NATIONAL PROFILE TO ASSESS THE CHEMICALS MANAGEMENT INFRASTRUCTURE IN UGANDA

By

National Environment Management Authority (NEMA)

Prepared by NEMA and Collaborating Institutions and with the Assistance of the United Nations Institute for Training and Research (UNITAR)

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Towards the Implementation of the Recommendations of Chapter 19 of Agenda 21 on Environmentally Sound Management of Toxic Chemicals

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TABLE OF CONTENTS

INTRODUCTION TO THE NATIONAL PROFILE *9*

Linkage of the National Profile to the International Policy Framework for the Sound Management of Chemicals **9**

National Objectives and Anticipated Benefits of preparing the National Profile **10**

BENEFITS **11**

Preparation of the National Profile **12**

EXECUTIVE SUMMARY *14*

Introduction **14**

Objectives **14**

Preparation of the National Profile **15**

Chemical Production, Import, Export & Use **15**

Priority Concerns Related To Chemical Production, Import, Export & Use **15**

Existing Legislation, Policies And Institutional Arrangements **16**

Inter-ministerial Commissions & Co-ordinating Mechanisms **17**

Data Access and Use **18**

Technical Infrastructure **19**

International Linkages **19**

Awareness/Understanding of Workers And The Public **19**

Resources available and needed for Chemicals Management **20**

Conclusions and Recommendations for Follow-up **20**

CHAPTER 1: NATIONAL BACKGROUND INFORMATION *22*

1.1 Physical, Demographic and Climatic Description **22**

1.2 Form of Government **23**

1.3 Official Language **23**

1.4 Local Languages **23**

1.5 Ethinic Groups **23**

1.6 Religion: **23**

1.7 Total Population **23**

1.8 Urban and Rural Population **23**

1.9 Average Age of Population **24**

1.10 Birth Rate **25**

1.11 Life Expectancy **25**

1.12 Literacy **25**

CHAPTER 2: CHEMICAL PRODUCTION, IMPORT, EXPORT & USE *26*

2.1 INTRODUCTION: CHEMICAL PRODUCTION AND TRADE 26
2.2: Chemical Use by Category 26
2.3 Chemical Waste 27
COMMENTS AND ANALYSIS 27
CHAPTER 3: PRIORITY CONCERNS RELATED TO CHEMICAL PRODUCTION, IMPORT, EXPORT & USE 28
3.1 Introduction 28
COMMENTS AND ANALYSIS 35
CHAPTER 4: REVIEW OF EXISTING LEGISLATION, POLICIES AND INSTITUTIONAL ARRANGEMENTS 37
4.1 Introduction 37
4.2 Existing Legislation 37
4.3 The National Environment Statute 4/1995 37
4.4 National Drug Authority, Atomic Energy Board, Uganda Oil Board 39
4.5 The Pharmacy and Drugs Act 39/1970 40
4.6 Control of Agricultural Chemicals Statute 8/1989 40
4.7 Investment Code Statute 1/1991 41
4.8 Uganda Oil Board Statute 2/1994 41
4.9 Uganda National Bureau of Standards Act 1/1983 41
4.10 National Agricultural Research Organization Statute 19/1992 42
4.11 Petroleum (Exploration and Production) Act 7/85 43
4.12 Employment Decree 4/1975 43
4.13 National Drug Policy and Authority Statute 13/1993 43
4.14 National Medical Stores Statute 12/93 44
4.15 The Water Statute 9/1995 44
4.16 Workmen's Compensation Act Cap. 197 as amended by Act 5/1969 45
4.17 Factories Act Cap 198 45
4.18 Petroleum Act Cap 97 45
4.19 Phosphorous Matches Act Cap. 98 46
4.20 Public Health Act Cap. 269 46
4.21 Food and Drugs Act Cap. 271 47
4.22 Explosives Act Cap 309 47
4.23 Roads Act Cap 345 48
4.24 Specified Goods (Conveyance) Act Cap. 344 48
4.25 Inland Water Transport (Control) Act Cap 348 48

4.26 The Ratification of Treaties Act 5/1998 49
REVIEW OF NON-REGULATORY MECHANISMS 49
COMMENTS AND ANALYSIS..... 63
CHAPTER 5: MINISTRIES, AGENCIES & OTHER INSTITUTIONS MANAGING CHEMICALS 65
5.1 Ministry of Agriculture Animal Industry and Fisheries 65
5.2 Agrochemicals Control Board 65
5.3 National Agricultural Research Organisation (NARO) 66
5.4 Namulonge Agricultural and Animal Production Research Institute (NAARI) .. 66
5.5 Fisheries Research Institute (FIRRI) 66
5.6 Ministry of Health..... 66
5.7 The National Drug Authority 66
5.8 The National Medical Stores (NMS) 66
5.9 Uganda Virus Research Institute (UVRI)..... 67
5.10 Ministry of Lands, Water and Environment..... 68
5.11 Ministry of Finance and Economic Development 68
5.12 Ministry of Education and Sports 68
5.13 Ministry of Internal Affairs 69
5.14 Ministry of Works Housing and Communication..... 69
5.15 Ministry of Justice and Constitutional Affairs..... 69
5.16 Ministry of Energy and Mineral Resources 69
COMMENTS AND ANALYSIS..... 70
CHAPTER 6: RELEVANT ACTIVITIES OF INDUSTRY, PUBLIC INTEREST GROUPS AND RESEARCH SECTOR 71
6.1 Description of Organisations/ Programmes 71
6.2 Summary of Expertise available Outside of Government..... 71
COMMENTS AND ANALYSIS..... 72
CHAPTER 7: INTERMINISTERIAL COMMISSIONS & CO-ORDINATING MECHANISMS 73
7.1 National Drug Authority 73
7.2 Agricultural Chemicals Board..... 73
7.3 National Environment Management Authority (NEMA) 74
7.4 Description of Inter-ministerial Commission and Coordinating Mechanism..... 75
7.5 Mechanisms for obtaining Input from Non-Government Bodies..... 76
COMMENTS AND ANANLYSIS..... 76

CHAPTER 8: DATA ACCESS AND USE *77*
8.1 Availability of Data for National Chemical Management **77**
8.2 Location of National Data **77**
8.3 Procedures for Collecting and Disseminating National data **79**
8.4 Availability of International Literature **80**
8.5 Availability of International Databases **80**
8.6 National Information Exchange System **81**
COMMENTS AND ANALYSIS **81**
CHAPTER 9: TECHNICAL INFRASTRUCTURE *83*
9.1 Overview of Laboratory Infrastructure **83**
9.2 Government Information Systems /Computer Capabilities **85**
9.3 Overview of Technical and Education Programmes **85**
COMMENTS AND ANALYSIS **85**
CHAPTER 10: INTERNATIONAL LINKAGES *87*
10.1 Cooperation and Involvement with International Organisations, Bodies and Agreements **87**
10.2 Participation in Relevant Technical Assistance Projects **90**
COMMENTS AND ANALYSIS **90**
CHAPTER 11: AWARENESS/UNDERSTANDING OF WORKERS AND THE PUBLIC *92*
11.1 Legal instruments for raising awareness on chemical management **92**
Laws/Legislation *92*
11.2 Awareness raising to workers **93**
11.3 Awareness raising to the public **93**
11.4 Awareness and education institutions and programmes **93**
11.5 Funding for awareness raising and education programmes **95**
11.6 Availability of tools/facilities for awareness raising **95**
11.7 Raising awareness and education to the public for effective participation in environmental management initiatives **95**
CHAPTER 12: RESOURCES AVAILABLE AND NEEDED FOR CHEMICALS MANAGEMENT *96*
12.1 Resources Available and Needed in Government Ministries/Institutions **96**
12.2 Resources Needed by Government Institutions to fulfil Responsibilities related Chemicals Management **98**
COMMENTS AND ANALYSIS **99**

ANNEX 1: GLOSSARY *101*

ANNEX 2: NAMES AND ADDRESSES OF KEY INDIVIDUALS AND ORGANIZATIONS *102*

APPENDIX 1: ABBREVIATIONS/ACRONYMS *104*

FOREWORD

This National Profile is intended to provide a comprehensive initial assessment of the national chemicals management infrastructure relating to the institutional, legal, administrative as well as technical aspects, along with the understanding of the nature and extent of chemicals availability and use.

Various priorities of concern raised in the report relate to the entire chemical life cycle and hence affect all sectors of the national economy. It is undisputed that an integrated approach with the involvement of all stakeholders including policy makers, government agencies and institutions, non-governmental agencies, the donor community and the general public is necessary for effective chemicals management.

Chemicals are indispensable in many economic activities, however their misuse or failure to follow best practice is costly. Integrated chemicals management has been recognised globally. Chapter 19 of "Agenda 21" adopted by Heads of State at the United Nations Conference on the Environment and Development in 1992, agreed on the goal of achieving sound management of chemicals by the year 2000. The United Nations Institute for Training and Research (UNITAR) sponsored this National Profile.

The main objective of assisting countries to assess and strengthen their national capabilities and capacities for management of chemicals could not have come at a better time and is timely. The preparation of this National Profile has served as an effective component towards broader national efforts to ensure environmental protection and sustainable development. It is important to promote safe management and use of chemicals for agricultural, industrial, public health and consumer uses in order to avoid adverse impact to human health, the ecosystem and the environment in general to ensure sustainable development. The assistance provided by UNITAR/IOMC and others who contributed to the preparation of the National Profile is highly appreciated.

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INTRODUCTION TO THE NATIONAL PROFILE

Linkage of the National Profile to the International Policy Framework for the Sound Management of Chemicals

In June 1992, representatives of 178 nations, among them Uganda, met in Rio de Janeiro, Brazil, to decide on what actions were needed to provide for environmentally and socially sustainable development. The Earth Summit (the United Nations Conference on Environment and Development – UNCED-) devised integrated strategies meant to halt and reverse the negative impact of human behaviour on the physical environment and to promote environmentally sustainable economic development in all countries. This worldwide programme of action is what has now come to be called Agenda 21 and incorporates the Rio Declaration on Environment and Development and the statement of principles for the sustainable management of forests adopted at the summit**.**

Agenda 21 now stands as a comprehensive blue print for action to be taken globally in every area, in which human activity impacts on the environment, and is as a result of observations at the Earth Summit that the then existing policies were deepening economic divisions within and between countries. This is culminating in increasing poverty, hunger, sickness and illiteracy, and causing the continuing deterioration of the ecosystem on which life on earth depends. It was therefore agreed upon that there was need to change course, to act and improve the living standards of those in need, protect the ecosystem and bring about a more prosperous future for all. This sustainable development, it was concluded, could only be achieved in a global partnership.

Further and subsequently in 1994 at an International Conference on Chemical Safety held in Stockholm, also attended by Uganda, a number of priorities were identified to implement Chapter 19 of Agenda 21, and establish an operational mechanism. This conference that brought together representatives from over 100 countries established the Inter-Governmental Forum on Chemical Safety (IFCS), through which countries now discuss their activities and priorities for the sound management of chemicals.

In recognition of the importance of assessing the existing infrastructure for chemicals management in various countries, the United Nations Institute for Training and Research (UNITAR), under the umbrella of the International Organisation for the Management of Chemicals (IOMC) has extended a programme to assist Countries in preparing National Profiles to assess their infrastructure for the sound management of chemicals. Uganda through the National Environment Management Authority (NEMA) therefore concluded a Memorandum of Agreement with UNITAR on 14th August 2001 and UNITAR provided assistance for undertaking the preparation of the National Profile.

Following the Rio Summit, Uganda as a country underwent a National Environment Action Planning (NEAP), process and the National Environment Management Authority (NEMA), was subsequently established by an Act of Parliament in May 1995. The Authority became operational in January 1996, as the principal agency in Uganda charged with the responsibility of co-ordinating, monitoring and supervising all matters related to environmental management in the country.

In line with Chapter 19 of Agenda 21 that deals with environmentally sound management of chemicals as well as illegal international traffic in toxic and dangerous products, Uganda has

undertaken a number of initiatives one of which of course is the development of this National Profile.

Other areas where Government of Uganda intends to base actions and priorities relating to chemicals management are:

(i) Strengthening national capabilities for the management of chemicals;
(ii) Information exchange on toxic chemicals and risks;
(iii) Prevention of illegal international traffic in toxic and dangerous chemical products;
(iv) Establishment of risk reduction programmes;
(v) Harmonisation of classification and labelling of chemicals;
(vi) Expanding and accelerating international assessment of chemical risks.

National Objectives and Anticipated Benefits of preparing the National Profile

Preparation of the National Profile was undertaken with the goal of coming up with an authoritative national reference document on the state of affairs with respect to chemicals management in Uganda. Such a document would ably point out strengths and weaknesses and therefore serve as a tool for laying out strategies for future action.

At the National Planning meeting held in Kampala on 20th February 2002, participants agreed that the National Profile was necessary to:

- Enhance the efficiency of government operations;
- Indirectly improve the special well-being of the society, through protection of health and the environment;
- Assess the management of chemicals throughout their life cycle;
- Facilitate national participation in international activities, through exchange of experience and uniform methods of reporting;
- Facilitate the incorporation of chemicals management in education and training programs for all members of the society;
- Ensure that chemicals import, formulation/use in the country is beneficial, and does not result in an economic burden to the government through health and environmental problems;
- Help identify gaps and weaknesses in the management of chemicals in the country;
- Serve as the basis for strengthening all national institutions with the view to developing capacities and capabilities of all stakeholders of chemicals management.
- Provide a comprehensive database on the various types of chemicals in use in the country;

- Help formulate procedures for the investigation of social impacts of chemicals applications and thereby, improve knowledge and understanding of potential impacts of chemicals on health and the environment;
- Provide the basis for better health and environmental protection as well as increase the awareness of chemical hazards at all sectors in their production, storage, transportation, and disposal.
- Help develop the necessary legal instruments for the control of the importation, exportation, production and use of chemicals. Provide an instrument to enhance

flow/exchange of information on chemicals to all stakeholders. Provide a document to serve as a basis to strengthen the institutional capabilities for decision-making on chemical management;

- Enlist or identify chemicals (nature, types, distribution) manufactured, imported/ exported, their quantities as well as qualities for the purpose of standardization;
- The document will enable the establishment of mechanism for regulating and monitoring chemical management in the country;
- Furthermore the document when completed is expected to provide the needed information for assessing the strength and weaknesses of existing national infrastructure (laboratories, storage facilities, and human resources) capabilities necessary for sound management of chemicals, thereby enabling the establishment of mechanisms for regulating and monitoring of chemicals in the country.

