Framework

4.2.1 Vice President's Office - Division of Environment

- i) Issue licenses and permits for hazardous waste covered under the Environmental Management (Hazardous Waste Control and Management) Regulations, 2009
- ii) Ensure environmentally acceptable management procedures, emission levels and disposal methods are maintained.
- iii) Coordinate and monitor the movement of hazardous waste from the generator to final disposal as described in the Environmental Management (Hazardous Waste Control and Management) Regulations, 2009.

4.2.2 National Environment Management Council (NEMC)

- i) Monitor management of hazardous wastes and emission levels of pollutants from major generation sources;
- ii) Enforce environmental quality standards;
- iii) Promote proactive compliance including training, provision of guidelines and awareness raising;
- iv) Continuously monitor safety and impacts on human health and environment of hazardous wastes and other wastes;
- v) Verify contingency plans and emergency preparedness in industrial facilities to integrate hazardous waste management;
- vi) Monitor management and remediation of contaminated sites; and
- vii) Regulate disposal of hazardous waste and sites contaminated with hazardous wastes as described in the Environmental Management (Hazardous Waste Control and Management) Regulations, 2009.

4.2.3 Tanzania Atomic Energy Commission (TAEC)

- i) Monitor and regulate the safe use of nuclear technology in the sectors of health, agriculture, animal production, industrial and non-destructive tests;
- ii) Control through registration and licensing of the importation, exportation, movement, possession or use of atomic energy and radiation sources;
- iii) Provide technical assistance in nuclear and radionuclide waste management;
- iv) Formulate and enforce radioactive substances and waste management standards of safety for the protection of health and the minimization of danger to life and property ;

4.2.4 Local Government Authorities (LGAs)

- i) Inventory of hazardous waste generation in their jurisdictions;
- ii) Enforcing hazardous waste related legislation, regulations and by-laws;
- iii) Facilitate provision of hazardous waste disposal facilities;
- iv) Responding to hazardous materials accidents or spills;
- v) Public awareness and education on hazardous waste management;

4.2.5 Government Chemist Laboratory Agency (GCLA)

- i. Regulate and coordinate management of industrial and consumer chemicals hazardous waste.
- ii. In collaboration with other stakeholders, ensure that risk reduction measures against industrial and consumer chemicals hazardous waste, including establishment of appropriate disposal facilities.

4.2.6 Generators/Owners of Hazardous Waste

- i) Is primarily responsible for management and eventual disposal of hazardous waste in environmentally sound manner.
- ii) To keep a complete record of the types, quantities and characteristics of hazardous waste
- iii) Submit quarterly reports to the respective regulatory authorities.
- iv) Ensure each container of hazardous waste must be properly labelled indicating, at the minimum:
 - date of which storage period begins
 - composition and physical state of the waste
 - properties of the waste (e.g. flammable, reactive); and
 - name and address of the generator;
 - marked with the word “HAZARDOUS WASTE” both in English and Swahili
- v) Ensure that hazardous waste is stored in specified containers and follows conditions for proper storage, and conduct regular inspection. ;
- vi) To segregate hazardous waste at source from non- hazardous waste
- vii) Avoid placing incompatible hazardous waste into the same container;
- viii) Institute contingency plans and emergency preparedness;
- ix) Develop management plans and undertake remediation of contaminated sites
- x) At all times there are must be at least one employee either on the premises or on call with responsibilities for coordinating all emergency response measures
- xi) To dispose hazardous waste only at the notified/approved disposal facility
- xii) When transporting/moving hazardous waste off the premises, a Generator must;

- use only specified licensed transporters and facilities registered or permitted by NEMC or other relevant authorities
- Fulfil the pre- transport requirements before transporting hazardous waste.

4.2.7 Transporter of Hazardous Waste

- Obtaining registration license/permit from the Division of Environment–Vice President's Office or other relevant authorities for transporting hazardous waste (in addition to any other permits/licenses that may be required);
- Transporting the wastes in appropriate containers and be transported only in the specified transport vehicles at all times;
- Delivering the waste at designated points only;
- Informing the Division of Environment–Vice President's Office, Local Government Authorities or other relevant authorities immediately in case of spillage, leakage or other accidents during transportation;
- Training the driver and other employees with regard to the emergency response measures to be taken during the transportation of hazardous waste;
- Clean up in case of contamination;
- Ensures that cleaning of vehicles should be carried out at places or where there are facilities to treat such wastewaters; and
- To carry documents/manifest for the waste at all times during transportation.

4.2.8 Owner or Operator of Hazardous Waste Storage, Treatment and Disposal Facility

- Must apply to the Director of Environment VPO or other relevant authority to operate a waste disposal facility
- Carry out Environmental Impact Assessment (EIA), prior to establishment of these facilities;
- Obtain license/permit from VPo-DoE and Municipal Authorities or other relevant authorities;
- Institute Environmental Management System (EMS) for each of the facility to help ensure compliance to relevant laws and regulations;
- Provide security to prevent accidental or unauthorized entry into the facility;
- Maintain all containers so that they are in good condition, compatible with contents, closed except when adding or removing hazardous waste and managed to avoid rupture or leaks;
- Provide secondary containment system for containers holding liquid hazardous waste to prevent releases of hazardous waste into the environment. Secondary containment is emergency short-term storage designed to hold leaks from hazardous waste management units.
- Ensure the facility is inspected regularly, preferably on a weekly basis;
- Ensure Occupational Health and Safety standards are adhered to by all workers within a facility.
- Must ensure post closure care for each waste storage, treatment, and or disposal facility begins after closure of the facility,
- Ensure availability of area for the facility
- Must specify types of wastes to be handled, stored, treated and or disposed
- Ensure facilities are available for managing of these wastes
- Ensure all effluent and ground water quality is monitored regularly.

CHAPTER FIVE:

WASTE SEGREGATION AND STORAGE

5.1 Source Segregation

For segregation to work effectively the following should be done:

- i) Do not mix waste hazardous waste with general (non-hazardous/municipal) waste;
- ii) Provide colour coded and labelled hazardous waste receptacles and should be positioned close to the point of hazardous waste generation;
- iii) The receptacles should be replaced when three-quarters full;
- iv) The receptacles should be securely tied and appropriately labelled;
- v) Liquid or solidified hazardous waste should be placed in a rigid leak proof container; and
- vi) Arrangement to routinely and regularly transport hazardous waste from point of generation to storage area should be in place.

5.2 General Requirements for Hazardous Waste Storage

Hazardous waste should be stored so as to prevent or control accidental releases the environment by observing the following:

- i) Waste is stored in a manner that prevents the commingling or contact between incompatible wastes, and allows for inspection between containers to monitor leaks or spills. Examples include sufficient space between incompatibles or physical separation such as walls or containment curbs
- ii) Store in closed containers away from direct sunlight, wind and rain
- iii) The storage site should be at least 15m from site boundary (where possible).
- iv) The storage site must have impermeable base material so that it can contain waste materials in case of accidental leakages or spills.
- v) Secondary containment systems should be constructed with materials appropriate for the wastes being contained and adequate to prevent escape to the environment
- vi) Secondary containment should be provided wherever liquid wastes are stored in volumes greater than 1,000 liters.
- vii) The available volume of secondary containment should be at least 110 percent of the largest storage container, or 25 percent of the total storage capacity, whichever is greater in that specific location
- viii) Provide adequate ventilation where volatile wastes are stored.
- ix) During storage, height of stacked containers should be limited for safety purposes as will be prescribed by NEMC or other relevant authorities;
- x) The storage area should be provided with washing facilities to be used in case of accidental contact with hazardous waste;
- xi) The store should be equipped with absorbent material to help cleaning up in case of spills;
- xii) Preparing and implementing spill response and emergency plans to address their accidental release;
- xiii) Avoiding underground storage tanks and underground piping of hazardous waste, where possible.

5.2.1 Additional Storage Requirements

- Label each container to identify its contents;
- Clearly identify (label) and demarcate the area, including documentation of its location on a facility map or site plan;
- Provide drainage to prevent spills or leaks from leaving the site and to prevent run off from entering the site.
- Segregate incompatible wastes by chemical compatibility to ensure safety of the public, workers and facility;
- The store should be in a secure area with controlled access. Only persons authorized to enter and trained in hazardous waste handling procedures should have access to the storage site.
- Regular inspections should be carried out and recorded.
- Containers should be placed so that each container can be inspected for signs of leaks or deterioration. Leaking or deteriorated containers should be removed and their contents transferred to a sound container;
- Maintain a record of the type and amount of waste in storage; and
- Storage sites have emergency response equipment appropriate for the hazardous waste stored on site.

5.2.2 Requirements for hazardous waste compatibility during storage

- Incompatible hazardous wastes should be segregated from one another during storage as well as transportation;
- In some instances segregation of incompatible hazardous waste may be achieved through keeping some distances between incompatible hazardous waste; or by compartment storage

Figure 3: Hazardous Waste Compatibility among different categories and potential incompatibility risks

CLASS	1.1	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.1	12.1
1.1	OK	SEPARATE	REFER TO MSDS	SEGREGATE	SEGREGATE	SEGREGATE	SEGREGATE	SEGREGATE	ISOLATE	SEPARATE	SEPARATE	SEPARATE
2.1	SEPARATE	OK	SEPARATE	SEPARATE	REFER TO MSDS	SEGREGATE	REFER TO MSDS	REFER TO MSDS	SEGREGATE	REFER TO MSDS	SEPARATE	SEPARATE
3.1	REFER TO MSDS	REFER TO MSDS	OK	REFER TO MSDS	REFER TO MSDS	REFER TO MSDS	REFER TO MSDS	REFER TO MSDS	REFER TO MSDS	REFER TO MSDS	REFER TO MSDS	REFER TO MSDS
4.1	SEGREGATE	SEPARATE	REFER TO MSDS	OK	SEPARATE	SEGREGATE	SEGREGATE	SEGREGATE	ISOLATE	SEPARATE	SEPARATE	SEPARATE
5.1	SEGREGATE	REFER TO MSDS	REFER TO MSDS	SEPARATE	OK	SEPARATE	SEGREGATE	SEGREGATE	SEGREGATE	SEPARATE	REFER TO MSDS	REFER TO MSDS
6.1	SEGREGATE	SEGREGATE	REFER TO MSDS	SEGREGATE	SEPARATE	OK	SEPARATE	SEGREGATE	ISOLATE	SEPARATE	SEPARATE	SEPARATE
7.1	SEGREGATE	REFER TO MSDS	REFER TO MSDS	SEGREGATE	SEGREGATE	SEGREGATE	SEPARATE	SEPARATE	SEGREGATE	SEPARATE	SEPARATE	SEPARATE
8.1	SEGREGATE	REFER TO MSDS	REFER TO MSDS	SEGREGATE	SEGREGATE	SEGREGATE	SEPARATE	REFER TO MSDS	SEGREGATE	SEPARATE	SEPARATE	SEPARATE
9.1	ISOLATE	SEGREGATE	REFER TO MSDS	ISOLATE	SEGREGATE	ISOLATE	SEGREGATE	SEGREGATE	OK	SEPARATE	SEPARATE	SEPARATE
10.1	SEPARATE	REFER TO MSDS	REFER TO MSDS	SEPARATE	SEPARATE	SEPARATE	REFER TO MSDS	SEPARATE	SEPARATE	OK	REFER TO MSDS	REFER TO MSDS
11.1	SEPARATE	SEPARATE	REFER TO MSDS	SEPARATE	REFER TO MSDS	SEPARATE	REFER TO MSDS	SEPARATE	SEPARATE	REFER TO MSDS	OK	REFER TO MSDS
12.1	SEPARATE	SEPARATE	REFER TO MSDS	SEPARATE	REFER TO MSDS	SEPARATE	REFER TO MSDS	SEPARATE	SEPARATE	REFER TO MSDS	REFER TO MSDS	OK

SEPARATE Unhazardous goods of these two classes should be kept separate or within a fenced or other suitable control measure. Consult Material Safety Data Sheet or supplier.	SEGREGATE Dangerous goods of these two classes are likely to interact with each other in such a way as to significantly increase risk and should not be kept in the same room unless it can be demonstrated that this is safe to do so. Consult MSDS for further guidance.
ISOLATE Dedicated outdoor storage facilities are recommended. Adequate separation from other buildings and boundaries is required. Consult MSDS for further guidance.	REFER TO MSDS Segregation of these two classes may be necessary. Refer to the MSDS for further guidance. All Class 9 dangerous goods should be segregated in accordance with the rules.
OK Unhazardous goods of these two classes may be stored in the same room unless it can be demonstrated that this is safe to do so. Consult the MSDS or supplier about specific risks for individual substances.	

For further information refer to the WorkCover/MSM Code of Practice Storage of Dangerous Goods and Australian Standard 2865: The storage and handling of listed Classes of Dangerous Goods, in Packages and Intermediate Bulk Containers.	
Class Types:	
Class 2.1 – Flammable Gas	Class 2.2 – Non Flammable Non Toxic Gas
Class 2.3 – Toxic Gas	Class 3 – Flammable Liquid
Class 4.1 – Flammable Solid	Class 4.2 – Spontaneously Combustible
Class 4.3 – Dangerous When Wet	Class 5.1 – Oxidising Liquid
Class 5.2 – Organic Peroxide	Class 6 – Toxic
	Class 8 – Corrosive

5.2.3 Storage Options

- i) *Containers*: Most containers are suitable for many types of waste, from liquids, sludge to bulky solids. The most common hazardous waste container is the 200 Litre drum. Other examples of containers are tanker trucks, railroad cars, buckets and special bags.
- ii) *Tanks*: Tanks are widely used for storage or accumulation of hazardous waste because they can accommodate large volumes. Tanks can be used to contain hazardous waste at treatment, storage and disposal facilities.
- iii) *Containment buildings*: Containment buildings are completely enclosed, self-supporting structures used to store or treat non-containerized hazardous waste.

CHAPTER SIX:

PACKAGING, LABELLING AND TRANSPORTATION OF HAZARDOUS WASTE

6.1 Packaging

- i) Hazardous wastes should be contained, packed or stored in a manner as provided under regulation 12 (2) of the Environmental Management (Hazardous Waste Control and Management) Regulations, 2009 or any other relevant laws and regulations.
- ii) Without prejudice of (i), the containers shall be capable of containing or storing the waste in an environmentally sound manner without any risks to human health and the environment, Figure 4 shows some of the recommended containers.
- iii) Every container which is used in the storage of hazardous wastes shall be labelled, and after use, be punctured and disposed of in a recommended manner.



6.2 Labelling

6.2.1 Types of labels

All containers must be clearly marked indicating waste type and hazard. There are two types of labels required and these are hazard labels and handling instruction labels. Hazard labels are in the shape of a square set at 45° and are required for most dangerous goods except for magnetized materials (Table 1 and Figure 5).

Handling instruction labels are available in various rectangular shapes and these are required in addition to hazard labels for some dangerous goods.



Figure 5: Labels on a hazardous waste containing drum indicating waste type and associated hazard

6.2.2 General requirements

- i) All hazardous waste containers and transport vehicles must be clearly marked with the contents indicated. The marking must be irremovable, waterproof and firmly attached (Figure 5).
- ii) Labels should be placed on the surface(s) of the package bearing the proper shipping name.
- iii) When more than one hazardous material is packaged in a container, more than one kind of label will be needed.
- iv) When hazardous materials having different hazard classes are packed within the same packaging, or within the same outside container or overpack, the outside container or over-pack must be labelled as required for each class of hazardous material contained therein.
- v) When two or more different labels are required, they must be displayed or affixed next to each other. One hazard label is required on a package for each hazard class.

6.2.3 Required details on the label

- i) Every container used for storage of hazardous wastes shall have a label written in **English or Swahili language** affixed onto it specifying the following:
 - a) identity of the hazardous waste;
 - b) name and address of the generator of wastes;
 - c) net contents;
 - d) normal storage stability and methods for safe storage;

- e) name and percentage by weight of other ingredients or half-life of radioactive material;
- f) warning or caution statements which may include all, some or any of the following as appropriate -
 - i) the words "WARNING" or "CAUTION";
 - ii) the words "DANGER! Keep away from unauthorized persons";
 - iii) the words "POISON" (marked indelibly in red or white background);
 - iv) a pictogram of a skull and crossbones;
- g) a statement of first aid measures including the antidote when inhaled or ingested and a direction that a physician must be contacted immediately;
- h) adequate directions for handling should be included in accompanying leaflets including safety precautions in transporting, storage, and disposal of hazardous wastes and measures for cleaning any equipment used; and
- i) directions for the disposal of the container and hazardous wastes
- ii) Liquid hazardous materials must be packed with the closures of the inside packaging in the upright position.
 - Must have marking "THIS SIDE UP" or "THIS END UP" on the outside packaging.
 - Should use arrow symbol on the outside packaging to show upright orientation of packages.