BENEFITS

The overall efficiency of government operations in this area will be enhanced and improved, as the National Profile will serve to:

- Provide practical information on the ongoing activities in the field of management of chemicals;
- Facilitate co-ordination and co-operation among Government Institutions in the field of Chemicals Management;
- Strengthen the national decision-making capacity in management of chemicals, including raising of awareness on the need for sound management of chemicals, motivating the necessary action;
- Facilitate dialogue and co-operation between the government and parties outside the government, such as industry and non-governmental organisations;
- Through the National Profile and its preparation process, the awareness of the Ugandan public of the need for sound management of chemicals would be raised. It will also ensure improved worker, public and environment protection as a consequence of improved knowledge and understanding of the potential and alternative means of addressing them. The National Profile will also facilitate a national dialogue on sound chemical management, involving all sectors of the society;
- As regards economic benefits, the National Profile will play a major role in strengthening the national economy and trade by making available the relevant information and therefore facilitating trade in chemicals, industrial and agricultural products which, rely on chemicals;
- The National Profile can be used as one of the necessary tools to ensure that chemicals produced, imported and exported are supporting economic goals, and are not creating economic burdens through health, environmental and safety problems;

- On international participation the National Profile will, enhance effective participation in international activities by easing compliance with international/regional reporting schemes and facilitating communication; exchange of experiences and expertise and co-operation in general among countries and this will provide a basis for identifying needs for technical and financial assistance;
- The National Profile would improve the international trade in chemicals by enhancing mode of transportation, handling and application of chemicals;
- The National Profile would definitely ensure easy accessibility of information on Chemicals Management as well as a coordinated and integrated system of all stakeholders in chemicals management;
- The National Profile will act as a basis for easy identification and assessment of the needs of a nation in terms of technical and financial assistance for international and donor communities;
- To citizens, the National Profile would be a meaningful education source especially with regard to dangers associated with the use of chemicals at the different stages in a chemicals life cycle;
- With the National Profile in place, monitoring and enforcement of legislation related to management of chemicals in the country will be effective. This shall lead to improved worker, public relationship and sound environmental protection.

Preparation of the National Profile

Following a series of formal and informal discussions between NEMA and UNITAR/IOMC and subsequent official application to UNITAR for financial and technical assistance towards the preparation of a National Profile, a Memorandum of Agreement (MOA) between NEMA and UNITAR concerning the preparation of a National Profile was concluded.

Under this MOA, UNITAR extended to NEMA US$12,000.00 for purposes of preparing the National Profile.

A National Planning meeting where a spectrum of stakeholders comprising Government Institutions, Non-Governmental Organisations, Research and Academic institutions and other relevant stakeholders were represented, was subsequently held on the 20th February 2002 at Grand Imperial Hotel, Kampala. In attendance as well, was the UNITAR representative - Mr. Jonathan Krueger. At the National Planning meeting, the National Co-ordinator was selected from NEMA and the following institutions formed the co-ordinating team:

- National Environment Management Authority (NEMA);
- Ministry of Gender, Labour and Social Welfare;
- Ministry of Agriculture Animal Industry and Fisheries (MAAIF);
- The Chief Government Chemist;
- Ministry of Health (MOH);
- Uganda National Bureau of Standards (UNBS);
- Ministry of Tourism, Trade and Industry (MTTI);
- Uganda Revenue Authority (URA);
- Makerere University Kampala, Chemistry Department;
- National Drug Authority (NDA);

- United Nations Development Programme (UNDP);
- Uganda Manufacturers Association (UMA);
- Kampala City Council (KCC);
- Uganda National Council for Science & Technology (UNCST);
- National Cleaner Production Centre/Uganda Industrial Research Institute;
- Uganda Environment Protection Forum (UEPF);
- Climate Development Initiatives (CDI);
- National Association of Professional Environmentalists (NAPE);
- Uganda Environment Education Forum (UEEF);
- Joint Energy and Environment Projects (JEEP), and
- National Union of Plantation and Agricultural Workers of Uganda (NUPAWU)

At the Initial National Planning Meeting, 4 working groups were set up for the collection of data and the preparation of the specific chapters of the National Profile. These working groups held a number of meetings for purposes of streamlining their work and the National Environment Management Authority (NEMA), acted as the Secretariat and co-ordinated the entire exercise.

EXECUTIVE SUMMARY

Introduction

In 1995 the National Environment Management Authority (NEMA) was created by an Act of Parliament and mandated to manage all aspects of the environment. This followed a comprehensive national environment action planning (NEAP) process that was a result of the Rio Conference. A framework law on the environment – the National Environment Statute (NES) was passed by Uganda's parliament in 1995. This Statute clearly requires that NEMA shall in the consultation with other lead agencies establish criteria for the classification of toxic and hazardous chemicals and materials and further, shall issue guidelines and prescribe measures for the management of toxic and hazardous chemicals and materials with respect to their: registration; labelling; packaging; advertising; control of imports and exports; distribution; storage; transportation; handling; monitoring of their effects on human health and the environment; disposal as well as restriction and banning.

There is therefore a clear policy on the overall mandate as regards chemicals management however the day today operationalization and coordination of the various stakeholders with respect to chemicals management is still weak. The preparation of this national profile therefore could not have come at a better time as it has clearly pointed out areas that require attention.

The National Environment Management Authority that is the Designated National Authority (DNA) for the Rotterdam and Stockholm as well as Basel Convention, all chemical related treaties, coordinated the preparation of the National Profile with financial assistance and technical guidance from UNITAR/IOMC. The experience gained and information gathered during the preparation of the profile will certainly lead to strengthening of the national chemicals management infrastructure.

Objectives

Preparation of the National Profile was undertaken with the goal of coming up with an authoritative national reference document on the state of affairs with respect to chemicals management in Uganda. Such a document would ably point out strengths and weaknesses and therefore serve as a tool for laying out strategies for future action.

Specifically the objectives on the National Profile were to:

- Enhance the efficiency of government operations;
- Indirectly improve the special well-being of the society, through protection of health and the environment;
- Facilitate national participation in international activities, through exchange of experience and uniform methods of reporting;
- Facilitate the incorporation of chemicals management in education and training programs for all members of the society;
- Help identify gaps and weaknesses in the management of chemicals in the country;
- Serve as the basis for strengthening all national institutions with the view to developing capacities and capabilities of all stakeholders of chemicals management.

- Provide the basis for better health and environmental protection as well as increase the awareness of chemical hazards at all sectors in their production, storage, transportation, and disposal.
- Help develop the necessary legal instruments for the control of the importation, exportation, production and use of chemicals as well as provide an instrument to enhance flow/exchange of information on chemicals to all stakeholders
- Provide a document to serve as a basis to strengthen the institutional capabilities for decision-making on chemical management;
- Provide the needed information for assessing the strength and weaknesses of existing national infrastructure (laboratories, storage facilities, and human resources) capabilities necessary for sound management of chemicals, thereby enabling the establishment of mechanisms for regulating and monitoring of chemicals in the country.

Preparation of the National Profile

A national coordinating team comprising twenty different and autonomous institutions/organisations was established with the secretariat at the National Environment Management Authority in February 2002. Representation on the coordinating team was from key government ministries and other stakeholders such as non-governmental organisations (NGOs), academic institutions, professional bodies, research institutions as well as industry. With the National Coordinating Team were 4 working groups each looking at specific chapters and collecting and compiling the relevant data and information.

Chemical Production, Import, Export & Use

The production of chemicals in Uganda is still minimal. Most chemicals used in Uganda are obtained through imports. The main types of chemicals imported into Uganda include petroleum products, fertilizer, pesticides as well as some industrial raw materials for the processing industry and mining industry. No chemical waste is imported in the country.

The data and information on chemical production, import, export and use is very poor. Reliability and accuracy of data and information collected in therefore questionable. Because of the porous nature of our borders, chemicals could be coming in or going out unaccounted for. It is therefore recommended that a countrywide survey be carried out to establish chemical's imports, exports and use. This information will form baseline data for a chemical register, which is a vital tool for the management of chemicals.

Priority Concerns Related To Chemical Production, Import, Export & Use

Chemical production in Uganda constitutes less than 2% of the total demand of chemicals, meaning most of the chemicals required are imported. There is no manufacturing industry worth mentioning save a few paint manufacturers who anyway import all their process materials.

Chemical information in relation to the sound management of chemicals is fragmented and scattered in various sectors and there is an urgent need for a multi-stakeholder management approach, involving representatives from government as well as concerned parties outside of government, industry, research institutions, labour as well as public interest groups. Such an

approach will strengthen the national capabilities and capacities for the sound management of chemicals in the country and fullfill the objectives of Agenda 21.

To address the countries priority concerns or needs the following measures could be considered:

(i) Provision of specialised infrastructure and man power needs development for quality control, certification, sanitation and waste management, toxicology, legal and non-regulatory mechanisms as well as trade;
(ii) Strengthening capacities in the line responsible ministries such as those for Trade and Industry; Water, Lands & Environment; Customs of Uganda Revenue Authority; Health; Agriculture Animal Industry and Fisheries; Forestry as well as Transport and Communications, in order to facilitate proper monitoring of chemicals throughout their life cycle;
(iii) Massive awareness raising including utilization of NGOs in the campaign using various media and educational programmes;
(iv) Establishment of a national information documentation system for the sound management of chemicals.

As far as Agro and Industrial chemicals are concerned in Uganda, there is insufficient information in addressing the priority concerns related to chemicals production, import, export and use due to a number of reasons that include:-

- Absence of statistical data to address the above-mentioned concerns;
- Inadequate information on solving the nature of problems encountered;
- Lack of commitment amongst the various stakeholders.

Whereas pesticide problems are concentrated in areas/regions practicing commercial farming problems caused by industrial chemicals are common to towns/cities.

Existing Legislation, Policies And Institutional Arrangements

The management of chemicals in Uganda has not been proper. A review of existing legislation indicates that the management of chemicals has been impeded by deficiencies in the law and other factors, which hinder law enforcement.

Generally, the main impediments have been identified to include: lack of serious political commitment, inadequate or un-coordinated legislation; uncoordinated efforts; insufficient information on chemicals in use; lack of health or environmental monitoring; lack of trained staff, equipment and other resources; absence of labelling or foreign labelling; faulty packaging or repackaging; lack of poison centres or accident preparedness; inappropriate transport; unsafe storage; easy accessibility by children or inexperienced adults; dangerous methods of use; excessive use or misuse; lack of or failure to use protective equipment or clothing; and, lack of disposal facilities for waste chemicals.

The production, transportation, use and disposal of chemicals are regulated by national and international legal instruments. Due to the cross-sectoral nature of chemicals management the law is fragmented into several pieces of legislation such as the Constitution of Uganda 1995, principle legislation such as National Environment Statute 4/1995, Water Statute 9/1995, Factories Act. Cap 198 and subsidiary legislation made thereunder.

Non-regulatory instruments and mechanisms as instruments are fairly recent and therefore are yet to take hold. The need for massive education is paramount and the thrust of educational awareness programmes should be directed at alerting the large illiterate population to the dangers posed by misuse of chemicals. Industry should be encouraged to adopt self regulatory programmes and approaches to minimise the risks entailed in the use of chemicals while government must be convinced that no-regulatory schemes can be as effective as the threat of legal sanctions in the management of chemicals. This will provide the framework for the successful implementation of policies put in place to properly manage chemicals.

In the long run, a comprehensive legislation covering all chemicals is envisaged. Presently the regulation on pesticides is considered adequate and incorporates all the international techniques for the management of pesticides. Management of industrial and other chemicals is still wanting and needs to be addressed.

Inter-ministerial Commissions & Co-ordinating Mechanisms

A few mechanisms have been established for chemical management among others for purposes of facilitating coordination and cooperation among various ministries, government bodies and NGOs and include mechanisms coordinated by, the National Drug Authority (NDA); NEMA and the Agricultural Chemicals Board.

National Drug Authority (NDA) is responsible for the development and regulation of drugs and pharmacies nationwide and have representation on its board comprising representatives from the Ministry of Health; Veterinary services under Ministry of Agriculture, Animal Industry and Fisheries; Ministry of Trade and Industry; Ministry of Internal Affairs; Ministry of Defence; Pharmaceutical and Health Supplies as well as the National Chemotherapeutics Laboratory, Ministry of Health; School of Pharmacy, Makerere University, Ministry of Education. Other representatives are: National Medical services; Uganda Medical Association; Pharmaceutical Society of Uganda; Uganda Veterinary Association; Uganda Herbalists; Uganda Dental Association; Joint Medical Stores; Uganda Aids Commission; as well as two persons from the public.

The Agricultural Chemicals Board (ACB) is responsible for registering and regulating all use, import, export, distribution and licensing of agriculture chemicals. It provides an advisory role to the Ministry of Agriculture. On the Board is representation from the Ministry of Agriculture; the dean of faculty of Agriculture, Ministry of Education; head of Agricultural Research; Government Chemist, Ministry of Internal Affairs; Veterinary Services from Ministry of Agriculture; Director Medical Services; NEMA representative; Uganda National Bureau of Standards representative; Chief Forest Officer and a representative of Chemical Industry

The National Environment Management Authority (NEMA) is responsible for the nationwide coordination of environmental concerns with relevant ministries and agencies as well as environmental policy planning and implementation, initiation/development of standards, guidelines, and legislation; environment impact assessment; public environment sensitisation and research; mobilisation, expedition and monitoring of resources for environmental management. NEMA works with all stakeholders since environment issues are multi-sectoral.

The effectiveness of these mechanisms is fairly adequate. However coordination at the micro level/ grassroots level is still a challenge due to insufficient human and facilitation of the inspectorate and enforcement section. The possible solutions are:

- To formulate specific legislation to control/regulate at the micro level;
- Nationwide capacity building in form of data, communication linkage, grass root control groups for management of chemicals;
- Nationwide sensitisation and awareness of chemical management.

Generally management of industrial and laboratory chemicals, precursors, cosmetics and food supplements are not established. An independent body with legal mandate to control these groups of chemicals needs to be set up or these chemicals can be allocated into the existing mechanisms.

These existing mechanisms work independently however each mechanism has a representative of the other mechanism or its mother ministries on its board.

Data Access and Use

National and international data and other information on chemical safety is sometimes available at various institutions mainly at Government offices and international organizations' head offices. This kind of information is quite useful in reducing health and environment effects if well utilized. The available information has however been not much used to the expected level. In most cases the information is sought by experts in specific areas, scholars etc. Poor utilization of information may be due to the public's weak theoretical background on the issues.

The quantity and quality of an adequate information base on management of chemicals can still be considered inadequate. It was established that there is a demand for information on management of chemicals from the public and there is a rising concern of chemicals throughout their "Life-cycle".

Initiatives for improving the databases should be prioritised. The existing databases may be strengthened by:

- Building up technical capacity for data management in all concerned institutions;
- Putting down the necessary infrastructure i.e. computers, internet, e-mail, telefax etc;
- Formulating, facilitating and publicizing the network for information bank in the country;
- Avail funding required as contributions to databanks in order that they become eligible for news subscription.

The scope for obtaining further local information on management of chemicals can be achieved through:

- Joint participation and contributions of all stakeholders;
- Surveys;
- Monitoring at entry points;
- Overall monitoring of chemicals throughout their 'life cycle' and a chemical material balance where possible;
- Registration and compilation of an inventory of all chemicals used in the country.

Technical Infrastructure
The major infrastructure (laboratories and computers) with capacity to undertake chemicals analysis are located in government institutions (research, University, industry) which are in place to perform specific functions. Both Government and the private sector have computer systems within the framework of projects. In general, computer literacy is high. However system management is not very well established.

The most valuable and abundant facility for chemical management is human resources. There are many qualified well-trained personnel in different institutions widely spread in many parts of the country although most equipped laboratories are located in and around Kampala the capital city.

Specific training on chemical management and technical handling of equipment is a requirement to enable personnel meet this challenge. In addition to the syllabi taught at higher institutions, aspects of chemical managements should be included. There is a significant need to establish a National policy on chemical management including monitoring, usage, handling and disposal and to create a chemical databank. This would be a useful source of information for policy making and planning.

International Linkages
Uganda has in the past participated in meetings of the United Nations such as the United Nations Conference on Human Environment held in Stockholm in 1972, the United Nations Conference on Environment and Development (UNCED) held in Rio de Janerio in 1992 and the recently held World Summit on Environment and Development (Rio+10) held in Johannesburg.

Uganda also played an active role in the preparation of the Rotterdam Convention on the Prior informed Consent procedure, the Stockholm Convention on Persistent Organic Pollutants and has signed and ratified the Vienna Convention on the Protection of the Ozone Layer, Montreal protocol on substances that deplete the ozone layer, the Basel Convention on the control of transboundary movement of hazardous wastes, the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change.

While Uganda is signatory to several conventions and agreements related to the management of chemicals, the national implementation of the principles of these agreements can not be said to be excellent. Area's where there has been some amount of activity has been the Basel Convention, Montreal Protocol, as well as the Framework Convention on Climate Change. Uganda (with international and donor support) has undertaken projects to phase out and recycle refrigerants, undertaken the training of target groups on hazardous waste management to mention a few areas.

Awareness/Understanding of Workers And The Public
As chemical use, handling, manufacture, import and export, storage and disposal increase, chemicals risks are increasingly becoming an issue of concern.

Whilst there are some legal instruments in place that help promote management of chemicals, in most cases these laws do not adequately address raising awareness both to workers and the

public. Public apathy over proper management of chemicals in the environment is indicative of the low level of awareness with regard to chemicals management in Uganda. There is need to inform and sensitise the general public using all tools possible. Workshops, seminars and meetings are seen as an effective tool for the community level.

The idea of Government in promoting the concept of Public Participatory Partnerships (PPPs) is a new phenomenon but is picking up and is viewed as a positive step. In the water sector for example, as a pilot phase, they are being implemented in 6 districts. Government - Public Participatory Partnerships also do exist in other government institutions although they have not taken root and advantage of such arrangements can be taken to ensure that awareness of workers and the public in as far a chemicals management is concerned benefits.

Resources available and needed for Chemicals Management

In general government ministries/agencies lack the capacity to handle or address chemicals management and have not realised the relevancy of doing so or rather considered it a priority. Usually there is limited or no budget for chemicals management in most government ministries/agencies. Most government ministries have restricted themselves to policy issues without, putting in place adequate structures to monitor and implement the policies they put in place; which policies are also still inadequate in as far as chemicals management is concerned. In some ministries/sectors where the technical staff are available, there is inadequate funding; weak policies; lack of a chemicals inventory and lack of equipment, which has led to poor service delivery.

Capacity in terms of qualified human resource and finance are necessary ingredients towards the achievement of sound chemicals management in the country.

Ministries/institutions still require awareness on their roles with respect to management of chemicals, as many of them feel that it is not their direct responsibility. There is therefore great need for capacity building and human resource training in almost all areas of chemicals management. However, the key training needs that have been identified among others include the following with respect to chemicals management: storage; disposal; legislation development; chemicals waste management, as well as safe use and handling of chemicals.

Conclusions and Recommendations for Follow-up

The establishment of NEMA as the principal body to monitor, coordinate and supervise all matters to do with environmental management is a clear indication of the seriousness that government of Uganda puts to environment management. Development of chemicals management programmes has been hinged on an integrated multi-stakeholder approach. The preparation of this National Profile will therefore go a long way to focus the efforts and actions of concerned stakeholders for sustainable chemicals management in the country. During the strenuous collection of information and data for the National Profile, weaknesses of the existing infrastructure and status quo for chemicals management has been unearthed and it is hoped that appropriate action will be taken to find remedies and solutions.

Key areas earmarked for immediate follow-up so as to streamline and strengthen chemicals management capacity and capabilities include:

- Improvement in capacity to collect, collate and disseminate information on chemicals management in order to facilitate informed decision making;
- Undertaking of a thorough chemicals inventory in the country;
- Intensification of efforts aimed at education as well as awareness raising and training of all relevant stakeholders;
- Enhancement of monitoring capacity, hazard and risk assessment as well as interpretation and communication;
- Building capacity for implementing and enforcing compliance with chemicals management regulations;
- Strengthening technical infrastructure of laboratories, training institutions and NGOs;
- Promotion of the adoption of suitable strategies for pollution prevention and waste minimisation such as cleaner production concepts/principals in relevant industrial sectors;
- Strengthening of weak legislation to ensure the availability of safe and effective chemicals management

The prime concern is that chemical management must be defined as a priority area of concern. Once that step has been taken, concrete and well-planned initiatives must be taken to adequately manage chemicals in Uganda, in spite of limited financial and other capacities to do so. Whilst capacity in chemicals management in Uganda remains extremely low, the country is in a position to use the findings of this profile to draw up a strategic plan for chemical management, that effectively meets the needs identified and fills the gaps that exist. It is expected that this profile will provide a reasonably comprehensive account of the situation with regard to Uganda's capacity to manage chemicals, and in so doing provide a foundation and rationalisation for international agencies to pursue projects in this sector.

CHAPTER 1: NATIONAL BACKGROUND INFORMATION

1.1 Physical, Demographic and Climatic Description

Uganda is a land locked country with an area of 241,500 km^2 lying astride the equator. It is located in the eastern region of Africa, situated between latitudes 1º 30' south and 4º North and longitudes 29º 30' East and 35º East. The country is bordered by the Republic of Kenya to the east, Tanzania and Rwanda to the south, the Democratic Republic of Congo (former Zaire) to the west and Sudan to the north. Of the total area coverage of 241,500 sq. km about 15.3% is open water, 3.0% permanent wetlands and 9.4% seasonal wetlands. The perimeter of Uganda is approximately 16,630km.

Figure 1: Map of Uganda

Though situated on the equator, altitude, relief and many large water bodies moderate the tropical climate. Temperatures average 21^0C ranging between 16^0C the 27^0C. Annual rainfall varies from 500 mm in the East to 2000 mm around Lake Victoria and the mountains. Rainfall is moderately reliable, is bimodal in the South and unimodal moving towards the Northern border. Generally, the country's climate is classified as humid with a steady sunshine regime all year round, only modified by cloud cover during rainy seasons.

The main topographical features of the country include the high plateau modified by eroded volcanic mountains in the northern eastern and western borderlands. The Rwenzori and Mufumbira volcanic mountains are part of the western rift valley, which continues to Tanzania.

The drainage system is dominated by the Lake Victoria basin whose only outlet at Owen falls dam marks the beginning of the River Nile journey to Egypt, through Lakes Kyoga and Albert. Other smaller lakes include Lake George, and Edward. Notable rivers are Kagera, Katonga, Kafu, Mpanga and Mubuku, which form part of the intricate drainage systems in the country. Open water covers 15 per cent of the total area of the country while wetlands cover another 13 per cent.

1.2 Form of Government

Uganda is a republic governed under the movement system with executive power vested in the president while legislative power rests with a legislature of up to 300 Members of Parliament serving a five-year term at national level. In addition the country operates a local government system comprising local government councils.

1.3 Official Language

English if the official language

1.4 Local Languages

While english the official national language is taught in grade schools, used in courts of law and by most newspapers and some radio broadcasts other local languages include Ganda or Luganda (most widely used Bantu language and is preferred for native language publications in the capital and may be taught in schools as well. Other languages include Lusoga 8%; Luo 12%; Runyankore/Rutoro/Rukiga 9% and Swahili 10%.

1.5 Ethinic Groups

Ugandas population is made up of a number of ethnic groups. The largest being the Baganda 17%, Karamojong 12%, Basogo 8%, Iteso 8%, Langi 6%, Nyakore 6%, Bagisu 5%, Acholi 4%, Lugbara 4%, Bunyoro 3%, Batoro 3%, non-African (European, Asian, Arab) 1%, other 23%

1.6 Religion:

Predominantly Christian, comprising of the following major groupings: Roman Catholic 33%; Protestant 33%; Muslim 16%; indigenous beliefs 18%.

1.7 Total Population

Based on the 1991 Census and projections, Uganda's population is currently (2002 census figures) estimated at 24.7 million with a growth rate of 2.5%. The urbanization rate is 14.4 per cent and life expectancy is estimated at 48 years for men and 49 for women. The fertility rate has stagnated at 6.9. Adult literacy rates are 45 per cent for women and 70 per cent for men. It is estimated that in 2018, Uganda will have a population of 36.4 million people.

1.8 Urban and Rural Population

Settlement patterns and distribution in both rural and urban areas have been influenced by history, infrastructure, land forms, productivity of land, climate, vegetation, water supply, presence of disease agents, land tenure systems and economic activities among others.

The majority of the population of Uganda estimated at 85% live in the rural areas; however the percentage distribution of rural areas varies by district. The urban population presently is estimated at 15% (Table 1), of which the majority live in Kampala district. The least

urbanised districts are Pallisa and Ntungamo. Kampala is the most urbanised district (100%) because of its status as the capital city.

Table 1: Uganda Mid-year population projections (Millions)

Year	Rural	Urban	Total	% Urban
1995	16.682	2.580	**19.263**	13.40
1996	17.090	2.758	**19.848**	13.90
1997	17.493	2.945	**20.438**	14.41
1998	17.887	3.142	**21.029**	14.94

Source: MFEP (1995)

1.9 Average Age of Population

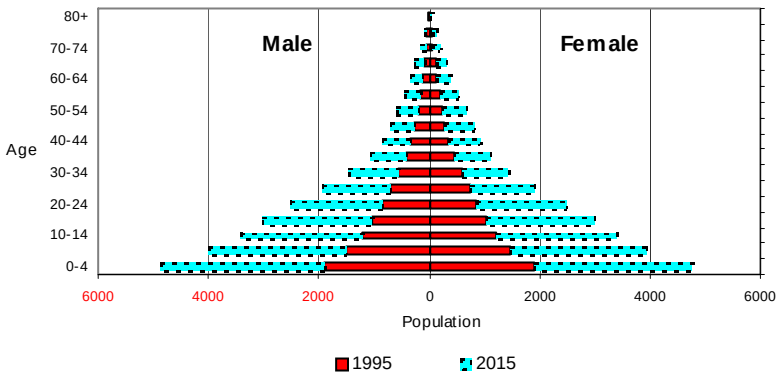
Uganda's population is growing at an average rate of 2.5% per year. Since the 1991 National Housing and Population Census, the country's population has increased from 16.7 million and was estimated at over 21 million in 1998; an increase of about 26% in seven years.

The population is typically young, showing larger proportions in the younger age groups as clearly shown in the population pyramid (Figure 2). Uganda has a typical broad-base population pyramid characteristic of least developed countries (LDCs), which signifies high fertility and mortality rates. The population dynamics have been constant over the years, and the shape has not altered. About 47% of the country's population is still under 15 years of age and there are more females than males.

An indication of the average age and corresponding percentage of the population is indicated below:

0-14 years: 51.08% (male 6,150,038; female 6,100,880)
15-64 years: 46.78% (male 5,613,499; female 5,607,526)
65 years and over: 2.14% (male 244,216; female 269,553) (2001 est.)

Figure 1: Distribution of the household population by age



1.10 Birth Rate

Fertility can be looked at in three different ways; namely by considering crude birth rate (CBR), total fertility rate (TFR) and age specific birth rate (ASPR). The age specific birth rate is a more precise measure of fertility, which shows the highest levels among childbearing age groups especially the 20-24 age group. Uganda's CBR has remained above 50 per 1000 population for some time and compares well with other countries in the East African region. Estimates of CBR prepared by the Population Reference Bureau show that Tanzania has 50, Rwanda, 51, Malawi, 52 and Zambia, 51.

With TFR, Uganda has remained high and steady, averaging 7.1 (1991) children per woman as compared to Kenya (6.7), Democratic Republic of Congo (6.1) and Sudan (6.4). TFR is a numerical measure of the average number of children a woman can bear by the end of her reproductive life. The level of fertility in Uganda has been consistently high for more than 30 years. This high TFR figure is due to the fact that child-bearing in Uganda starts early. The Uganda Demographic and Health Survey, however, shows that the TFR has dropped slightly to about 6.8 (1995).

1.11 Life Expectancy

Life expectancy is currently estimated at 40.5 years

1.12 Literacy

Adult literacy is estimated at 61.8% of the total population but varies between men and women with the male estimated at 73.7% and female at 50.2%.

CHAPTER 2:CHEMICAL PRODUCTION, IMPORT, EXPORT & USE

2.1 INTRODUCTION: CHEMICAL PRODUCTION AND TRADE

Trade Liberalisation has led to increase in flow of goods into and out of the country. Due to increased industrial activities over the years, it can safely be assumed that there has been an increase in the use of chemicals in the country.

The production of chemicals in Uganda is still minimal. Most chemicals used in Uganda are obtained through imports. Customs Department of Uganda Revenue Authority (URA) handles all issues related to imports and exports of goods.

However, for certain categories of chemicals, specialised bodies/authorities have to approve their imports. Agrochemicals such as fertilisers, herbicides and the like, have to be approved by Agricultural Chemicals Board, while human and veterinary drugs importation has to be approved by National Drugs Authority.

This chapter gives basic information on imports, exports, production and use of chemicals in Uganda.

Table 2.A: Chemical Production and Trade

Chemical Type	Production Manufacturing Tons/Year	Imports Tons/ Year	Imports Value U.Shs.	Formulation Packaging	Exports Tons/Year
Pesticides[1] (Agricultural, public health and consumer use)	-	4298.5[a]	-	Powder and liquid	-
Fertilisers[1]	-	15,500[a]	-	Powder	-
Petroleum[2]	-	450,000[b]	-	Liquid and solid	-

a: Imported from Israel, Kenya, China and South Africa

b: Imported from Arab Gulf, South Africa and Other Sources where price is competitive

1: Source URA, 2001

2: Caltex Oil (U) Ltd., 2001

2.2: Chemical Use by Category

Table 2.B Chemical Use By Category

Type of Chemicals	Number of Tons Used /Year In Uganda
Pesticides - Agricultural, public health, consumer use	4298.5[1]
Fertilisers	15,500[1]
Petroleum Products	480,000[2]

1: Source: Baltons (U)

2: Source; Caltex Oil (U) Ltd.

2.3 Chemical Waste

Uganda does not import or export chemical waste for processing or disposal purposes. Some chemical wastes generated e.g. used oils are utilised by some industries (tea and sugar) as furnace fuels. Some used oils are also put to use as wood preservatives however this is not being encouraged. However, there are substantial amount of expired chemicals especially in institutions (laboratories) as well as some pesticides and obsolete chemicals such as PCBs in old transformers that need to be disposed off. At the moment there are no guidelines on chemical waste management.