6.3 General requirements for Transportation

- i) Use approved tanks and containers specially designed, in good condition, compatible with the waste and are adequately secured in the transport vehicle;
- ii) Adequately label all transport tanks and containers to identify the contents, hazards, and actions required in various emergency situations.
- iii) Transportation of hazardous waste should have a permit issued by the Director of Environment and local government or other relevant authority to contractors with approved vehicles and trained drivers;
- iv) Each vehicle carrying prescribed hazardous waste should be identified using the appropriate hazard symbols;
- v) The carrier must ensure that he has the necessary information on the wastes to be transported and has prepared an emergency plan in the event of spillage;
- vi) Carrying passengers is strictly prohibited and those associated with the waste handling should be permitted only in the cabin;
- vii) Vehicles transporting hazardous waste must have first aid equipment, fire extinguisher according to substance carried and trained personnel;
- viii) Drivers and handlers involved in transporting hazardous wastes must be suitably qualified and should observe the following:
 - not to smoke, take drugs or alcohol;
 - make inspections at set frequencies;
 - know emergency procedures;
 - attend cargo at all times;
 - not exceed permitted working hours; and
 - use personal safety equipment.

- ix) Training is required for drivers and hazardous waste handlers, and should be an ongoing process and not a single event.
 - The training should be provided within 90 days for new employees.
 - It should be repeated at two-year intervals for waste handlers while drivers must be trained annually.
 - It is strongly recommended that the training should be supported by written material for later reference and to be regularly updated.
- x) Personnel working with hazardous waste should be given regular medical examinations to check overall fitness. They should be also provided with immunization, good nutrition, first aid equipment and antidotes to toxic substances.

CHAPTER SEVEN:

TREATMENT AND DISPOSAL OF HAZARDOUS WASTES

Treatment and disposal of hazardous waste entails any process that changes the typical physical, chemical or biological characteristics of a waste to minimize its threat to health and environment.

7.1 Treatment

Hazardous waste treatment involves almost anything that can be done to a hazardous waste prior to disposal. Any method, technique or, process designed to change the physical, chemical, or biological character or composition of the hazardous waste, so as to neutralize the waste or to make the waste less hazardous and thereby safer for transport, increase potential for recovery, reuse or storage, or to reduce waste volume. The treatment methods might include among others precipitation, evaporation, filtration or ion exchange technology.

7.2 Disposal of Hazardous Waste

Disposal is the placement of hazardous waste with or without treatment in the designated facility which can permanently contain the waste and prevent the release of harmful substances. The most common hazardous waste disposal practices includes placement in the land disposal unit such as land fill, surface impoundment, waste pile, land treatment unit or injection well.

In the context of these guidelines, disposal of hazardous waste should follow the procedures provided in Annex II to these Guidelines:

7.2.1 General Requirements for Disposal of Hazardous Waste

- i) The generator is required to determine and follow the proper management method of the waste. Sources of assistance include:
 - Regulatory Authorities (VPO-DoE, NEMC and other relevant authorities)
 - Existing relevant legislation, regulations and guidelines.
- ii) Open burning of hazardous waste is not allowed.
- iii) Treated hazardous waste may be directed for land filling or to a municipal sewage system provided that the national effluent standards are met.
- iv) Different types of hazardous wastes should not be mixed together in the same container.
 - It is important to control the quality of any waste to ensure it can be recycled or disposed of properly.
 - Contaminating wastes with other wastes may prevent reuse/recycling options and increase disposal costs.
- v) Hazardous waste containers must be properly managed. In addition,
 - Containers should be emptied, to the greatest extent possible, using regular handling procedures, or by triple rinsing with an appropriate cleaning agent.
 - They should be rendered unusable by puncturing or crushing prior to disposal.
 - This is especially of concern for containers which could eventually be used for water or food storage.
 - Rinsing must be managed according to their waste characteristics.

CHAPTER EIGHT:

ADMINISTRATIVE PROCEDURES FOR HANDLING OF HAZARDOUS WASTES

8.1 Administrative Procedures for Transboundary Movement of Hazardous Waste

8.1.1 National Focal Point and Competent Authority

The Department of Environment – Vice President’s Office is the National Focal Point and Competent Authority for the operation of the prior informed consent procedure for the export, transit or other trans-boundary movement of hazardous waste in accordance with the provisions of the Basel Convention.

The Department closely liaise with the designated national authorities of other States under any international convention or arrangement to which the United Republic of Tanzania is a Party and international organizations. In addition, the Department disseminates information on hazardous and other wastes management to the public.

8.1.2 Export Permit

A person intending to export wastes from the United Republic should complete a movement document and submit it to the Director of Environment and a copy of the application to the Commissioner of Customs of the Tanzania Revenue Authority.

The Director should then submit to the Competent Authority of the Country of Import movement documents of the applicant 60 days before the date of export and pay fees for a movement document and import license prescribed under the Environmental Management (Fees and Charges) Regulations, 2007.

The Director shall issue a waste export license after considering the movement document form submitted. Where a license is issued, a copy of the license should be sent to Tanzania Revenue Authority by the Applicant for the necessary customs verification and control. It should be noted that an Export Permit will only be valid for the specific export transaction and not for any subsequent export transaction. The permit is not transferable.

The Director shall not grant a license to export hazardous waste where -

- a) the Applicant has the technical capacity or suitable disposal sites for disposing the waste in environmentally sound and efficient manner;
- b) the wastes in question are not required as raw material for recycling or recovery purposes in the country of import; and
- c) the export is not in accordance with an agreement or arrangement that conforms with the requirement of Article 11 of the Basel Convention.

The Director shall not grant a license for importation of hazardous waste where;

- a) the applicant does not have a technical capacity, and suitable facility for disposing the hazardous waste in an environmentally sound manner.
- b) the hazardous waste is not generated from African country of origin.

8.1.3 Transit of Hazardous Waste

Any person intending to transit hazardous waste destined for another country through the territory of Tanzania will require a valid Prior Informed Consent for such movement issued by the Director of Environment, the prescribed document for the trans-boundary movement of waste and any other documents prescribed by the Competent Customs Authority.

Any transit cargo of hazardous waste passing through Tanzania, for purpose of export or import, shall not be unloaded for repackaging. It shall also be escorted by officers under the Director of Environment, Custom Officers and any other officers that the Director of Environment may decide at the cost of the Importer or Exporter of the waste.

8.1.4 Port of Entry and Routes for Wastes

A licence issued should be only entitling the licensee to transport wastes through the customs points of entry designated in such a licence. No hazardous waste shall be transported by water in inland waters, except hazardous waste generated from islands within the territorial jurisdiction of the United Republic.

8.1.5 Insurance Cover or Guarantee.

Any export, transit or import of hazardous waste should be accompanied by an insurance cover or guarantee approved by the Director of Environment covering the risks likely to arise from exportation and importation of wastes.

8.1.6 Procedure for Trans-boundary Movements

The regulatory system and procedures for trans-boundary movements of hazardous wastes is based on the Basel Convention control system and consists of three key elements: **Notification**, **Consent** and the accompanying **Movement Document**.

i) Notification

A trans-boundary movement requires all Competent Authorities of countries concerned to be notified. The purpose of the notification is to provide the Competent Authorities of the countries concerned with detailed, accurate and complete information on the waste itself, on the proposed disposal operation, and other details relating to the proposed shipment (refer **Appendix II**). A notification usually covers only one type of waste, and may cover only one shipment. However, the notification may cover several shipments of wastes over a maximum period of one year, provided that the wastes in each shipment has the same physical and chemical characteristics and will be regularly shipped to the same Disposer via the same Customs offices for entry and exit.

Before the shipment can be allowed to start, the Generator and the Disposer must sign a contract for the disposal of the wastes. Upon conclusion of the contract, the Generator or Exporter should inform the Competent Authority of the Country of Export of this proposed movement. If the Competent Authority has no objection to this export, it will transmit a Notification Document to the Competent Authority of the Country of Import and the Competent Authorities of all Countries of Transit.

ii) Consent and Issuance of Movement Document

Upon receipt of the Notification Document, the Competent Authority of the Country of Import must provide its written consent (the consent can be granted on the basis of certain conditions), or denial (after having asked for further clarifications, if necessary) to the Notifier. Often it will send copies of its final response to the Competent Authorities of all countries concerned.

The Competent Authority of the Country of Import must also confirm the existence of a contract between the Exporter and Disposer, specifying the environmentally sound management of the waste in question. The Competent Authority of any Country of Transit must acknowledge receipt of the Notification document, and provide its written consent to the Country of Export (with or without conditions), or denial, within a period of **sixty (60) days**.

Once the relevant Competent Authorities have established that all the requirements of the Convention have been met, and have agreed to the movement, the Competent Authority of the Country of Export can proceed with the issuance of the Movement Document (refer **Appendix IV**), which contains detailed information about the shipment, and authorize the shipment to start. The Movement Document must accompany the consignment at all times from the time of departure from the waste generator to the arrival of the consignment at the Disposer in another country. To ensure consistency between the information provided in the Notification Document and the Movement Document (and to reduce possible abuse), the duly completed Notification should always accompany the Movement Document.

iii) Confirmation of receipt of waste and disposal

Upon delivery of the waste at the Disposer's premises, the latter signs the Movement Document and returns it to the Competent Authority of the State of Export and to the Generator confirming the receipt of the hazardous waste in question (refer **Appendix IV**). Disposer must confirm when the disposal has taken place, according to the terms of the contract, as specified in the Notification Document. If the Competent Authority of the Country of Export has not received the confirmation that disposal has been completed, it must inform the Competent Authority of the Country of Import accordingly.