COMMENTS AND ANALYSIS

It has been established that data and information on chemical production, import, export and use is very poor. Reliability and accuracy of data and information collected in therefore questionable.

Because of the porous nature of our borders, chemicals could be coming in or going out unaccounted for. It is therefore recommended that a countrywide survey be carried out to establish chemical's imports, exports and use. This information will form baseline data for a chemical register, which is a vital tool for the management of chemicals.

CHAPTER 3: PRIORITY CONCERNS RELATED TO CHEMICAL PRODUCTION, IMPORT, EXPORT & USE

3.1 Introduction

Chemical production in Uganda constitutes less than 2% of the total demand of chemicals meaning most is imported. There is no manufacturing industry worth mentioning save a few paint manufacturers who anyway import all their process materials.

Mining activities used to be prevalent in the south western and western part of the country while on the other hand, agro-based industries are distributed all over he country. With respect to production, import, export and use, there are priority concerns for all sectors of application.

Liquid effluents resulting from many of the industrial establishments especially in Kampala, Jinja, Mbarara and Kasese in some cases, discharge into the environment without any pre-treatment. The effect of this is that the receiving media is polluted. The National Environment Management Authority (NEMA) has developed effluent discharge standards and is enforcing them together with other stakeholders. Gaseous emissions from both manufacturing and mining industry are also of concern. There is usually uncontrolled emission of gases and particulate matter from industries as well as vehicles. NEMA is developing air quality standards to address this issue. Table 3A summarises the main problem areas of concern related to the management of chemicals.

Table 3 A: Description of Problem Areas

Agro-Chemicals

Nature of Problem	City/ Region	Brief description of problem	Pollutants
Air Pollution	National	Through generation of fumes Through burning of pesticide packaging Through spraying Through dusting Through use of aerosols Through fumigation	Fertilizers Insecticides Fungicides Herbicides Wood preservatives Anti-pest products
Pollution of Inland Waterways	National	Use of pesticides near water ways Washing containers in water ways Direct discharge of agrochemicals into water bodies	Same as above
Marine pollution	Regional	Most water ways link up into lakes Most flower growers are found on lakeshores.	Same as above

Nature of Problem	City/ Region	Brief description of problem	Pollutants
Ground water pollution	National	Through infiltration of contaminated water	Same as above
Soil contamination	National	Through spraying Through dusting During transportation Disposal of obsolete chemicals Pesticide residues Through disposal of packaging materials	Same as above
Drinking water contamination	National	No water treatment in villages Inadequate treatment in towns Most water ways/bodies are source of drinking water Using chemical containers for drinking water	Same as above
Occupational Health agricultural	Country wide	Lack of awareness of dangers associated with pesticides Most rural users Lack safety gears Lack of adequate information Safety gears are expensive, uncomfortable hence reluctant to put on	Fertilizers Insecticides Fungicides Herbicides Wood preservatives Anti-pest products
Pesticide residues in food	National	Improper post harvest handling Extent of food contamination not known Excessive and frequent use of pesticides Pesticides discharged into water bodies accumulate in fish	Same as above
Hazardous waste treatment/disposal	National	Lack of awareness Lack of treatment technologies Lack of disposal facilities	Same as above
Storage/Disposal of Obsolete pesticides	National	Lack of adequate storage facilities Lack of adequate logistics in distribution of pesticides Importation of excess than needed Lack of adequate disposal facilities	Same as above

Nature of Problem	City/Region	Brief Description of Problems	Chemicals/ Pollutants
Unknown pesticide importation	National	Varieties are too many to monitor Due to locally re-packed pesticides Lack of quality control guide lines on packaging	Same as above
Pesticide poisoning	National	Safety and protective gears are expensive and un comfortable Use of pesticide containers for food and drinks Misuse of pesticides Lack of awareness	Same as above
Public health	National	Through ground water pollution Through food contamination Through air pollution Through occupation Through drinking contaminated water	Same as above
Use of persistent organic pollutants	National	Inadequate control of restricted pesticides	Same as above
Pesticide accidents transport	National	Due to spills on board Careless driving/riding Transport with other products	Same as above

Table 3A

Industrial Chemicals

Nature of Problem	City/Region	Brief Description of Problems	Chemicals/ Pollutants
Air pollution	Kampala and other urban centers	Emissions from fuel boilers Through venting Through melting Generating of power Through heating Exhaust from production process Through chemical reactions Spill sites Through cleaning and drying of equipments Evaporation from storage tanks	Alkaline substances Petroleum products Co_x,No_x,SO_x Palm steroids Chloroform Thinners Sprays Hydrocarbons Detergents Steam Chlorine gas Ammonia Methylated spirit
Nature of Problem	**City/Region**	**Brief Description of Problems**	**Chemicals/ Pollutants**

Pollution of inland water ways	Same as above	Oil spills into streams Sludge from storage tanks Effluents from servicing oils Through container disposal Discharge of semi-treated effluents	Dyes/colours Food colours Oils Acidic substances Plastic polymers Pharmaceuticals Solvents Filters Food additives Packaging materials Petroleum products Metallic inorganic salts and solutions
Marine pollution	Regional	Run off from water-ways/bodies link up into lakes	Same as above
Soil contamination	Regional	During disposal During transportation During formulation During leakages During distribution During use	Same as above
Drinking water contamination	National	Most water ways and bodies in which effluents are discharged are a source of drinking water	Same as above
Ground water pollution	Regional	Due to infiltration of contaminated water	Same as above
Occupational health industrial	Regional	Inadequate safety gears Reluctance to put on safety gears Burns due to Caustic	Same as above
Chemical residues in food	Regional	Contaminated water flows into agricultural fields and water bodies containing fish	Same as above
Hazardous waste treatment/disposal	Same as above	Lack of disposal facilities Lack of treatment technologies Lack of awareness on the dangers Lack of adequate policy guidelines Lack of seriousness	Same as above
Chemical poisoning	National	Reluctancy to putting on safety gear Taking over-doses Misuse of drugs for different illnesses Taking expired drugs	Same as above and tablets, creams, syrups, capsules, oral rehydration salts, Penicillin

Nature of Problem	**City/Region**	**Brief Description of Problem**	**Chemicals/ Pollutants**
Public health	National	Same as above	Same as above

		Through food contamination Through air pollution Soil contamination Through drinking contaminated water Through ground water contamination	
Chemical accidents transport	National	Seals not properly tightened Careless driving	Same as above
Storage/Disposal of obsolete chemicals	Regional	Importation of low quality chemicals Delays in transportation of raw materials leading to expiry Discharge old transformers from use	Same as above and PCBs
Unknown chemical imports	Regional	The extent is not known	Same as above
Persistent Organic Pollutants	National	Discharge old transformers from use	PCBs

TABLE 3B: PRIORITY CONCERNS RELATED TO CHEMICALS
Agro-Chemicals/Pesticides

Nature of Problem	**Scale of Problem**	**Level of Concern**	**Ability to Control Problem**	**Availability of Statistical Data**	**Specific Chemicals Creating Concerns**	**Priority Ranking**
Air Pollution	National	Medium	Low	Insufficient	Table 3 A	3
Pollution of Inland Waterways and Water bodies	National	Medium	Low	Insufficient	Same as above	2
Marine pollution	Regional	Medium	Low	Insufficient	Same as above	2
Ground water pollution	National	Medium	Low	Insufficient	Same as above	2
Soil contamination	National	High	Low	Insufficient	Same as above	1
Nature of Problem	**Scale of Problem**	**Level of Concern**	**Ability to Control Problem**	**Availability of Statistical Data**	**Specific Chemicals Creating Concerns**	**Priority Ranking**
Pesticides residues in Food	National	Medium	Low	Insufficient	Same as above	3
Drinking water contamination	National	High	Low	Insufficient	Same as above	1

Hazardous Waste Treatment/ Disposal	Regional	High	Low	Insufficient	Same as above	1
Occupational Health Agriculture	National	High	Low	Insufficient	Same as above	1
Public Health	National	High	Low	Insufficient	Same as above	1
Pesticides Accidents: Transport	National	Medium	Medium	Insufficient	Same as above	3
Unknown Pesticides Imports	National	Low	Medium	Insufficient	Same as above	4
Storage/ Disposal of Obsolete Pesticides	Regional	High	Low	Insufficient	Same as above	1
Pesticides Poisoning/ Suicides	National	Medium	Medium	Insufficient	Same as above	3
Use of Persistent Organic Pesticides	National	Low	Medium	Insufficient	Same as above	3

Table 3b: Industrial Chemicals

Nature of Problem	**Scale of Problem**	**Level of Concern**	**Ability to Control Problem**	**Availability of Statistical Data**	**Specific Chemicals Creating Concerns**	**Priority Ranking**
Air Pollution	National	High	Low	Insufficient	Table 3A	1
Pollution of Inland Waterways	Regional	Medium	Medium	Insufficient	Same as above	3
Marine pollution	Regional	Medium	Medium	Insufficient	Same as above	3
Ground water pollution	Regional	Medium	Medium	Insufficient	Same as above	3
Soil contamination	Regional	Medium	Medium	Insufficient	Same as above	3
Chemical residues in Food	National	Medium	Low	Insufficient	Same as above	2
Drinking water contamination	Regional	High	Low	Insufficient	Same as above	1

Nature of Problem	Scale of Problem	Level of Concern	Ability to Control Problem	Availability of Statistical Data	Specific Chemicals Creating Concerns	Priority Ranking
Hazardous Waste Treatment/ Disposal	National	Medium	Medium	Insufficient	Same as above	3
Occupational Health Industrial	Regional	Medium	Medium	Insufficient	Same as above	3
Chemical Accidents Transport	National	Low	Medium	Insufficient	Same as above	4
Public Health	National	High	Low	Insufficient	Same as above	2
Unknown Chemical Imports	National	Medium	Medium	Insufficient	Same as above	3
Storage/ Disposal of Obsolete Chemicals	National	High	Low	Insufficient	Same as above	1
Chemical Poisoning/ Suicides	National	Medium	Medium	Insufficient	Same as above	3
Persistent Organic Pollutants	National	Medium	Medium	Insufficient	Same as above	3
Nature of Problem	**Scale of Problem**	**Level of Concern**	**Ability to Control Problem**	**Availability of Statistical Data**	**Specific Chemicals Creating Concerns**	**Priority Ranking**
Pesticides Poisoning/ Suicides	National	Medium	Medium	Insufficient	Same as above	3
Use of Persistent Organic Pesticides	National	Low	Medium	Insufficient	Same as above	3
Storage/ Disposal of Obsolete Chemicals	National	High	Low	Insufficient	Same as above	1
Chemical Poisoning/ Suicides	National	Medium	Medium	Insufficient	Same as above	3

Nature of Problem	Scale of Problem	Level of Concern	Ability to Control Problem	Availability of Statistical Data	Specific Chemicals Creating Concerns	Priority Ranking
Persistent Organic Pollutants	National	Medium	Medium	Insufficient	Same as above	3

COMMENTS AND ANALYSIS

Chemical information in relation to the sound management of chemicals is fragmented and scattered in various sectors and there is an urgent need for a multi-stakeholder management approach, involving representatives from government as well as concerned parties outside of government, industry, research institutions, labour as well as public interest groups. Such an approach will strengthen the national capabilities and capacities for the sound management of chemicals in the country and fullfill the objectives of Agenda 21.

The National Environment Management Authority is tackling the present environmental problems as these were also identified during the National Environment Action Planning (NEAP) process and from subsequent inspections on the ground. To help further address the countries priority concerns or needs as described in this chapter, the following measures could be considered:

(i). Provision of specialised infrastructure and man power needs development for quality control, certification, sanitation and waste management, toxicology, legal and non-regulatory mechanisms as well as trade;

(ii). Strengthening capacities in the line responsible Ministries such as those for Trade and Industry; Water, Lands & Environment; Customs of Uganda Revenue Authority; Health; Agriculture Animal Industry and Fisheries; Forestry as well as Transport and Communications, in order to facilitate proper monitoring of chemicals throughout their life cycle;

(iii). Massive awareness raising including utilization of NGOs in the campaign using various media and educational programmes;

(iv). Establishment of a national information documentation system for the sound management of chemicals.

In conclusion therefore looking at the specific sectors one can summarise thus:

As far as Agro and Industrial chemicals are concerned in Uganda, there is insufficient information in addressing the priority concerns related to chemicals production, import, export and use due to the following reasons:-

- There is no statistical data in place to address the above-mentioned concerns
- There isn’t enough/adequate information on solving the nature of problems encountered
- Most stakeholders assume though convinced, the exercise to affect their industries

Pesticide problems are concentrated in areas/regions practicing commercial farming whereas problems caused by industrial chemicals are common to towns/cities.

CHAPTER 4: REVIEW OF EXISTING LEGISLATION, POLICIES AND INSTITUTIONAL ARRANGEMENTS

4.1 Introduction

The state of affairs indicates that the management of chemicals in Uganda has not been proper. A review of existing legislation indicates that the management of chemicals has been impeded by deficiencies in the law and other factors, which hinder law enforcement.

Generally, the main impediments include: lack of serious political commitment, inadequate or un-coordinated legislation; uncoordinated efforts; insufficient information on chemicals in use; lack of health or environmental monitoring; lack of trained staff, equipment and other resources; absence of labelling or foreign labelling; faulty packaging or repackaging; lack of poison centres or accident preparedness; inappropriate transport; unsafe storage; easy accessibility by children or inexperienced adults; dangerous methods of use; excessive use or misuse; lack of or failure to use protective equipment or clothing; and, lack of disposal facilities for waste chemicals.

4.2 Existing Legislation

The production, transportation, use and disposal of chemicals is regulated by national and international legal instruments. Due to the cross-sectoral nature of chemical management the law is fragmented into several pieces of legislation such as the Constitution of Uganda 1995, principle legislation such as National Environment Statute 4/1995, Water Statute 9/1995, Factories Act. Cap 198 and subsidiary legislation made thereunder.

Table B below gives an overview of existing legislation; however, the salient provisions of the law will be discussed in subsequent Sections.

4.3 The National Environment Statute 4/1995

A chemical is defined as a substance in any form whether by itself or in a mixture or preparation whether manufactured or derived from nature and for the purposes of this Statute to include industrial chemicals, pesticides, fertilizers and drugs. The guidelines and measures called for in this Statute to manage chemicals are to include *inter alia*, registration, labelling, packaging, advertising, control of importation and exportation, distribution, storage, transportation, monitoring of effects, disposal, restriction and banning of toxic and hazardous chemicals and materials. The discharge of hazardous chemicals, substances, materials or oil into the environment is prohibited except in accordance with prescribed guidelines.

The ***polluter-pays-principle*** is applied by requiring the polluter to pay the cost of removal by any Government agency or organization or third party, and to mitigate the impact of the discharge according to provisions of S.57(4). The Authority is empowered to seize the production facility, motor vehicle or vessel until mitigation measures are taken.