8.2 Administrative Procedures for Handling Hazardous Waste in the Country

8.2.1 License for Transportation or Storage of Hazardous Waste

Any person intending to transport or to store hazardous waste on his premises should submit application to the Director of Environment – Vice President's Office or respective authority.

The Director of Environment may issue a license for transportation of hazardous waste or for storage of hazardous waste where –

- a) he is satisfied that the applicant has adequate and appropriate facilities and equipment to transport or store hazardous waste on his premises without causing significant damage to public health and the environment;
- b) He is satisfied with the applicant's collection schedule of hazardous waste and, in the case of storage of hazardous waste, that premises are adequate

for storing the category of hazardous waste for which the license is required;
and

- c) He has published his intention to issue the license by notice in the *Gazette* and in one or more local newspapers of daily circulation in the United Republic **thirty days before** the issuance of licence.

A licensee to transport hazardous waste is obliged to ensure that -

- a) the collection and transportation of the hazardous waste is conducted in a manner that will not cause scattering of the waste;
- b) the vehicles for transportation and other means of conveyance of hazardous waste follows the approved scheduled routes from the point of collection to the disposal site or plant or facility;
- c) the personnel involved in the collection, transportation or storage of waste are provided with -
 - i) adequate protective and safety clothing;
 - ii) adequate appropriate equipment or facilities for loading the waste;
 - iii) safe and secure facilities in the vehicles used for transporting waste; and
 - iv) Proper training and information.

A licensee to transport hazardous waste or store hazardous waste is also required to ensure that all employees involved in the collection, transportation or storage of hazardous waste undergo such annual medical check-up as may be commensurate to the risks faced by the employees and, on completion of the medical check-up, the licensee should submit a medical report of fitness in respect of each employee to the Director of Environment.

The Director of Environment may, at any time, subject the person involved in the collection, transportation or storage of waste to a medical check-up and the costs of the examination shall be borne by the licensee.

The license to be issued shall be **valid for one year** and may be renewed by the Director of Environment upon application.

8.2.2 Licence to Operate a Hazardous Waste Treatment Plant or Disposal Site

Any person intending to operate a hazardous waste treatment plant or disposal site or facility should submit dully filled application form to the Director of Environment or to the respective authorities.

A licensee to own or operate a hazardous waste disposal site or plant is obliged to ensure that -

- a) the hazardous waste treatment plant or disposal site should be created at least **one thousand (1,000) metres away** from a residential or commercial area and from water sources;
- b) the hazardous waste treatment plant or disposal site is enclosed and secure from unauthorized persons;
- c) the hazardous waste treatment plant or disposal site has hazard and safety signs displayed at appropriate places, indicating the treatment plant or disposal site and the nature of operations it carries out; and
- d) Hazardous waste is disposed of or treated in accordance with conditions laid down in the license or in accordance with guidelines issued by the Director of

Environment in consultation with other relevant Government departments or public institutions.

The licence to be issued shall be **valid for one year** and may be renewed by the Director of Environment upon application.

8.2.3 Licence for Disposal of Hazardous Wastes

Any person intending to dispose or treat hazardous waste should apply for a license by submitting duly filled application form to the Director of Environment and pay application fee prescribed under the Environmental Management (Fees and Charges) Regulations, 2008. In addition, the application should be accompanied by a copy of an Environmental Impact Assessment Certificate and an emergency plan.

The license to be issued shall be valid for one year and may be renewed by the Director of Environment upon application.

8.3 Reporting Procedures and Duty to Keep Records

8.3.1 Reporting Procedures

A person licensed to carry out any activity should submit bi-annual reports to the Director of Environment and other relevant authority.

8.3.2 Duty to Keep Records

The holder of a licence should-

- (a) Keep a record of the licensed activity and all transactions related to it; and
- (b) Submit the record to the Director of Environment at interval of six months.

APPENDICES

APPENDIX I: THE CATEGORIES OF WASTES (ADAPTED FROM THE BASEL AND BAMAKO CONVENTIONS)

LIST A: LIST OF HAZARDOUS WASTE

Wastes contained in this Annex are characterized as hazardous under Article 1, paragraph 1 (a), of Basel Convention.

A1 Metal and metal-bearing wastes

A1010	Metal wastes and waste consisting of alloys of any of the following: • Antimony • Arsenic • Beryllium • Cadmium • Lead • Mercury • Selenium • Tellurium • Thallium but excluding such wastes specifically listed on list B.
A1020	Waste having as constituents or contaminants, excluding metal waste in massive form, any of the following: • Antimony; antimony compounds • Beryllium; beryllium compounds • Cadmium; cadmium compounds • Lead; lead compounds • Selenium; selenium compounds • Tellurium; tellurium compounds
A1030	Wastes having as constituents or contaminants any of the following: • Arsenic; arsenic compounds • Mercury; mercury compounds • Thallium; thallium compounds
A1040	Wastes having as constituents any of the following: • Metal carbonyls • Hexavalent chromium compounds
A1050	Galvanic sludges
A1060	Waste liquors from the pickling of metals
A1070	Leaching residues from zinc processing, dust and sludge such as jarosite, hematite, etc.
A1080	Waste zinc residues not included on list B, containing lead and cadmium in concentrations sufficient to exhibit Annex III characteristics
A1090	Ashes from the incineration of insulated copper wire
A1100	Dusts and residues from gas cleaning systems of copper smelters
A1110	Spent electrolytic solutions from copper electro refining and electro winning operations
A1120	Waste sludge, excluding anode slimes, from electrolyte purification systems in copper electrorefining and electrowinning operations
A1130	Spent etching solutions containing dissolved copper
A1140	Waste cupric chloride and copper cyanide catalysts
A1150	Precious metal ash from incineration of printed circuit boards not included on list B
A1160	Waste lead-acid batteries, whole or crushed
A1170	Unsorted waste batteries excluding mixtures of only list B batteries. Waste batteries not specified on list B containing Annex I constituents to an extent to render them hazardous
A1180	Waste electrical and electronic assemblies or scrap ¹ containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they possess any of the characteristics contained in Annex III (note the related entry on list B B1110) ²

A1190	Waste metal cables coated or insulated with plastics containing or contaminated with coal tar, PCB ³ , lead, cadmium, other organohalogen compounds or other Annex I constituents to an extent that they exhibit Annex III characteristics.
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A2 Wastes containing principally inorganic constituents, which may contain metals and organic materials

A2010	Glass waste from cathode-ray tubes and other activated glasses
A2020	Waste inorganic fluorine compounds in the form of liquids or sludge but excluding such wastes specified on list B
A2030	Waste catalysts but excluding such wastes specified on list B
A2040	Waste gypsum arising from chemical industry processes, when containing Annex I constituents to the extent that it exhibits an Annex III hazardous characteristic (note the related entry on list B B2080)
A2050	Waste asbestos (dusts and fibres)
A2060	Coal-fired power plant fly-ash containing Annex I substances in concentrations sufficient to exhibit Annex III characteristics (note the related entry on list B B2050)

A3 Wastes containing principally organic constituents, which may contain metals and inorganic materials

A3010	Waste from the production or processing of petroleum coke and bitumen
A3020	Waste mineral oils unfit for their originally intended use
A3030	Wastes that contain, consist of or are contaminated with leaded anti-knock compound sludge
A3040	Waste thermal (heat transfer) fluids
A3050	Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives excluding such wastes specified on list B (note the related entry on list B B4020)
A3060	Waste nitrocellulose
A3070	Waste phenols, phenol compounds including chlorophenol in the form of liquids or sludge
A3080	Waste ethers not including those specified on list B
A3090	Waste leather dust, ash, sludge and flours when containing hexavalent chromium compounds or biocides (note the related entry on list B B3100)
A3100	Waste paring and other waste of leather or of composition leather not suitable for the manufacture of leather articles containing hexavalent chromium compounds or biocides (note the related entry on list B B3090)
A3110	Fellmongery wastes containing hexavalent chromium compounds or biocides or infectious substances (note the related entry on list B B3110)
A3120	Fluff - light fraction from shredding
A3130	Waste organic phosphorous compounds
A3140	Waste non-halogenated organic solvents but excluding such wastes specified on list B
A3150	Waste halogenated organic solvents
A3160	Waste halogenated or unhalogenated non-aqueous distillation residues arising from organic solvent recovery operations
A3170	Wastes arising from the production of aliphatic halogenated hydrocarbons (such as chloromethane, dichloro-ethane, vinyl chloride, vinylidene chloride, allyl chloride and epichlorhydrin)
A3180	Wastes, substances and articles containing, consisting of or contaminated with polychlorinated biphenyl (PCB), polychlorinated terphenyl (PCT), polychlorinated naphthalene (PCN) or polybrominated biphenyl (PBB), or any other polybrominated analogues of these compounds, at a concentration level of 50 mg/kg or more ⁴
A3190	Waste tarry residues (excluding asphalt cements) arising from refining, distillation and any pyrolytic treatment of organic materials
A3200	Bituminous material (asphalt waste) from road construction and maintenance, containing tar (note the related entry on list B, B2130)

A4 Wastes which may contain either inorganic or organic constituents

A4010	Wastes from the production, preparation and use of pharmaceutical products but excluding such wastes specified on list B
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A4020	Clinical and related wastes; that is wastes arising from medical, nursing, dental, veterinary, or similar practices, and wastes generated in hospitals or other facilities during the investigation or treatment of patients, or research projects
A4030	Wastes from the production, formulation and use of biocides and phytopharmaceuticals, including waste pesticides and herbicides which are off-specification, outdated, ⁵ or unfit for their originally intended use
A4040	Wastes from the manufacture, formulation and use of wood-preserving chemicals ⁶
A4050	Wastes that contain, consist of or are contaminated with any of the following: • Inorganic cyanides, excepting precious-metal-bearing residues in solid form containing traces of inorganic cyanides • Organic cyanides
A4060	Waste oils/water, hydrocarbons/water mixtures, emulsions
A4070	Wastes from the production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish excluding any such waste specified on list B (note the related entry on list B B4010)
A4080	Wastes of an explosive nature (but excluding such wastes specified on list B)
A4090	Waste acidic or basic solutions, other than those specified in the corresponding entry on list B (note the related entry on list B B2120)
A4100	Wastes from industrial pollution control devices for cleaning of industrial off-gases but excluding such wastes specified on list B
A4110	Wastes that contain, consist of or are contaminated with any of the following: • Any congener of polychlorinated dibenzo-furan • Any congener of polychlorinated dibenzo-dioxin
A4120	Wastes that contain, consist of or are contaminated with peroxides
A4130	Waste packages and containers containing Annex I substances in concentrations sufficient to exhibit Annex III hazard characteristics
A4140	Waste consisting of or containing off specification or outdated chemicals corresponding to Annex I categories and exhibiting Annex III hazard characteristics
A4150	Waste chemical substances arising from research and development or teaching activities which are not identified and/or are new and whose effects on human health and/or the environment are not known
A4160	Spent activated carbon not included on list B (note the related entry on list B B2060)

⁵ "Outdated" means unused within the period recommended by the manufacturer.

⁶ This entry does not include wood treated with wood preserving chemicals.

LIST B: NON HAZARDOUS WASTES

Wastes contained in this Annex will not be wastes covered by Article 1, paragraph 1 (a), of Basel Convention unless they contain schedule 1 material to an extent causing them to exhibit an Schedule 2 characteristics.

B1 Metal and metal-bearing wastes

B1010	Metal and metal-alloy wastes in metallic, non-dispersible form: • Precious metals (gold, silver, the platinum group, but not mercury) • Iron and steel scrap • Copper scrap • Nickel scrap • Aluminium scrap • Zinc scrap • Tin scrap • Tungsten scrap • Molybdenum scrap • Tantalum scrap • Magnesium scrap • Cobalt scrap • Bismuth scrap • Titanium scrap • Zirconium scrap • Manganese scrap • Germanium scrap • Vanadium scrap • Scrap of hafnium, indium, niobium, rhenium and gallium • Thorium scrap • Rare earths scrap • Chromium scrap
B1020	Clean, uncontaminated metal scrap, including alloys, in bulk finished form (sheet, plate, beams, rods, etc), of: • Antimony scrap • Beryllium scrap • Cadmium scrap • Lead scrap (but excluding lead-acid batteries) • Selenium scrap • Tellurium scrap
B1030	Refractory metals containing residues
B1031	Molybdenum, tungsten, titanium, tantalum, niobium and rhenium metal and metal alloy wastes in metallic dispersible form (metal powder), excluding such wastes as specified in list A under entry A1050, Galvanic sludge
B1040	Scrap assemblies from electrical power generation not contaminated with lubricating oil, PCB or PCT to an extent to render them hazardous
B1050	Mixed non-ferrous metal, heavy fraction scrap, not containing Annex I materials in concentrations sufficient to exhibit Annex III characteristics ⁸
B1060	Waste selenium and tellurium in metallic elemental form including powder
B1070	Waste of copper and copper alloys in dispersible form, unless they contain Annex I constituents to an extent that they exhibit Annex III characteristics
B1080	Zinc ash and residues including zinc alloys residues in dispersible form unless containing Annex I constituents in concentration such as to exhibit Annex III characteristics or exhibiting hazard characteristic H4.3 ⁹
B1090	Waste batteries conforming to a specification, excluding those made with lead, cadmium or mercury
B1100	Metal-bearing wastes arising from melting, smelting and refining of metals: • Hard zinc spelter

	• Zinc-containing drosses: - Galvanizing slab zinc top dross (>90% Zn) - Galvanizing slab zinc bottom dross (>92% Zn) - Zinc die casting dross (>85% Zn) - Hot dip galvanizers slab zinc dross (batch)(>92% Zn) - Zinc skimmings • Aluminium skimmings (or skims) excluding salt slag • Slags from copper processing for further processing or refining not containing arsenic, lead or cadmium to an extent that they exhibit Annex III hazard characteristics • Wastes of refractory linings, including crucibles, originating from copper smelting • Slags from precious metals processing for further refining • Tantalum-bearing tin slags with less than 0.5% tin						
B1110	Electrical and electronic assemblies: • Electronic assemblies consisting only of metals or alloys • Waste electrical and electronic assemblies or scrap¹⁰ (including printed circuit boards) not containing components such as accumulators and other batteries included on list A, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or not contaminated with Annex I constituents (e.g., cadmium, mercury, lead, polychlorinated biphenyl) or from which these have been removed, to an extent that they do not possess any of the characteristics contained in Annex III (note the related entry on list A A1180) • Electrical and electronic assemblies (including printed circuit boards, electronic components and wires) destined for direct reuse,¹¹ and not for recycling or final disposal¹²						
B1115	Waste metal cables coated or insulated with plastics, not included in list A1190, excluding those destined for Annex IVA operations or any other disposal operations involving, at any stage, uncontrolled thermal processes, such as open-burning.						
B1120	Spent catalysts excluding liquids used as catalysts, containing any of: <table><tr><td>Transition metals, excluding waste catalysts (spent catalysts, liquid used catalysts or other catalysts) on list A:</td><td>Scandium Vanadium Manganese Cobalt Copper Yttrium Niobium Hafnium Tungsten</td><td>Titanium Chromium Iron Nickel Zinc Zirconium Molybdenum Tantalum Rhenium</td></tr><tr><td>Lanthanides (rare earth metals):</td><td>Lanthanum Praseodymium Samarium Gadolinium Dysprosium Erbium Ytterbium</td><td>Cerium Neodymium Europium Terbium Holmium Thulium Lutetium</td></tr></table>	Transition metals, excluding waste catalysts (spent catalysts, liquid used catalysts or other catalysts) on list A:	Scandium Vanadium Manganese Cobalt Copper Yttrium Niobium Hafnium Tungsten	Titanium Chromium Iron Nickel Zinc Zirconium Molybdenum Tantalum Rhenium	Lanthanides (rare earth metals):	Lanthanum Praseodymium Samarium Gadolinium Dysprosium Erbium Ytterbium	Cerium Neodymium Europium Terbium Holmium Thulium Lutetium
Transition metals, excluding waste catalysts (spent catalysts, liquid used catalysts or other catalysts) on list A:	Scandium Vanadium Manganese Cobalt Copper Yttrium Niobium Hafnium Tungsten	Titanium Chromium Iron Nickel Zinc Zirconium Molybdenum Tantalum Rhenium					
Lanthanides (rare earth metals):	Lanthanum Praseodymium Samarium Gadolinium Dysprosium Erbium Ytterbium	Cerium Neodymium Europium Terbium Holmium Thulium Lutetium					
B1130	Cleaned spent precious-metal-bearing catalysts						
B1140	Precious-metal-bearing residues in solid form which contain traces of inorganic cyanides						
B1150	Precious metals and alloy wastes (gold, silver, the platinum group, but not mercury) in a dispersible, non-liquid form with appropriate packaging and labelling						
B1160	Precious-metal ash from the incineration of printed circuit boards (note the related entry on list A A1150)						
B1170	Precious-metal ash from the incineration of photographic film						
B1180	Waste photographic film containing silver halides and metallic silver						
B1190	Waste photographic paper containing silver halides and metallic silver						
B1200	Granulated slag arising from the manufacture of iron and steel						