Any person who fails to manage any chemical in accordance with Section 56 commits an offence and on conviction is liable to imprisonment for a term of not less than 36 months or to a fine of not less than 360,000/=, and not more than 36,000,000/= or both. Part XV of the Statute provides for the international obligations of Uganda. The Minister is empowered

where any convention or treaty has been ratified by Uganda, by Statutory order with approval of Parliament to do the following:

(i) set out provisions of the convention or treaty;
(ii) give the convention or treaty or any part of these the force of law;
(iii) amend any enactment (not the Constitution) so as to give effect to the Convention or treaty; and,
(iv) make any provision to give effect to the convention or treaty or enable Uganda to perform its international obligations.

The Minister is also given power to make regulations on the recommendation of any Minister, the Policy Committee or the Board. Since there are no regulations on the management of toxic and hazardous chemicals and materials, there is need for these to be drafted.

Section 52 makes it a mandatory requirement for the Authority in consultation with the lead agency to identify materials and processes that are dangerous to human health and the environment. In identification, the Authority will:

(i) Establish and maintain a list of all chemicals produced and distributed domestically which information can be obtained from producers, importers, government bodies, research institutes, industry associations, chemical retailers and users, and public interest groups; and,
(ii) Identification of hazard by examining:
- inherent physical and chemical properties such as flammability, explosiveness and reactivity with other chemical-toxicity to human beings, including ability to cause irritation, tissue damage, cancer, genetic changes or birth defects; and,
- impact on the environment including toxicity to animals and plants, persistence, biodegradability, accumulation and chemical reactions.

A duty to manage and minimise wastes so as not to cause ill health to the person or damage to the environment is imposed on all persons generating wastes (S.53). It should be noted that Draft Waste and Hazardous Waste Management Regulations, 1997, have been made under this Section and Section 54 which relate to the management of hazardous wastes.

Section 55 prohibits the importation of the following hazardous wastes:
- extremely hazardous waste;
- corrosive waste;
- carcinogenic waste;
- flammable waste;
- persistent waste;
- toxic waste;
- explosive waste;
- radioactive waste;
- wastes reactive otherwise than as described in the foregoing paragraphs of this subsection;
- any other category of waste the Authority may consider necessary.

Section 56 provides:

(1) The Authority shall, in consultation with the lead agency, establish criteria for the classification of toxic and hazardous chemicals and materials in accordance with their toxicity and the hazards they present to human health and to the environment.

(2) The Authority shall, in consultation with the lead agency, on the basis of the criteria established under Sub-Section (1) issue guidelines and prescribe measures for the management of toxic and hazardous chemicals and materials.

(3) The guidelines issued and the measures prescribed by the Authority under Sub-Section (2) shall include guidelines and measures on -

(a) registration of chemicals and materials;
(b) labeling of chemicals and materials;
(c) packaging for chemicals and materials;
(d) advertising of chemicals and materials;
(e) control of imports and exports of toxic and hazardous chemicals and materials;
(f) distribution, storage, transportation and handling of chemicals and materials;
(g) monitoring of the effect of chemicals and their residue on human health and the environment;
(h) disposal of expired and surplus chemicals and materials;
(i) restricting and banning of extremely toxic and hazardous chemicals and materials.

The Waste and Hazardous Wastes Regulations, 1999 make provision for the disposal of expired and surplus chemicals and materials which have then become wastes. The Statute (Section 57) creates duties on people discharging hazardous substances, chemicals, oils or a mixture containing oil into any waters or other segment of the environment. It creates a criminal offence on the person discharging the material and it creates mitigation duties and measures for accidental discharge and how to handle such accidents.

NEMA is required to prescribe measures for the covering of toxic and hazardous chemicals and materials.

The regulation of oils needs to be provided for in a separate instrument because of their nature in Uganda. The measures which are prescribed under section 57 of the National Environment Statute are not unique to oils.

The management of toxic and hazardous chemicals and materials need a separate set of regulations. S. 82 provides for the protection of proprietary information.

4.4 National Drug Authority, Atomic Energy Board, Uganda Oil Board

National Drug Authority: The National Drug Authority is charged with the implementation of the National Drug Policy.

The other functions are:

- to deal with the development and regulation of the pharmacies and drugs in the country;

- to approve the National List of Essential Drugs and supervise the revisions of the list in a manner provided by the Minister;
- to estimate drug needs to ensure that the needs are met as economically as possible;
- to control the importation, exportation, and sale of pharmaceuticals;
- to control the quality of drugs;
- to promote and control local production of essential drugs;
- to encourage research and development of herbal medicines;
- to promote rational use of drugs through appropriate professional training;
- to establish and revise professional guidelines and disseminate information to health professionals and the public;
- to provide advice and guidance to the Minister and bodies concerned with drugs on the implementation of the National Drug Policy;
- to perform any other function that is connected with the above.

The National Drug Authority is faced with logistical problems, which hinder its performance. The Authority has failed to control the illicit supply of drugs by un-authorised persons such as hawkers and street vendors.

Uganda Oil Board: This Board has not yet started functioning.

4.5 The Pharmacy and Drugs Act 39/1970

This Act prohibits the use of the terms "Pharmacist" and "Pharmacy" by a person not being pharmacist and requires the supervision of a pharmacist where drugs are sold in pharmacies, dispensaries or drug stores.

The Chief Pharmacist is required to cause a list of all pharmacists who are registered to appear in the Gazette and the same should be done for all persons whose names are deleted from the Register. The governing body of the pharmaceutical society is responsible for the conduct of the qualifying examination for membership of the society, maintenance of a register of pharmacists, supervision and regulation of training, maintenance of libraries and research in the subject of pharmacy and chemistry.

The supply of syringes is restricted to registered medical practitioners, dentists, veterinary surgeons, pharmacists or licensed persons except under orders signed by registered medical practitioners or veterinary surgeons.

On the proof of any complaint made against a pharmacist, the Disciplinary Committee may reprimand the Pharmacist, order the payment of a fine to the Board or order the cancellation or suspension of the pharmacist's certificate of registration subject to an appeal by the affected pharmacist to the High Court.

Save for the out-datedness of the fines provided under this Act, the other provisions are apparently in touch with current trends; however, although the provisions of the law are clear as to what should be done, it should be noted that it has not been implemented.
Accordingly un-authorized persons, such as, hawkers and street vendors, supply drugs, yet the list of registered pharmacists is not easily accessible to the public and disciplinary proceedings are rarely taken against those who flaunt the provisions of the law.

4.6 Control of Agricultural Chemicals Statute 8/1989

All agricultural chemicals are to be handled in accordance with regulations made under this Statute. All standards and requirements are to be specified in the regulations. The Statute establishes an Agricultural Chemicals Board consisting of the Commissioner for Agriculture, Head of Agricultural Research, Dean of the Faculty of Agriculture and Forestry, Makerere University, Chairman of Agricultural Chemicals Technical Committee, an advocate, a representative of the chemical industry, a representative of farmers, the Government Chemist, Commissioner for Veterinary Services, Chief Forest Officer, Director of Medical Services, a public officer appointed by the Minister responsible for the environment and another responsible for the National Bureau of Standards.

The Board is charged with ensuring that agricultural chemicals are properly managed through registration, labelling, issuance of licences regulating quality and importation.

4.7 Investment Code Statute 1/1991

This law relates to local and foreign investments in Uganda. Among the functions of the Investment Authority established by this Statute are the promotion, facilitation and supervision of investments in Uganda.

Chemical industries and pharmaceutical industry are listed among the priority areas of investment under the Statute.

An investor may be required to take necessary steps to ensure that the operations of his business enterprise do not cause injury to the ecology or environment. On failure to implement this provision when included as a condition of the investment licence the Uganda Investment Authority may give written notice to the investor and on failure to comply with the notice, the licence is revoked. This not being a mandatory requirement under this Statute may not impress upon the investors the need to ensure that adverse effects do not arise; however, the position is made clear by the provisions of the National Environment Statute. The need to carry out an environmental impact assessment (EIA) in now a condition preliminary to project implementation.

4.8 Uganda Oil Board Statute 2/1994

It is not yet clear whether this Board has properly carried out its functions. It is apparent that the provisions remain on paper.

4.9 Uganda National Bureau of Standards Act 1/1983

The Bureau is further required:

- to formulate national standard specifications for commodities and codes of practice;
- to promote standardisation in commerce, industry, health, safety and social welfare;
- to determine, review, modify or amend standard specifications and codes of practice;
- to endorse or adopt any international or other country's specification with or without any modification as suitable for use in Uganda;

- to require certain products to meet certain standards in their manufacture, or production, composition treatment or performance and to prohibit substandard goods where necessary;
- to enforce standards in protection of the public against harmful ingredients, dangerous components, shoddy materials and poor performance;
- to promote trade among African countries and the world through the harmonisation of standard specifications;
- to provide for the testing of locally manufactured or imported commodities so as to confirm whether the commodities conform to standard specification.
- to make arrangements or provide facilities for the examination, testing or analysis of commodities and any material or substance from which or with which and the manner in which they may be manufactured, produced, processed or treated.

Every person to whom a permit for standards mark has been granted is required to observe the conditions of the permit, failure of which would lead to withdrawal, suspension, revocation or cancellation of the permit by the National Standards Council.

In the event of non-compliance fines ranging from ten thousand (10,000/=) shillings to thirty thousand shillings and/or imprisonment terms ranging from fifteen months to twenty-four months, are imposed.

Any person who makes a representation comparing a standard specification, which has been declared, commits an offence.

As relates to other laws, there exists a problem of enforcement. Much as the Act also covers toxic and hazardous chemicals ("commodity" in the Act means - any article, product, or thing which is or will ultimately be the subject of trade or use), little is done about the manufacture and supply of chemicals, which at times is contrary to established standards.

4.10 National Agricultural Research Organization Statute 19/1992

Under this Statute, the research mandate of the various institutes established is expressly spelt out and research on chemical management in Uganda can only be implied from the general provisions of the Statute.
Kawanda Agricultural Research Institute (KARI) is responsible for research on perennial cash and food crops, farming systems, soils crop protection, plant introduction and quarantine service.

Namulonge Agricultural and Animal Production Research Institute (NAARI) is to undertake research in annual industrial and food crops; crop/livestock management systems and pasture. Serere Agricultural and Animal Production Research Institute (SAARI) is responsible for cereals, root crops, legumes and oil seeds for semi-arid areas; semi-arid production system; seed research and production, pastures, range management and livestock management systems.

The Forestry Research Institute (FORI) deals with research on natural forests, plantation forests, forest products and utilisation and agro forestry. The Livestock Health Research Institute Tororo (LIRI) is responsible for research on animal health, animal breeding and theruigenology and animal diseases. The Fisheries Research Institute Jinja (FIRI) is to

undertake research in freshwater fisheries, fish technology, aquaculture and fish production systems.

Food Science and Technology Research Institute (FOSRI) is to deal with research on food preservation, processing, storage, marketing and dietetics.

Agricultural Engineering and Appropriate Technology Research Institute is to deal with research on farm mechanisation, crop processing and storage, soil and water engineering.

4.11 Petroleum (Exploration and Production) Act 7/85

The Act prohibits the exploration or development operations on petroleum without a licence. It is necessary for one to apply for a petroleum production licence which application should be accompanied by a report on the petroleum reservoir, among other things, which contains particulars of chemical composition, physical properties, petrophysical properties, geological data, particulars of production, equipment and storage facilities, transportation safety measures, necessary measures to be taken for the protection of the environment among other factors.

Obligations and duties are imposed on the licensee to ensure control of flow or prevent escape of any mixture of water or drilling fluid and petroleum, prevent pollution and where it occurs to disperse it in an environmentally acceptable manner. Since petroleum exploration in Uganda, has not been actively pursued it is not easy to determine how practicable this Act is in terms of management of petro-chemicals.

4.12 Employment Decree 4/1975

The employment of young persons in any sector, which is injurious to health, dangerous or unsuitable, is prohibited.

The Decree does not, however, go further to establish exactly what constitutes unsuitable employment. There is a requirement for medical examination before contracting an employee for any of the employment specified in the schedule in the Decree. It should be noted that most of the employment scheduled relates to hazardous and toxic chemicals, for example, Taxidermy and hide processing, textile dying and bleaching, pesticide work, fertilizer manufacturing, ore extraction, clothes dry-cleaning, among others.

As to how many employers ensure that the medical examination is provided, remains a difficult question to answer. There seems to be a problem of non-compliance with the provisions of the law.

4.13 National Drug Policy and Authority Statute 13/1993

Part III provides for control of drug supply. The importation or sale of drugs not appearing on the National Formulary is prohibited. Drugs specified in Schedules 1, 2 and 3 are classified drugs, those in Schedule 4 are exempted drugs, while those not classified or exempted are restricted drugs. Provision is made for people who can supply and dispense of restricted drugs (S.14).

The supply or dispensing of restricted drugs shall be in distinctly labelled containers, and the particulars are required to be entered into the Prescription Book. Restricted drugs can only be supplied from premises which have been issued certificates and licensed to deal in drugs.

In case of classified drugs, there is need for prescription and supply should only be by responsible persons and entries of the supply shall be made in the Classified Drugs Book. Impure drugs should not be supplied.

The manufacture and storage of drugs is also restricted, there being restriction on the manufacture or preparation of drugs not included on the National Formulary, and the requirement for their manufacture to be by a pharmacist or under his/her supervision. Classified drugs [Class B and Class C [Group II)] are to be kept under lock and key separately from other drugs.

4.14 National Medical Stores Statute 12/93

This Statute establishes a corporation, namely, National Medical Stores, which is to ensure the security, safety and efficient storage, administration, distribution and supply of medicines and medical supplies among other functions. The Corporation is to advise the National Drug Authority on estimation of drug needs, distribution and use of medicines in the public health service.

4.15 The Water Statute 9/1995

A Water Policy Committee is established with the several functions, some of which are as below:

- to co-ordinate the preparation, implementation and amendment of the Water Action Plan and recommend the same to the Minister to advise the Minister at his/her request, on issues of policy relevant to investigations, use, control, protection, management or administration of water sources;

- whether on request or otherwise, to review the law relating to water and advise the Minister on required amendments or better administration of that law.

The Minister is empowered to prescribe water which may not be discharged, trades which may not discharge waste or classes of premises or particular premises from which waste may not be discharged except in accordance with a waste discharge permit.

Pollution of water is prohibited unless authorised under the Statute. The Minister is empowered to make regulations.

The Water Statute does not adequately cater for the management of toxic and hazardous chemicals and materials. More emphasis is placed on waste discharge, which is already adequately provided for by the National Environment Statute, and the regulations on the management of waste and hazardous wastes.

4.16 Workmen's Compensation Act Cap. 197 as amended by Act 5/1969

The employer is required to defray the reasonable expenses incurred by a workman as a result of the accident, which would entitle the workman to compensation, where a workman suffers disablement or death as a result of a scheduled disease then compensation is required to be paid.

The Third Schedule comprises a description of disease and the nature of occupation likely to bring it about. Considering the fact that this Act was enacted in 1949, there is need to up-date it in light of the given scientific advancements, which have led to new revelations into occupational diseases. This will help in determining how toxic and hazardous chemicals should be managed so as to prevent or reduce risks of occupational diseases.

4.17 Factories Act Cap 198

The interpretation of a factory is so broad as to mean any premises, in which persons are employed in manual labour in any process for or incidental to the making of any article, or of part of any article, altering, repairing, ornamenting, finishing, cleaning or washing, breaking up or demolition of any article or adapting for sale of any article.

There is a requirement for registration of factories by the Chief Inspector, after a notice of occupation of the factory has been served by the Chief Inspector. Vessels containing dangerous liquids likely to scald, corrode or poison, are required to be securely covered or securely fenced and a warning notice be placed so as to prevent accidents. Where dangerous fumes are liable to be present, then adequate means of egress are to be provided and no person is to be allowed to enter unless the safety precautions laid down are complied with. Similar provisions are made with regard to explosive or inflammable dust, gas, vapour or other substances.

There is a mandatory requirement for prevention of fire and safety provisions in the case of fire. The Minister is empowered to require medical supervision in cases of illness or where there may be a risk of injury to employees.

An inspector is empowered to take samples for analysis. The administration of this Act is vested in the Labour Commissioner. The Act establishes a Factories Advisory Board for the purpose of giving advice and assistance in regard to matters affecting safety, health and welfare in factories. Despite the clear provisions of this Act, a problem of enforcement still remains. The law is also out-moded, and has to be brought in line with current legislation, for example, the National Environment Statute, most especially with regard to standard management of chemicals, wastes, among others. In addition, although chemicals are mentioned, none is listed which makes it rather difficult for implementing officers to determine what is dangerous in light of the provisions of this Act.

4.18 Petroleum Act Cap 97

Petroleum can only be imported, unloaded, landed, loaded, trans-shipped or transported by other means, or kept, in accordance with the provisions of rules made under this Act. The Minister is empowered to make rules:

(i). defining, classifying or categorising the kind of petroleum to which the rules shall apply;

(ii). prohibiting or regulating the use of petroleum;
(iii). restricting and regulating the importation, landing, loading, shipping, transportation, storage of petroleum, and prescribing a system of licensing.
(iv). providing for notice to be given by type of ownership or importer;
(v). sampling of petroleum landed;
(vi). providing licensing of premises;
(vii). regulating the description and construction of vehicles to be used in the conveyance of petroleum;
(viii). prohibiting or restricting the carriage of goods and passengers in vehicles carrying petroleum;
(ix). prescribing quantities to be conveyed;
(x). prescribing precautions to be observed in the conveyance, the manner of packing and mode and time of transit; and,
(xi). prescribing apparatus for testing appointing officers for testing, fixing fees and provision and providing for inquiries into the circumstances of accidents and giving notice of all such accidents.

Contravention of rules in respect of storage, conditions of licence, transportation, shipment, and notice of port authorities, are provided for. It should be noted that no regulations were drafted under this Act, which has rendered it unoperational.

4.19 Phosphorous Matches Act Cap. 98

Any person who manufactures, imports or sells white (yellow) phosphorous matches commits an offence on conviction, shall be liable to a fine not exceeding two thousand shillings or in default of payment to imprisonment for a period not exceeding six months, and the matches or materials shall be forfeited.

No subsidiary legislation was drafted under this Act.

4.20 Public Health Act Cap. 269

No person is allowed to cause a nuisance according to the provisions of Part IX. As to what constitutes a nuisance, among others listed, is any factory or trade premises not ventilated so as to destroy or render harmless and inoffensive any gases, vapours, dust or other impurities, or so over-crowded as to be injurious or dangerous to the health of those employed therein. Among the matter not to be deposited in sewers or drains are chemical refuse, petroleum spirit, and carbide of calcium. Contravention of this provision attracts a fine not exceeding two hundred shillings and to a further fine not exceeding one hundred shillings for each day on which the offence continues after conviction.

Local authorities have a duty to take all lawful, necessary and reasonably practicable measures to prevent pollution of water supplies and food. This Act lays emphasis on the prevention and suppression of infectious diseases and epidemic or endemic diseases. It does not make indication as to how the chemical refuse and related matter can be appropriately managed so as to protect public health. This Act only lists petroleum spirit and calcium carbide as chemicals, but does not list what constitutes chemical refuse. In addition the Act does not prohibit the contamination of sewers and drains with chemicals.

4.21 Food and Drugs Act Cap. 271

The preparation and sale of injurious food and adulterated drugs is prohibited. The same should not be offered, exposed or advertised for sale, and any person found in possession of them commits an offence.

The absence of fraud, lack of knowledge and exercise of reasonable diligence are defences. The other offences provided for under this Act are:

(i) false labelling or advertisement of food or drug;
(ii) sale or preparation of sale or possession, for purpose of sale of food unfit for human consumption;
(iii) preparation or manufacture or storage of ice cream, sausages, potted, pressed, pickled or preserved food, intended for sale without registration;
(iv) sale of milk from diseased cows (suffering from tuberculosis, acute mastitis, actinomycosis, suppuration, comatose or anthrax). All animals intended for slaughter are to be examined by a registered veterinary surgeon.

Powers of inspection, taking samples and seizure are vested in the authorised officers. The Act provides for the establishment of a Food Hygiene Advisory Committee, which may advise the Minister.

The Minister is *inter alia* empowered to make regulations regulating the addition of any specified substance to food intended for sale and under Food and Drugs (Prohibition of the Use of Cyclamate) Regulation SI 165/1971 and Food and Drugs (Prohibition of the Use of Violet No. 1) Regulation SI 241 1974. The use of cyclamate and violet No. 1 was prohibited.

The Minister has not made most of the regulations he is empowered to make under the Act and as such the provisions have not been easy to enforce. Another problem has been with poor law enforcement, with emphasis being made only to cater for a few items, for example, meat supplies/handling.

With the given increase in local investment, many food producers have come into the market and since there is insufficient manpower, inspections are not adequately carried out (limited inspection average). The lack of well-trained technical staff is a persistent problem affecting law enforcement.

4.22 Explosives Act Cap 309

This Act restricts the manufacture of unauthorised explosives solely for the purposes of chemical experiments and practical trials. The manufacture of authorised explosive is restricted to explosives factories.

The Act further delimits the storage or possession of unauthorised explosives and restricts the storage of authorised explosives; save for the manufacturers, any other person who seeks to deal in explosives including importation, exploration and use, requires a permit.

Before a licence can be granted to the manufacturer, the application should specify the situation and extent of area, materials to be used, the nature of the manufacturing process, the quantity of explosives and the proposed maximum number of persons to be employed. It

should be noted that there is no requirement for the manufacturer to state exactly what measures are in place to deal with accidents, how the workers will be protected from exposure to hazardous and toxic chemicals, and how by-products will be handled.

Provision is made for local authorities or any person who can show a substantial interest in opposing the grant of a licence to do so. Inspectors may enter and inspect the factories at any time. The Act imposes on every occupier of a factory the duty to make special rules for regulating employees so as to ensure safety.

The penalties provided for are as minimal as they are unrealistic because they range from fines of one thousand shillings (1,000/-) to ten thousand shillings (10,000/-).

Although the Minister is empowered to make regulations, none have been made under this Act. In brief , the implementation of this Act is very limited in that, compliance with its provisions is left to occupiers and there are no substantial guidelines and standards which can be followed.

4.23 Roads Act Cap 345

This Act provides basically for the establishment of road reserves and for the maintenance of roads. It does not in any way regulate the transportation of toxic and hazardous chemicals in Uganda.

4.24 Specified Goods (Conveyance) Act Cap. 344

This Act provides for the control of the means of conveyance of certain goods to and from Sudan, the Democratic Republic of Congo, and Rwanda.

Petroleum products and lubricants are listed among the goods for which routes for conveyance in or out of Uganda, are to be prescribed by Statutory instrument.

Other toxic and hazardous chemicals have not been listed in the Schedule, which leaves the transporters freedom to utilise any route, thus, exposing the environment to more danger.

4.25 Inland Water Transport (Control) Act Cap 348

This Act requires any person interested in conveying goods by means of a ship on inland waters of Uganda, to apply for a licence.

The Board is empowered to attach to any licence the condition that certain classes or descriptions of goods shall or shall not be carried or any other conditions deemed necessary, in public interest.

Whether the transportation of toxic and hazardous chemicals on inland waters should be regulated under this law, is another question. What about the over-land transportation of toxic and hazardous chemicals?

4.26 The Ratification of Treaties Act 5/1998

Where a treaty relates to armistice, neutrality or peace or in a case of a treaty, in respect of which the Attorney General has certified in writing that its implementation in Uganda, would require a Constitutional amendment and then Parliament by resolution shall ratify it. All other treaties are to be ratified by the Cabinet. The instrument of ratification of a treaty shall be signed, sealed and deposited by the Minister responsible for Foreign Affairs who will also be the depository in Uganda of all treaties.

There is a requirement for all treaties ratified by the Cabinet to be laid before Parliament in the shortest time possible. The Minister responsible for foreign affairs is empowered in consultation with the Attorney General by Statutory instrument to make rules.

Since there are several international instruments relating to the management of toxic and hazardous chemicals and materials, there is a need for reference to be made to this Act when making recommendations relating to the need to ratify these treaties.

REVIEW OF NON-REGULATORY MECHANISMS

Not all important aspects of chemicals management are covered by legal instruments. There are a number non-regulatory mechanisms that apply to the management of chemicals. These mechanisms when chosen and applied carefully, can lead to a reduction on the need for and costs of enforcement, and the introduction of environmentally sound chemicals, technology and related processes. These mechanisms can be in the form of economic incentives or voluntary agreements.

Positive economic incentives include:

- reduced taxes or customs duty on the purchase of clean equipment or re-modelling a facility for cleaner production;
- award of bonuses for environmentally sound management of chemicals;
- deposit-refund systems in which money is returned when pollution is avoided;
- protection from competition for a certain period of time if a new chemical is notified properly;
- transfer from government to industry of certain technology developed in the public sector;
- provision of subsidies for the development and use of technology that prevents pollution by reducing the source of harmful contaminants.

Negative economic incentives include:

- charges or taxes for using or emitting certain harmful chemicals;
- government levies on certain products to fund research;
- creation of a “pollution-added tax” similar to the value added tax;
- security bonds for enterprises that handle chemicals.

As regards voluntary agreements, governments can enter into agreements with industries and facilities to control emissions of chemicals. Under these agreements, companies can carry out environmental audits to check compliance with legal requirements and can also in conjunction with others in the industry take steps to regulate themselves by establishing a

code of ethics. The introduction of product stewardship, which involves companies incorporating management principles of risk assessment, risk communication and risk reduction can also assist in the management of chemicals.

The adoption of voluntary international guidelines and codes of conduct relating to chemical management is another non-regulatory mechanism.

TABLE 4A

Legal Instrument	Objective of Legislation	Chemical Use Categories Covered	Responsible Ministries or Bodies	Sections Which Address	Enforcement Ranking
National Drug Policy and Authority Statute 13/1993	- To establish a national drug policy and a national drug authority to ensure the availability of drugs so as to safeguard the appropriate use of drugs among others. The national drug policy is: to ensure that essential drugs are made available; to promote rational use of drugs; to improve government regulation and control on manufacture, production, importation, exportation, marketing and use of drugs; to fight against drug and substance abuse.	Pharmaceuticals including: narcotics; controlled drugs; licensed drugs exempted drugs.	- National Drug Authority - Minister responsible for Health.	Ss. 3,6,9,13 12.21,39-50	Fair
Control of Agricultural Chemicals Statute 8/1989	- To control and manufacture, storage, regulate the trade in use importation, exportation and distribution of agricultural chemicals through labelling, advertising, classification and licensing.	Agro-chemicals like pesticides, herbicides, chemical fungicides, insecticides, nematodes, acaricides, bactericides, rodenticide, molluscides, avicides, fertilizers, growth regulators.	- Ministry of Agriculture. - Agricultural Chemicals Board.		Fairly good

Legal Instrument	Objective of Legislation	Chemical Use Categories Covered	Responsible Ministries or Bodies	Sections Which Address	Enforcement Ranking
National Environment Statute 4/1995	- Establishment of guidelines for management measures and classification of toxic and hazardous chemicals and materials.	- Industrial chemicals, pesticides, fertilizers, drugs, toxic and hazardous chemicals and materials.	- NEMA - Ministry of Land, Water and Environment	2,3,15,20,56,57, 68-72,103.	Poor
The Ratification of Treaties Act 5/1998	- Provides for the procedure for ratification of treaties in accordance with Article 123 of the Constitution.	All	- Attorney General - Parliament - Cabinet - Minister responsible for Foreign Affairs.		Fair
The Water Statute 9/1995	- To provide for the use, protection and management of water resources and supply.	All	- Ministry of Water, Land and Environment.		Fair
Workmen's Compensation Act Cap. 197 as amended by Act 5/1969	- Provides for the employer's liability for compensation for death or incapacity resulting from accident.	Industrial chemicals	- Labour Commissioner.		Poor
Uganda National Council for Science and Technology Statute 1/1990	- To establish a National Council for Science and Technology.	All	- Ministry of Finance, Planning and Economic Development.		Fair

Legal Instrument	Objective of Legislation	Chemical Use Categories Covered	Responsible Ministries or Bodies	Sections Which Address	Enforcement Ranking
Factories Act Cap 198	- Provides for the health, safety and welfare of persons employed in factories and other places. - Lays down general provisions on health relating to cleanliness, overcrowding, ventilation, lighting, drainage of floors and sanitary conveniences.	Industrial chemicals, Chemical by-products such as air emissions.	- Labour Commissioner - NEMA - Factories Inspectorate in Ministry of Tourism, Trade and Industry.		Poor
Petroleum Act Cap 97	- Makes provision for restricting and regulating the import, transport and storage of petroleum which includes any inflammable liquid made from petroleum, coal, schist, shale, peat or any bituminous substance or from any product of petroleum.	Petroleum products	Ministry of Energy and Mineral Development		Poor
Phosphorous Matches Act Cap. 98	- Prohibits the manufacture, importation and sale of white phosphorous matches.	Phosphorous matches and associated material	Ministry of Internal Affairs Ministry of trade and Industry		Poor

Legal Instrument	Objective of Legislation	Chemical Use Categories Covered	Responsible Ministries or Bodies	Sections Which Address	Enforcement Ranking
Atomic Energy Decree 12/1972	- To establish an atomic energy control board. - to make provision for the control of atomic energy and radio-active materials and protection of the public from dangers arising from the use of materials capable of producing ionising radiation.	Radioactive materials.	- Atomic Energy Control Board.		Poor
Public Health Act Cap. 269	- Aims at preservation of public health.	All chemical refuse, gases, vapours, petroleum spirit and calcium carbide.	- Local authorities - Advisory Board of Health - Ministry of Health		Poor
Food and Drugs Act Cap. 271	- Makes provision for the prevention of adulteration of food and drugs and matters incidental thereto.	Food additives, drugs.	- Ministry of Health - Food Hygiene Advisory Committee - Uganda National Bureau of Standards - Local Authorities.		Fair