B1210	Slag arising from the manufacture of iron and steel including slags as a source of TiO ₂ and vanadium
B1220	Slag from zinc production, chemically stabilized, having a high iron content (above 20%) and processed according to industrial specifications (e.g., DIN 4301) mainly for construction
B1230	Mill scaling arising from the manufacture of iron and steel
B1240	Copper oxide mill-scale
B1250	Waste end-of-life motor vehicles, containing neither liquids nor other hazardous components

B2 Wastes containing principally inorganic constituents, which may contain metals and organic materials

B2010	Wastes from mining operations in non-dispersible form: • Natural graphite waste • Slate waste, whether or not roughly trimmed or merely cut, by sawing or otherwise • Mica waste • Leucite, nepheline and nepheline syenite waste • Feldspar waste • Fluorspar waste • Silica wastes in solid form excluding those used in foundry operations
B2020	Glass waste in non-dispersible form: • Cullet and other waste and scrap of glass except for glass from cathode-ray tubes and other activated glasses
B2030	Ceramic wastes in non-dispersible form: • Cermet wastes and scrap (metal ceramic composites) • Ceramic based fibres not elsewhere specified or included
B2040	Other wastes containing principally inorganic constituents: • Partially refined calcium sulphate produced from flue-gas desulphurization (FGD) • Waste gypsum wallboard or plasterboard arising from the demolition of buildings • Slag from copper production, chemically stabilized, having a high iron content (above 20%) and processed according to industrial specifications (e.g., DIN 4301 and DIN 8201) mainly for construction and abrasive applications • Sulphur in solid form • Limestone from the production of calcium cyanamide (having a pH less than 9) • Sodium, potassium, calcium chlorides • Carborundum (silicon carbide) • Broken concrete • Lithium-tantalum and lithium-niobium containing glass scraps
B2050	Coal-fired power plant fly-ash, not included on list A (note the related entry on list A A2060)
B2060	Spent activated carbon not containing any Annex I constituents to an extent they exhibit Annex III characteristics, for example, carbon resulting from the treatment of potable water and processes of the food industry and vitamin production (note the related entry on list A, A4160)
B2070	Calcium fluoride sludge
B2080	Waste gypsum arising from chemical industry processes not included on list A (note the related entry on list A A2040)
B2090	Waste anode butts from steel or aluminium production made of petroleum coke or bitumen and cleaned to normal industry specifications (excluding anode butts from chlor alkali electrolyses and from metallurgical industry)
B2100	Waste hydrates of aluminium and waste alumina and residues from alumina production excluding such materials used for gas cleaning, flocculation or filtration processes
B2110	Bauxite residue ("red mud") (pH moderated to less than 11.5)
B2120	Waste acidic or basic solutions with a pH greater than 2 and less than 11.5, which are not corrosive or otherwise hazardous (note the related entry on list A A4090)
B2130	Bituminous material (asphalt waste) from road construction and maintenance, not containing tar ¹³ (note the related entry on list A, A3200)

B3 Wastes containing principally organic constituents, which may contain metals and inorganic materials

B3010	Solid plastic waste: The following plastic or mixed plastic materials, provided they are not mixed with other wastes and are prepared to a specification: • Scrap plastic of non-halogenated polymers and co-polymers, including but not limited to the following¹⁴ - ethylene
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¹³ The concentration level of Benzol (a) pyrene should not be 50mg/kg or more.

¹⁴ It is understood that such scraps are completely polymerized.

	- styrene - polypropylene - polyethylene terephthalate - acrylonitrile - butadiene - polyacetals - polyamides - polybutylene terephthalate - polycarbonates - polyethers - polyphenylene sulphides - acrylic polymers - alkanes C10-C13 (plasticiser) - polyurethane (not containing CFCs) - polysiloxanes - polymethyl methacrylate - polyvinyl alcohol - polyvinyl butyral - polyvinyl acetate • Cured waste resins or condensation products including the following: - urea formaldehyde resins - phenol formaldehyde resins - melamine formaldehyde resins - epoxy resins - alkyd resins - polyamides • The following fluorinated polymer wastes¹⁵ - perfluoroethylene/propylene (FEP) - perfluoro alkoxyl alkane - tetrafluoroethylene/per fluoro vinyl ether (PFA) - tetrafluoroethylene/per fluoro methylvinyl ether (MFA) - polyvinylfluoride (PVF) - polyvinylidene fluoride (PVDF)
B3020	Paper, paperboard and paper product wastes The following materials, provided they are not mixed with hazardous wastes: Waste and scrap of paper or paperboard of: • unbleached paper or paperboard or of corrugated paper or paperboard • other paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass • paper or paperboard made mainly of mechanical pulp (for example, newspapers, journals and similar printed matter) • other, including but not limited to 1) laminated paperboard 2) unsorted scrap
B3030	Textile wastes The following materials, provided they are not mixed with other wastes and are prepared to a specification: • Silk waste (including cocoons unsuitable for reeling, yarn waste and garnetted stock) - not carded or combed - other • Waste of wool or of fine or coarse animal hair, including yarn waste but excluding garnetted stock - noils of wool or of fine animal hair - other waste of wool or of fine animal hair - waste of coarse animal hair • Cotton waste (including yarn waste and garnetted stock) - yarn waste (including thread waste) - garnetted stock - other • Flax tow and waste • Tow and waste (including yarn waste and garnetted stock) of true hemp (Cannabis sativa L.) • Tow and waste (including yarn waste and garnetted stock) of jute and other textile bast fibres (excluding flax, true hemp and ramie)

¹⁵ Post-consumer wastes are excluded from this entry:

- Wastes shall not be mixed
- Problems arising from open-burning practices to be considered

	• Tow and waste (including yarn waste and garnetted stock) of sisal and other textile fibres of the genus Agave • Tow, noils and waste (including yarn waste and garnetted stock) of coconut • Tow, noils and waste (including yarn waste and garnetted stock) of abaca (Manila hemp or Musa textilis Nee) • Tow, noils and waste (including yarn waste and garnetted stock) of ramie and other vegetable textile fibres, not elsewhere specified or included • Waste (including noils, yarn waste and garnetted stock) of man-made fibres - of synthetic fibres - of artificial fibres • Worn clothing and other worn textile articles • Used rags, scrap twine, cordage, rope and cables and worn out articles of twine, cordage, rope or cables of textile materials - sorted - other
B3035	Waste textile floor coverings, carpets
B3040	Rubber wastes • The following materials, provided they are not mixed with other wastes: • Waste and scrap of hard rubber (e.g., ebonite) • Other rubber wastes (excluding such wastes specified elsewhere)
B3050	Untreated cork and wood waste: • Wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms • Cork waste: crushed, granulated or ground cork
B3060	Wastes arising from agro-food industries provided it is not infectious: • Wine lees • Dried and sterilized vegetable waste, residues and by-products, whether or not in the form of pellets, of a kind used in animal feeding, not elsewhere specified or included • Degras: residues resulting from the treatment of fatty substances or animal or vegetable waxes • Waste of bones and horn-cores, unworked, defatted, simply prepared (but not cut to shape), treated with acid or degelatinised • Fish waste • Cocoa shells, husks, skins and other cocoa waste • Other wastes from the agro-food industry excluding by-products which meet national and international requirements and standards for human or animal consumption
B3065	Waste edible fats and oils of animal or vegetable origin (e.g. frying oils), provided they do not exhibit an Annex III characteristic
B3070	The following wastes: • Waste of human hair • Waste straw • Deactivated fungus mycelium from penicillin production to be used as animal feed
B3080	Waste parings and scrap of rubber
B3090	Paring and other wastes of leather or of composition leather not suitable for the manufacture of leather articles, excluding leather sludges, not containing hexavalent chromium compounds and biocides (note the related entry on list A A3100)
B3100	Leather dust, ash, sludges or flours not containing hexavalent chromium compounds or biocides (note the related entry on list A A3090)
B3110	Fellmongery wastes not containing hexavalent chromium compounds or biocides or infectious substances (note the related entry on list A A3110)
B3120	Wastes consisting of food dyes
B3130	Waste polymer ethers and waste non-hazardous monomer ethers incapable of forming peroxides
B3140	Waste pneumatic tyres, excluding those destined for Annex IVA operations

B4 Wastes which may contain either inorganic or organic constituents

B4010	Wastes consisting mainly of water-based/latex paints, inks and hardened varnishes not containing organic solvents, heavy metals or biocides to an extent to render them hazardous (note the related entry on list A A4070)
B4020	Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives, not listed on list A, free of solvents and other contaminants to an extent that they do not exhibit Annex III characteristics, e.g., water-based, or glues based on casein starch, dextrin, cellulose ethers, polyvinyl alcohols (note the related entry on list A A3050)
B4030	Used single-use cameras, with batteries not included on list A

WASTE STREAMS

Y1	Clinical wastes from medical care in hospitals, medical centers and clinics
Y2	Wastes from the production and preparation of pharmaceutical products
Y3	Waste pharmaceuticals, drugs and medicines
Y4	Wastes from the production, formulation and use of biocides and phytopharmaceuticals
Y5	Wastes from the manufacture, formulation and use of wood preserving chemicals
Y6	Wastes from the production, formulation and use of organic solvents
Y7	Wastes from heat treatment and tempering operations containing cyanides
Y8	Waste mineral oils unfit for their originally intended use
Y9	Waste oils/water, hydrocarbons/water mixtures, emulsions
Y10	Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)
Y11	Waste tarry residues arising from refining, distillation and any pyrolytic treatment
Y12	Wastes from production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish
Y13	Waste from production, formulation and use of resins, latex, plasticizers, glues/adhesives
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
Y15	Wastes of an explosive nature not subject to other legislation
Y16	Wastes from production, formulation and use of photographic chemicals and processing materials
Y17	Wastes resulting from surface treatment of metals and plastics
Y18	Residues arising from industrial waste disposal operations

Wastes having as constituents:

Y19	Metal carbonyls
Y20	Beryllium; beryllium compounds
Y21	Hexavalent chromium compounds
Y22	Copper compounds
Y23	Zinc compounds
Y24	Arsenic; arsenic 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 congener of polychlorinated dibenzo-furan
Y44	Any congener of polychlorinated dibenzo-p-dioxin
Y45	Organohalogen compounds other than substances referred to in this Annex (e.g. Y39, Y41, Y42, Y43, Y44)

CATEGORIES OF WASTES REQUIRING SPECIAL CONSIDERATION

Y46	Wastes collected from households
Y47	Residues arising from the incineration of household wastes

ANNEX I: DISPOSAL OPERATIONS (BASEL CONVENTION)

A. Operations which do not lead to the possibility of resource recovery, recycling, reclamation, direct re-use or alternative uses

Section A encompasses all such disposal operations which occur in practice.

- D1 Deposit into or onto land, (e.g., landfill, etc.)
- D2 Land treatment, (e.g., biodegradation of liquid or sludgy discards in soils, etc.)
- D3 Deep injection, (e.g., injection of pumpable discards into wells, salt domes of naturally occurring repositories, etc.)
- D4 Surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc.)
- D5 Specially engineered landfill, (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)
- D6 Release into a water body except seas/oceans
- D7 Release into seas/oceans including sea-bed insertion
- D8 Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A
- D9 Physico chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A, (e.g., evaporation, drying, calcination, neutralization, precipitation, etc.)
- D10 Incineration on land
- D11 Incineration at sea
- D12 Permanent storage (e.g., emplacement of containers in a mine, etc.)
- D13 Blending or mixing prior to submission to any of the operations in Section A
- D14 Repackaging prior to submission to any of the operations in Section A
- D15 Storage pending any of the operations in Section A

B. Operations which may lead to resource recovery, recycling reclamation, direct re-use or alternative uses

Section B encompasses all such operations with respect to materials legally defined as or considered to be hazardous wastes and which otherwise would have been destined for operations included in Section A

- R1 Use as a fuel (other than in direct incineration) or other means to generate energy
- R2 Solvent reclamation/regeneration
- R3 Recycling/reclamation of organic substances which are not used as solvents
- R4 Recycling/reclamation of metals and metal compounds
- R5 Recycling/reclamation of other inorganic materials
- R6 Regeneration of acids or bases
- R7 Recovery of components used for pollution abatement
- R8 Recovery of components from catalysts
- R9 Used oil re-refining or other reuses of previously used oil
- R10 Land treatment resulting in benefit to agriculture or ecological improvement
- R11 Uses of residual materials obtained from any of the operations numbered R1-R10
- R12 Exchange of wastes for submission to any of the operations numbered R1-R11
- R13 Accumulation of material intended for any operation in Section B

APPENDIX II: NOTIFICATION FORM (BASEL CONVENTION)

1. Exporter (name, address): Contact person: Tel: Fax/Telex:		3. Notification concerning (1): A (i) Single Movement ☐ (ii) General notification (multiple movements) ☐ B (i) Disposal (no recovery) ☐ (ii) Recovery operation ☐ C Pre-authorized recovery facility (1) Yes ☐ No ☐ Facility Registration Number (if Yes) (To be completed for a recovery facility located in an OECD State)	
2. Importer (name, address): Contact person: Tel: Fax/Telex:		4. Total intended number of shipments 5. Estimated quantity (3) _____ kg _____ litres	
7. Intended carrier(s)* (name, address) (2): Contact person: Tel: Fax/Telex:		6. Intended date(s) or period of time for shipment(s)	
10. Waste generator(s) (name, address) (2): Contact person: Tel: Fax/Telex: Site of generation & process:		8. Disposer (name, address) Contact person: Tel: Actual site of disposal: Fax/Telex: 9. Method(s) of disposal: D code / R code (4): Technology employed (Attach details if necessary):	
13. (i) Designation and chemical composition of the waste		11. Mode(s) of transport (4):	
15. Waste identification code in country of export: IWIC: in country of import: EWC: Customs Code H.S: Other (specify):		12. Packaging Type(s) (4):	
16. OECD classification (1): amber ☐ red ☐ and number: other ☐ (attach details)		14. Physical characteristics	
19. (i) UN identification: UN Shipping name:		17. Y-number (4):	
20. Concerned states, code number of Component authorities, and specific points of entry and exit: State of Export States of transit State of Import		18. H-number (4):	
21. Customs offices of entry and/or departure (European-Community): Entry Departure:		22. Number of annexes attached	
23. Exporter's/Generators declaration: I certify that the above information is complete and correct to my best knowledge. I also certify that legally-enforceable written contractual obligations have been entered into and that any applicable insurance or other financial guarantees are or shall be in force covering the transboundary movement. Name: _____ Signature: _____ Date: _____		24. To be completed by Notification received on: - Import (EEC, OECD) - transit (Basel) Acknowledgment sent on: Name of Competent Authority, stamp and/or signature:	
25. Consent to the movement provided by the Competent Authority of (country): Consent given on: _____ Consent expires on: _____ Specific conditions (1): ☐ Yes. See block 26 overleaf/annex ☐ No. Name of Competent Authority, stamp and/or signature:		For use by competent authorities	

(1) Enter X in appropriate box list if multiple shipment

(2) Attach a list if more than one
(4) See codes on the reverse

(3) Attach a

LIST OF ABBREVIATIONS USED IN THE NOTIFICATION FORM

DISPOSAL (NO RECOVERY) (Block 9) D1 Deposit into or onto Land, (e.g., Landfill, etc.) D2 Land treatment, (e.g., biodegradation of liquid or sludgy discards in soils, etc...) D3 Deep Injection, (e.g., injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.) D4 Surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc...) D5 Specially engineered landfill, (e.g., placement onto lined discrete cells which are capped and isolated from one another and the environment, etc...) D6 Release into water body except seas/oceans D7 Release into seas/oceans including sea-bed insertion D8 Biological treatment not specified elsewhere in this list which results in final compounds or mixtures which are discarded by means of any operations number D1 to D12 D9 Physico-chemical treatment not specified elsewhere in this list which results in final compounds or mixtures which are discarded by means of any operations numbered D1 to D12, (e.g., evaporation, drying, calcination etc.) D10 Incineration on land D11 Incineration at sea D12 Permanent Storage, (e.g., emplacement in containers in a mine, etc.) D13 Blending or mixing prior to submission to any of the operations numbered D1 to D12 D14 Repackaging prior to submission to any of the operations number D1 to D12. D15 Storage pending any of the operations D1 to D12.		RECOVERY OPERATIONS (Block 9) R1 Use as a fuel (other than in direct incineration) or other means to generate energy R2 Solvent reclamation/regeneration R3 Recycling/reclamation of organic substances which are not used as solvents R4 Recycling/reclamation of metal compounds R5 Recycling/reclamation of other inorganic materials R6 Regeneration of acid or bases R7 Recovery of components from used for pollution abatement R8 Recovery of components from catalysts R9 Used oil re-refining or other reuses of previously used oil R10 Land treatment resulting in benefit to agricultural or ecological improvement R11 Uses of residual material obtained from any of the operations numbered R 1 to R10 R12 Exchange of wastes for submission to any of the operations numbered R1 to R11 R13 Accumulation of material intended for any operations numbered R1 to R12																																																			
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26. SPECIFIC CONDITIONS ON CONSENTING TO THE MOVEMENT																																																					

APPENDIX III: MOVEMENT DOCUMENT (BASEL CONVENTION)