Legal Instrument	Objective of Legislation	Chemical Use Categories Covered	Responsible Ministries or Bodies	Sections Which Address	Enforcement Ranking
Explosives Act Cap 309	Relates to the manufacture, storage, sale, transport, importation, exportation and use of explosives.	Gunpowder, nitro-glycerine, dynamite, gun-cotton, blasting powders, fulminate of mercury.	Ministry of Defence		Good
Roads Act Cap 345	Provides for the establishment of road reserves and for the maintenance of roads.	None	Ministry of Works, Transport and Communication.		Poor
Specified Goods (Conveyance) Act Cap 344.	Provides for the control of the means of conveyance of certain goods to and from the Republic of Sudan, Congo and Rwanda	Petroleum products and lubricants excluding high-octane aviation spirit.	Ministry of Works, Transport and Communication.		Poor
Rivers Act Cap 347	Regulates dredging in rivers and the use of steam vessels on rivers.	None	Ministry of Water, Lands and Environment.		Poor
Inland Water Transport (Control) Act Cap 348	Restricts and controls the carriage of goods and passengers by water within Uganda.	All	Ministry of Works, Transport and Communications.		Poor

Legal Instrument	Objective of Legislation	Chemical Use Categories Covered	Responsible Ministries or Bodies	Sections Which Address	Enforcement Ranking
The Waste and Hazardous Waste Management Regulations, 2000	- To regulate the management of wastes and hazardous wastes including: sorting, disposing, internal movement, transportation, packaging, labelling, trans-boundary movement, notification procedures, environmental impact assessment.	All wastes and hazardous wastes.	NEMA, Uganda Revenue Authority, District Environment Officers, Local Authorities.		Poor

International Instruments	Objectives of Instrument	Relevant National Activities	Primary National Responsible Agency	Chemical Use/ Categories Covered
London Guidelines for the Exchange of Information on Chemicals in International Trade 1987 (as amended in 1989) (voluntary)	- Intend to increase chemical safety through the exchange of information on chemicals in international trade.	No national activity. NEMA intends to establish contacts with industry and private sector.	NEMA	All chemicals excluding pharmaceutical including narcotics, drugs and psychotropic substances.
Convention on the Prohibition of the Development, production, stockpiling and use of Chemical Weapons and on their Destruction 1994.	Ban development, production and use of chemical warfare agents and precursors	Uganda to become a party.	Ministry of Defence Ministry of Gender, Labour and Social Welfare	Chemical weapons.
Agenda 21	- To promote and ensure environmentally sound management of toxic chemicals including prevention of illegal international traffic in toxic and dangerous products.	- Enactment of National Environment Statute.	NEMA	All
Declaration of the United Nations on the Human Environment Stockholm, 1972 (voluntary)	- To prevent or discharge of toxic substances into the environment.	As above	NEMA	All
World Charter for Nature 1982	- To avoid discharge of pollutants into natural systems.	As above	NEMA All Lead Agencies	

International Instruments	Objectives of Instrument	Relevant National Activities	Primary National Responsible Agency	Chemical Use/ Categories Covered
Convention concerning Prevention and Control of occupational hazards caused by carcinogenic substances and Agents.	- To protect workers against hazards arising from occupational exposure to carcinogenic substances and agents.	Awareness raising New legislation on the Workman's Compensation Act	Ministry of Gender, Labour and Social Welfare	Carcinogenic substances agents.
Convention concerning the protection of Workers against occupational hazards in the working environment due to air pollution, noise and vibration.	- To protect workers against occupational hazards in the working environment.	As above	As above	All vapours, dusts.
Convention concerning Occupational Safety and Health and the Working Environment.	- Preventing accidents and injury to health by minimising the causes of hazards inherent in the working environment.	As above	As above	All
Convention concerning Occupational Health Services.	- Aims at establishing and maintaining a safe and healthy working environment and the adoption of work to the capacity of workers in light of their state of physical and mental health.	As above	As above	All

International Instruments	Objectives of Instrument	Relevant National Activities	Primary National Responsible Agency	Chemical Use/ Categories Covered
Convention concerning safety in the use of chemicals as at work.	- To ensure the enhancement of the existing legal framework for occupational safety by regulating the management of chemicals in the work place with the broad purpose of protecting the environment and public with the specific objective of protecting workers from harmful effects of chemicals.	As above	As above	All
Convention concerning the use of White Lead in Painting.	- To protect workers from exposure to white lead and lead sulphate and of all products containing these pigments. It became operational on 31st August, 1923.	As above	Ministry of Labour, Trade Unions. Relevant National activity - enactment of Factories Act Employment Decree establishment of occupational Health Department in Ministry of Labour.	White lead and lead sulphate.
Convention concerning the Protection of Workers against ionizing radiations.	- To protect workers as regards their health and safety against ionising radiations.	As above		Ionising radiation materials

International Instruments	Objectives of Instrument	Relevant National Activities	Primary National Responsible Agency	Chemical Use/ Categories Covered
Convention concerning protection against hazards of poisoning arising from benzene.	- Aims at protecting workers from hazards arising from the production, handling or use of aromatic hydrocarbon benzene.	Aromatic hydrocarbon benenze.	Ministry of Gender, Labour and Social Welfare, Trade Unions.	Aromatic hydrocarbon benzene

Legal Instrument	Objective of Instrument	Primary National Responsible Agency	Relevant National Activity	Chemical Use/ Categories Covered
Convention on the Prior Informed Consent procedure for certain hazardous chemicals and pesticides in international trade.	- To promote shared responsibility and cooperative efforts among parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm. - To contribute to their environmentally sound use by facilitating information exchange about their characteristics by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.	NEMA Ministry of Agriculture, Animal Industry & Fisheries	Interim prior informed consent procedure being implemented on a voluntary basis, in preparation to accede to the Convention	Pesticides and industrial chemicals.

Legal Instrument	Objective of Instrument	Primary National Responsible Agency	Relevant National Activity	Chemical Use/ Categories Covered
Code of Ethics on the International trade in Chemicals (voluntary) 1994	Sets forth principles and guidance for private sector parties, governing standards of conduct in the production and management of chemicals in international trade with the purpose of reducing risks to human health and the environment.	- NEMA - Uganda Manufacturers Association.		All chemicals except: - Pharmaceuticals including narcotics, drugs and psychotropic substances; - Radioactive materials; - Chemicals imported for the purpose of research on analysis in quantities not likely to affect the environment or human health; - chemicals imported as personal or household effects in reasonable quantities; - Food addictive.

Legal Instrument	Objective of Instrument	Primary National Responsible Agency	Relevant National Activity	Chemical Use/ Categories Covered
Vienna Convention for the Protection of the Ozone Layer (1985)	- To raise international cooperation in protecting the ozone layer from depletion.	NEMA	Regulations on phase out of ozone depleting substances developed and awareness raising being undertaken	All chemical substances thought to have the potential to modify the chemical and physical properties of the ozone layer. (Listed in Annex I).
Montreal Protocol on substances that deplete the ozone layer (1987)	- To provide in detail for the technical issues relating to ozone depleting substances.	NEMA	Regulations have been drafted under National Environment Statute.	All chemical substance thought to have potential to modify the chemical and physical properties of the ozone layer.
Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their disposal.	- To provide for proper management of hazardous wastes and other wastes including their trans-boundary movement and disposal.	NEMA	Regulations have been drafted under the National Environment Statute. Training of stakeholders on going	Hazardous wastes contained in the Annexures to the Convention.

COMMENTS AND ANALYSIS

It is clear from above that there is no single comprehensive legislation on chemicals. Currently it is NEMA that handles all issues relating to chemicals except the agro chemicals that are managed by the Agricultural Chemicals Board on which NEMA is represented.

Because of the fragmented nature of the chemicals legislation, enforcement has generally been a problem. Among the factors that have been identified have been financial constraints, lack of appropriate monitoring tools and equipment, an ill-motivated law

enforcement personnel, inadequate penalty provisions and lack of institutional co-operation in some aspects.

Non-regulatory instruments and mechanisms as instruments are of a fairly recent and therefore are yet to take hold. The need for massive education is paramount and the thrust of educational awareness programmes should be directed at alerting the large illiterate population to the dangers posed by misuse of chemicals. Industry should be encouraged to adopt self regulatory programmes and approaches to minimise the risks entailed in the use of chemicals while government must be convinced that no-regulatory schemes can be as effective as the threat of legal sanctions in the management of chemicals. This will provide the framework for the successful implementation of policies put in place to properly manage chemicals.

In the long run, a comprehensive legislation covering all chemicals is envisaged. Presently the regulation on pesticides is considered adequate and incorporates all the international techniques for the management of pesticides. Management of industrial and other chemicals is still wanting and needs to be addressed.

CHAPTER 5: MINISTRIES, AGENCIES & OTHER INSTITUTIONS MANAGING CHEMICALS

This chapter attempts to describe and analyse the mandates and programmes of different ministries, agencies and other governmental institutions responsible for, and concerned with, various aspects of chemical management.

5.1 Ministry of Agriculture Animal Industry and Fisheries

The Ministry of Agriculture, Animal, Industry and Fisheries mainly controls the use of pesticides in Uganda. In the management of agricultural chemicals, the Ministry's Central roles include development of relevant policies, guidelines, standards and provision of technical support supervision and resource mobilisation for the districts. The local authorities are to implement activities at the local and community levels.

On the ground, herbicides are now commonly used on large plantations of tea, sugarcane, coffee and bananas. The common ones widely used against broad-leaved weeds are 2-4-D, 2-4-5-T as well as Gramoxone. In sugar estates Dalanpon and Atrazine are used in addition to Gramoxone. Seed dressing prior to planting is also practiced widely in Uganda. Kidney beans, groundnuts, wheat and cottonseeds are dressed to protect them from against attacks by fungi and insects. There is a significant use of pesticides for the preservation of wood and a wide variety of pesticides are used in different activities in the forestry sectors. Pesticides are also widely used in horticulture. Pyrethrum is most widely used against foliage pests while Dothan (a dithiocarbamate) is used against fungal damage. The organophosphates (Dursban, Sumithion) are used against any leaf-eating insect on any crop.

5.2 Agrochemicals Control Board

This is a government agency responsible for controlling the use of agricultural chemicals in Uganda mainly for phyto-sanitary plant/ crop protection purposes. This body regulates the following categories of chemicals: Herbicides; Pesticides (e.g. Rodenticides, Insecticides, Fumigants); Fungicides; Fertilizers; Insecticides; Plant Growth regulators;
Seed Treatment chemicals; Biopesticides; Chemicals for wood industry (petroleum and wood treatment);Vector control – the Board also handles chemicals for the control of epidemic pests and diseases.

All these chemicals are evaluated for safety, efficacy and suitability before being registered. The Government analytical laboratory and other agricultural research Laboratories are utilised for this exercise. These laboratories are however poorly equipped. The Agricultural Chemicals Board also gives permits to suitable and approved importers of agro-chemicals. This ensures that only recommended products are brought into the country. The Board maintains a statistical database of these chemicals is minimized through:

- Training of staff and farmers in safe use of agro-chemicals;
- Use of protective wear;
- Safe storage including clear warning signs to the public;
- Training of store attendants on safety measures during handling, storage, use and disposal of chemicals;

- Farmers and other users are instructed to read the label and following instruction for correct use;
- Field staff regularly hold technical backup workshops in the districts on top of the technical support supervision;
- More information dissemination to users and the general public thru use of radio spots/ jingles, posters and guidelines;
- Regular monitoring and inspection visits are carried out to get feedback on use, ill effects, and quality of chemicals on the market;

5.3 National Agricultural Research Organisation (NARO)

NARO is responsible for all agricultural research in the country. The research mandate of the various institutes established is expressly spelt out and research on chemical management in Uganda can only be implied from the general provisions of the respective Statute

5.4 Namulonge Agricultural and Animal Production Research Institute (NAARI)

Namulonge Agricultural and Animal Production Research Institute (NAARI) is to undertake research in annual industrial and food crops; crop/livestock management systems and pasture.

5.5 Fisheries Research Institute (FIRRI)

The Fisheries Research Institute Jinja (FIRI) is to undertake research in freshwater fisheries, fish technology, aquaculture and fish production systems.

5.6 Ministry of Health

Responsible for health care management and policy at the national level.

5.7 The National Drug Authority

This is a government agency whose role is to ensure that the entire population of Uganda has access to safe, good quality and cost – effective pharmaceutical products. The National Drug Policy and Statute, 1993, mandate it to carry out this function. These functions include:

- Control of the importation/exportation of pharmaceutical products;
- Licensing of all pharmaceutical outlets in the country;
- Regulation of veterinary drugs and chemicals e.g. Acaricides;
- Regulation of chemicals for public health use such as, insecticides; rodenticides; fumigants and disinfectants.

It has managed to control the important and distribution of pharmaceutical products in the country, however it is not easy to track down some drug traffickers. A number of chemicals that are useful but dangerous to the public are misused. Chemicals for public health use and cosmetics particularly are not yet effectively managed.

5.8 The National Medical Stores (NMS)

The National Medical Stores (NMS) was established by act of Statute. NMS imports about 90% of all the drugs it handles. 10% is procured within the country. NMS handles over 350 human pharmaceutical products including chemicals for public health use and over 100 laboratory chemicals. Its responsibility starts at the ports of entry in case of imported drugs. Drugs are then distributed to the district and that is where the
responsibility of NMS stops

NMS has a computerised tracking system on expiry of drugs that might occur in its stores to ensure that expired drugs or those with short shelf lives are not supplied to districts or consumers. In case of expired drugs occurring in the district, their management is the responsibility of the district authorities.

Safety procedures in place include: a team of well-qualified staff at all levels; safety manuals for the workers and a well-established storage system. Segregated storage is applied for the different categories of chemicals it handles that includes, inflammables; tables and gloves; injectable drugs; corrosives; narcotics that are handled inline with the Vienna Convection on Narcotics; reject stores; cold rooms for vaccines and explosives. Expired drugs are destroyed on contract basis using a privately run incinerator.

5.9 Uganda Virus Research Institute (UVRI)

UVRI was visited as an example of an analytical research institute. The Institute uses chemicals and reagents for purpose of diagnosis and research. Categories of chemicals include reagents, disinfectants, culture media, drugs and radioactive materials. Most chemicals are imported from well-established companies as finished products, however some are reconstituted at source. These companies provide UVRI with detailed descriptions and updates as a way of ensuring quality of chemicals delivered. All chemical consignments are accompanied by licenses from the countries of origin.
UVRI also asks for a certificate of compliance.

In addition to other reagents, UVRI uses radioscopic material. The Institute applies for permission from the Ministry of Energy and Mineral Development. The Radiation safety Officer issues permits to competent users. The Department regulates the importation, use, storage and disposal of radioactive materials in Uganda. The radiation safety officer also advises workers on safety procedures, storage and disposal methods.