1 i) Exporter (name, address)		3 Corresponding to Notification:		4. Serial number of shipment	
Contact person:		Movement subject of (1)		single notification ☐	
Tel:				general notification ☐	
Fax/Telex:		8. Disposal (name, address)			
1 ii) Waste generator (name, address) (1)		Contact person:		Tel:	
Contact person:				Fax/Telex:	
Tel:		Actual site of disposal:			
Fax/Telex:					
Site of generation:					
2. Importer (name, address)		9. Method(s) of disposal:			
Contact person:		D code / R code (3):			
Tel:		Technology Employed *:			
Fax/Telex:		*(Attach details if necessary)			
5. 1st Carrier (name, address):		6. 2nd Carrier (name, address) (4):		7. Last carrier (name, address):	
Registration No:		Registration No:		Registration No:	
Tel:		Tel:		Tel:	
Fax/Telex:		Fax/Telex:		Fax/Telex:	
10. Identity of means of transport (3)		11. Identity of means of transport (3)		12. Identity of means of transport (3)	
Date of transfer:		Date of transfer:		Date of transfer:	
Signature of Carrier's Representative		Signature of Carrier's Representative		Signature of Carrier's Representative	
13. Designation and chemical composition of the waste				14. Physical characteristics (3)	
15. Waste identification code				17. Actual quantity	
in country of export: IWIC:				kg	
in country of import: EWC:				litres	
Customs code (H.S.): Other (specify):				18. Packages (2)	
16. OECD Classification(1)				19. UN Classification	
amber ☐				UN Shipping Name:	
red ☐				UN Identification:	
other ☐				UN class (3):	
and number				H Number (3): Y Number:	
20. Special handling instructions (including in case of accidents)		22. Exporter's declaration:			
		I certify that the information in blocks 1 to 9 and 13 to 21 above is complete and correct to the best of my knowledge. I also certify that legally-enforceable written contractual obligations have been entered into, that any applicable insurance or other financial guarantees are in force covering the transboundary movement, and that all necessary authorizations have been received from the competent authorities of the States concerned.			
21. Actual date of shipment		Name Signature:			
		Date:			
TO BE COMPLETED BY IMPORTER/DISPOSER					
23. Shipment received by Importer on (if not Disposer):				25. I certify that the disposal/recovery of the waste described above has been completed.	
Quantity received:		kg/litres		accepted ☐	
Date:				rejected(5) ☐	
Name:		Signature:		Date:	
24 Shipment received at Disposer on:				Name:	
Quantity received:		kg/litres		Signature and Stamp:	
Date:					
Name:		Signature:			
Approximate date of disposal:					
Method of disposal:					

(1) Attach list, if more than one (2) Enter X in appropriate boxes (3)
See codes on the reversed in (4) If more than three carriers attach information as require blocks 6 and 11
(5) Immediately contact Competent Authority

LIST OF ABBREVIATIONS USED IN THE MOVEMENT DOCUMENT

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FOR USE BY CUSTOMS OFFICERS																																																		
26. COUNTRY OF EXPORT/DISPATCH OR CUSTOMS OFFICE OF EXIT The waste described overleaf has left the country on: Stamp: Signature:		28. STAMPS OF CUSTOM OFFICES OF TRANSIT COUNTRIES <table style="width: 100%; border: none;"> <tr> <th colspan="2" style="text-align: center;">Name of Country (2):</th> <th colspan="2" style="text-align: center;">Name of Country (2):</th> </tr> <tr> <td style="width: 25%; text-align: center;">Entry</td> <td style="width: 25%; text-align: center;">Departure</td> <td style="width: 25%; text-align: center;">Entry</td> <td style="width: 25%; text-align: center;">Departure</td> </tr> </table>		Name of Country (2):		Name of Country (2):		Entry	Departure	Entry	Departure																																							
Name of Country (2):		Name of Country (2):																																																
Entry	Departure	Entry	Departure																																															
27. COUNTRY OF IMPORT/DESTINATION The waste described overleaf has entered the country on: Stamp: Signature:		<table style="width: 100%; border: none;"> <tr> <th colspan="2" style="text-align: center;">Name of Country (2):</th> <th colspan="2" style="text-align: center;">Name of Country (2):</th> </tr> <tr> <td style="width: 25%; text-align: center;">Entry</td> <td style="width: 25%; text-align: center;">Departure</td> <td style="width: 25%; text-align: center;">Entry</td> <td style="width: 25%; text-align: center;">Departure</td> </tr> </table>		Name of Country (2):		Name of Country (2):		Entry	Departure	Entry	Departure																																							
Name of Country (2):		Name of Country (2):																																																
Entry	Departure	Entry	Departure																																															

APPENDIX IV: TRACKING DOCUMENT

(To be completed in Five Copies)

Form No. 3

Regulation 15 (2) (c)

A Transporter	Serial No. Registered Name of Transporter..... Usual Municipality/District of operation..... License number Issuing Authority
CONSIGNMENT NOTE FOR THE CARRIAGE AND DISPOSAL OF HAZARDOUS WASTE	
B Description of the hazardous waste	Area collected Type of Waste Description and physical nature of hazardous waste Quantity/Size of hazardous waste..... Number of Containers.....
C Disposer's Certificate	I certify that I have received the waste as described in A and B above. The hazardous waste was delivered in vehicle..... (Registration No.) at.....(time) on..... (date and the carrier gave his/her name as.....on behalf of The hazardous waste shall be disposed off as per disposal license issued by the Authority. Signed:..... Name: Position:..... Date:..... On behalf of:.....

APPENDIX V: APPLICATION/RENEWAL FOR A LICENCE FOR TRANSPORTATION OF HAZARDOUS WASTE

Form No. 4

(Regulation 43 (6))

APPLICATION/RENEWAL FOR A LICENCE FOR TRANSPORTATION OF HAZARDOUS WASTE

I hereby apply for a license to transport waste, of which particulars are given below:

Name and address of applicant.....

TIN Number

Registration number and type of vehicle to transport waste.....

Quantity of waste per vehicle to be transported.....

Licensed sites/plant to which waste is to be transported.....

Collection schedule

Any other information.....

Attach Recommendation document(s) from the relevant lead agency.

Is Application for:	Initial license	Renewal
---------------------	-----------------	---------

Previous License Number

Date: Signature:

Designation/Title:

FOR OFFICIAL USE ONLY

Application received by on 20.....

Fee paid Tshs.....(in words).....

Director of Environment

APPENDIX VI: LICENCE TO TRANSPORT HAZARDOUS WASTE

Form No. 5

(Regulation 43 (1))

LICENSE TO TRANSPORT HAZARDOUS WASTE

License No.

Name.....

Address:

.....
.....

You are hereby licensed to transport hazardous waste to:

.....
(ward/district)

From

(ward/district)

Type and registration number of vehicles licensed

.....
.....

This license is valid from20..... to20....

This license is granted subject to the following conditions:

.....
.....
.....
.....

Date: Signature:.....

.....

The Director of Environment

**APPENDIX VII: APPLICATION/RENEWAL FOR A LICENCE TO OWN/OPERATE
A WASTE TREATMENT PLANT OR DISPOSAL SITE/FACILITY**

Form No. 6

Regulation 45 (1)

**APPLICATION/RENEWAL FOR A LICENCE TO OWN/OPERATE A WASTE TREATMENT PLANT
OR DISPOSAL SITE/FACILITY
(To be completed in Triplicate)**

I hereby apply for a license to own/operate a waste treatment plant/disposal /facility/site, of which particulars are given below:-

Name and address of applicant

TIN Number

Location and district of plant/ facility/site

Approval of Town/Country Planning Authority

Description of types of waste to be treated / disposed of at plant / facility / site

Quantity being disposed of/per annum (tones/kg).....

Type of hazardous treatment to be used for :

- (a) Recovery and reclamation
- (b) Recycling

Type of hazardous waste disposal facility/site:

- (a) Containment in impermeable layers.....
- (b) Solidification
- (c) Sanitary landfilling.....
- (d) Landfilling
- (e) Decontamination
- (f) Incineration

Other (specify)

Estimated life span of plant/site (include plan or designs).....

Approved Energy Plan dated.....(Attach Copy)

**APPENDIX VIII: LICENCE TO OWN/OPERATE WASTE TREATMENT
PLANT/DISPOSAL/FACILITY/ SITE**

Form no. 7

Regulation 44 (1)

**LICENCE TO OWN/OPERATE WASTE TREATMENT
PLANT/DISPOSAL/FACILITY/ SITE**

License No.

Name

Address

You are hereby licensed to own/operate a hazardous waste treatment
plant/hazardous waste disposal facility/site:.....

(Plot No., town, ward, district, region)

This license is valid from20..... to20.....

This license is subject to the following conditions:

.....
.....
.....
.....
.....
.....
.....

Date:

Signature:

.....

Director of Environment