Protection procedures applied by UVRI include:

- Guidelines on Good Laboratory Practice;
- In-house training of laboratory staff use of chemicals;
- There is an established management committee that oversees implementation of good laboratory practice;
- There is also a Bio-safety Committee headed by a laboratory Safety Officer;
- All imported chemicals must have a certificate from the country of origin and a certificate of competence from the manufacturers;
- Storage systems and a cold chain maintenance system in place and functional;
- UVRI owns and operates an incinerator for disposal of chemical waste. The incinerator ash is buried in a well-constructed disposal pit;
- Safety Officers from other collaborating national and international research institutions also give safety advice to UVRI. International Research Institutions like the British Medical Council (UK), the Centre for Disease Control (USA) ensures that UVRI operations conform to internationally acceptable safety standards for research laboratories;
- UVRI operates specific stores and laboratory for radioactive chemicals.

5.10 Ministry of Lands, Water and Environment

The mandate of the Ministry is to promote and ensure the rational and sustainable utilization and development and safeguard of land and water resources and the environment for social and economic welfare and development as well as for regional and international peace. In Addition, the Ministry promotes the utilization of weather and climatic information for sustainable development.

5.11 Ministry of Finance and Economic Development

The mandate of this ministry is to manage and control public finances in a prudent and sustainable manner; to ensure efficiency and effectiveness of all public spending, and to oversee the planning of national strategic development initiatives in order to facilitate economic growth, efficiency, stability, eradication of poverty and enhancement of overall development.

5.12 Ministry of Education and Sports

This is a government ministry responsible for all types of formal education, and therefore, naturally, its role in the management of chemicals is related to teaching the subject of chemistry at levels ranging from secondary school through postgraduate training.

The sheer number of secondary schools there are in the country teaching chemistry indicates that substantial amounts of chemicals are utilized. However, the types of chemicals used at this level are not diverse and are easy to identify because they are restricted to what the syllabuses stipulate. Further, in general there are not many toxic chemicals used.

Much as there are not many types of chemicals used at the secondary level, it is very important that the students are given proper training regarding their use and disposal. This can form a strong base for their future work with chemicals.

At the University level, there are many types of chemicals for both teaching and research. Their management therefore, deserves a lot of attention because many of them are toxic. The effective way of managing chemicals at the University is to form Departmental/Faculty/University chemicals management committees.

One serious problem discovered during a visit to Makerere University, the leading University in Uganda was that there were, no institutionally organized chemicals management committees, and yet the quantities and variety of chemicals used at this University surpass those of all other universities combined. Some recommendations for the proper management of chemicals at the University level in view of the many types of chemicals stocked there are in respect of:

- Establishment of a dedicated faculty or university incinerator;
- Establishment of cold rooms for storage of volatile or easily decomposable chemicals at ambient temperature;
- Researchers should always avail to Heads of Department information about speciality chemicals used in their research work;
- Purchasing certified chemicals with safety management manuals/MSDS's.
- Establishing a Chemical Incidental (Safety) Unit in respect of:
    - Possessing antidotes.
    - Disaster preparedness.
    - Possessing first aid equipment.

- Having adequate information on nature of chemicals.

What has been said of the Universities in view of the above recommendations, should also apply to other research and analytical laboratories under the ministry of Education.

5.13 Ministry of Internal Affairs

Under the Ministry of Internal affairs are the Government Chemist Laboratories that provide support services for forensic analysis. Other department under this ministry that utilise chemicals are the fire department and the explosives department.

5.14 Ministry of Works Housing and Communication

The mandate of this ministry is to promote an adequate, safe and well-maintained transport infrastructure, an efficient and effective communications system, safe housing and buildings and to contribute to the socio-economic development of the country. Part of this mandate is supposed to extend to providing for regulations/provisions for the safe transportation of chemicals as well.

5.15 Ministry of Justice and Constitutional Affairs

The mandate is the Ministry of Justice and Constitutional Affairs is to advise government on legal issues and develop the necessary legal instruments, laws and regulations for the country.

5.16 Ministry of Energy and Mineral Resources

This ministry and its departments of energy development, geological survey and mines, petroleum exploration and petroleum supplies are responsible for setting and regulating the energy sector as well as the mining sectors. In particular, the geological survey and mines department is responsible for the enforcement of the provisions of the mining act.

Table 5.A: Responsibilities of different Government Ministries, Agencies and other Institutions.

Stage of life cycle/Ministry concerned	Importation	Production	Storage	Transport	Distribution/ Marketing	Use/ Handling	Disposals
Environment	X	X	X	X	X	X	X
Health							
Agriculture	X		X	X	X	X	X
Labour			X	X	X	X	
Trade/Industry	X			X	X	X	
Finance	X						X
Transport				X			
Interior/ Civil Defence						X	X
Justice						X	
Customs (URA)	X						X
Foreign Affairs	X						
Others	X	X	X	X	X	X	X

COMMENTS AND ANALYSIS

A wide variety of pesticides are used to improve the quality and quality of crops and livestock. Most applications are carried out by small – scale farmers who apply simple traditional methods and are ill equipped for proper application of pesticides. This pauses potential risks to human and the environment.

Uganda's good tropical climate also breeds an abundant variety of diseases vectors namely; Tse-tse flies, Simulium flies, Mosquitoes, Water snails. As a result diseases like Malaria, sleeping sickness, River blindness, Bilharzia, Typhus fever, Plague Kala-Azar and Guinea worm are endemic in many parts of the country. This necessitates use of wide variety chemicals for public health use.

The demand for chemicals for use in these sectors is ever increasing with new types of chemicals being introduced on to the market every now and then.

Cases of pesticide misuse have been reported. Apart from use of pesticides for suicidal intention, pesticides have been used by unscrupulous fishermen for catching fish, control of birds pests, driving snakes out of holes, treating wounds and diseases like ringworms and killing body lice. An area of concern is the use of empty pesticide containers for other purposes like storing and packaging all varieties of foods. Since such containers are not properly cleaned before use, there is a high risk of chemical migration and contamination of the food.

CHAPTER 6: RELEVANT ACTIVITIES OF INDUSTRY, PUBLIC INTEREST GROUPS AND RESEARCH SECTOR

The purpose of this chapter is to describe and review activities of non-governmental bodies and entities, which support national efforts to manage chemicals.

The activities of Non-Governmental Organisations and other such bodies that support national efforts to manage chemicals are few (refer to chapter 11 for additional details). Among the institutions outside of government are also some professional and industrial organisations. There are also private individuals who support chemical management efforts. While some of the organisations have functions that cut across the entire life cycle of chemicals, others are just users, transporters and or distributors. Most of the distribution of chemicals is undertaken by the private sector, chemical storage facilities are usually poor and the problem of repackaging of chemicals into unsuitable and often poorly labelled containers is ubiquitous. There are however a number of NGOs that deal with environmental issues such as Climate and Development Initiatives (CDI) and Joint Energy and Environment Projects (JEEP) that are starting to address chemicals management however they are constrained by lack of adequate expertise in this area.

6.1 Description of Organisations/ Programmes

There isn't sufficient data or information on programmes and activities carried out by non-governmental bodies and entities, which support national efforts to manage chemicals.

6.2 Summary of Expertise available Outside of Government

The profile of Non-Governmental Organisations which might be available to support national programs and policies related to chemicals is indicated in Table 6A below.

Table 6.A. Summary of Expertise available Outside of Government

Field of Expertise	Research Institutes	Universities	Industry	Environment/ Consumer	Labour Unions	Professional Org.	Other (Specify)
Data Collection	XXX	XX		XXX		XX	
Testing Of chemical	XX	XX				XX	
Risk Assessment	X	XX				XX	
Risk Reduction	XX					XX	
Policy Analysis		XXX				XX	
Training And Education	X	X		XX			
Research on Alternatives	XXX	XXX					
Monitoring	XX	XX		XXX		XX	
Enforcement						XX	

Field of Expertise	Research Institutes	Universities	Industry	Environment/ Consumer	Labour Unions	Professional Org.	Other (Specify)
Information To workers	XX		X	XX	XXX	XX	
Information To Public	XXX			XX		XX	
Others (Specify)							

X- appreciable XX – to some extent XXX - Minimum

COMMENTS AND ANALYSIS

On the whole there is poor relationship/interaction between governmental and non-governmental organisations in the area of chemicals management. While there is a broad policy on chemicals management this hasn't been operationalized. Formal provisions for non-governmental organisations obtaining information related to the management of chemicals are also non-existent.

Adequately funded laboratories and libraries capable of handling management of chemicals are located in tertiary education colleges, research institutions, the Chief Government Chemist laboratories and NEMA's library. There are a few industries that have selected analytical capacity, but these often times are constrained by lack of finances, expertise and up to date information. It is therefore difficult to quantify the effectiveness of these efforts.

CHAPTER 7: INTERMINISTERIAL COMMISSIONS & CO-ORDINATING MECHANISMS

This chapter provides information on mechanisms used to facilitate coordination and cooperation among ministries, agencies and other NGO's and governmental bodies for chemical management.
Mechanisms that have established for chemical management among others include;

- National Drug Authority (NDA)
- Agricultural Chemicals Board
- National Environment Management Authority (NEMA)

Below are descriptions of these key mechanisms

7.1 National Drug Authority

Responsibilities

- Development and regulation of drugs and pharmacies nationwide;
- Approval and update of National list of Essential Drugs;
- Control of import, export and sale of pharmaceuticals;
- Control of quality and use of drugs;
- Promotion and control at local production of essential drugs;
- Support research and development of herbal medicines;
- Provides professional guidelines and sensitisation of the public;
- Advisory role to ministry.

Secretariat: National Drug Authority, Kampala

Members

- Director of Medical Services, Ministry of Health;
- Commissioner for Veterinary services, Ministry of Agriculture, Animal Industry and Fisheries;
- Commissioner for Trade and Industry;
- Director Criminal Investigation, Ministry of Internal Affairs;
- Chief, Medical Services, Ministry of Defence;
- Chief, Pharmaceutical and Health Supplies, Ministry of Health;
- Head, National Chemotherapeutics Laboratory, Ministry of Health;
- Head, School of Pharmacy, Makerere University, Ministry of Education;
- Representatives of National Medical services, Uganda Medical Association, Pharmaceutical Society of Uganda, Uganda Veterinary Association, Uganda Herbalists, Uganda Dental Association, Joint Medical Stores, Director of Uganda Aids Commission, Two persons from public.

Legislative mandate
The National Drug Policy and Authority Statute 1993
Effectiveness: Adequate

7.2 Agricultural Chemicals Board

Responsibilities

- Registration and regulations of use of agriculture chemicals;
- Regulations of quality, importation and distribution;
- Licensing;
- Advisory role to Ministry of Agriculture.

Secretariat: Agriculture Chemicals Board, Entebbe.

Members

- Commissioner, Ministry of Agriculture ;
- Dean, Faculty of Agriculture, Ministry of Education;
- Head, Agricultural Research;
- Chairman, Technical Committee Agricultural Chemicals;
- Commissioner, Government Chemist, Ministry of Internal Affairs;
- Commissioner, Veterinary Services, Ministry of Agriculture, Animal Industry;
- Director Medical Services;
- NEMA representative;
- Uganda National Bureau of Standards representative;
- Chief Forest Officer;
- Representative of Chemical Industry.

Legislative Mandate
The Control of Agricultural Chemicals Statute; 1989.

Effectiveness: Adequate

7.3 National Environment Management Authority (NEMA)

Responsibilities

- Nationwide coordination of environmental concerns with relevant ministries and agencies;
- Environmental policy planning and implementation;
- Initiation of standards, guidelines, and legislation;
- Environment impact assessment;
- Public Environment sensitisation and research;
- Mobilisation, expedition and monitoring of resources for environmental management;
- Any other duties assigned by Government.

Secretariat: National Environment Management Authority at Kampala.

Members
Representatives from;

- Ministry of Water, Lands and Environment;
- Ministry of Agriculture, Animal Industry and Fisheries;
- Ministry of Finance, Planning and Economic Development;
- Ministry of Health;
- Academic and Research Institutions;
- Non-Governmental Organisations;
- Private Sector.

Legislative Mandate
The National Environmental Statute,1995.

Effectiveness: Adequate

7.4 Description of Inter-ministerial Commission and Coordinating Mechanism

The National Drug Authority (NDA) is a corporate body under the Ministry of Health mandated by the National drug policy to regulate imports, production, distribution, marketing, export and use of pharmaceuticals in public and the private sector. The scope of drugs includes human, veterinary and narcotics drugs.

The secretariat is at NDA, Kampala headed by the Executive Secretary to the Authority. The board meets three (3) times a year, with the commission meeting more regularly. The NDA commission establishes the working procedure for the Authority.

Table 7.A Summary of Inter-ministerial coordination for drug control

MINISTRY	DEPARTMENT/BOARD	ISSUES
Min. of Internal Affairs	Criminal Investigation Department (Narcotics)	Narcotics control
Min. of Justice	Inspectorate	Legal affairs
Min. Finance & Economic Planning	Uganda Revenue Authority (Customs)	Imports and exports control
Min of Defence	Medical Services	Army medical Supplies
Min. Agriculture, Animal Industry & Fisheries	Agricultural chemicals Board	Control of veterinary and agricultural chemicals
Min. of Water, Lands and Environment	NEMA	Disposal of expired drugs
Min. of Education	School of Pharmacy	Professional training and research
Min. of Labour	Occupation and Health Safety Department	Occupational and Health safety and hazards
Min. of Health	NDA	Regulation and Control of human drugs

The Agricultural Chemicals Board (ACB) is an inter-ministerial body coordinated by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). The scope of issues covered includes control and regulation, manufacture, storage, distribution, trade in used, importation, exportation and other related issues of agricultural chemicals. The chemicals include insecticides, fungicides, nematodes, herbicides, acaricides, bactericides, rodenticides, molluscides, avicides, fertilizers, growth regulators and any other chemical or material used for agricultural purposes.

There exists a technical committee appointed by the Board in charge of extension. The Board meets at least four times annually but may meet more frequently as need arises. The Commissioner of Agriculture is the Chairman to the meetings and the quorum is five.

The National Environment Management Authority (NEMA) is the principal agency in Uganda mandated with the management, coordination, monitoring and supervision of all environment related activities. The scope of issues includes ensuring there is a framework for chemicals management as it relates to their registration, labelling, packaging, advertisings, distribution, storage, transportation and handlings of chemicals and materials.

Ii is also mandated to control import and export of toxic and hazardous chemicals and materials, monitoring the effect of chemicals and their residues on human health and environment and disposal of expired and surplus chemicals and materials and restriction and banning of extremely toxic chemicals and materials.

The appointed board chairman presides over the board meetings that are held four (4) times a year and five members form quorum. The board appoints as many technical committees as may be required to advise on such subjects relating to the environment.

7.5 Mechanisms for obtaining Input from Non-Government Bodies

Non-governmental organization's and agencies participate as board members, members of technical committees, working groups and other committees in these mechanisms. They provide input during stakeholders review workshops in form of advice, decision-making, day-to-day activities of governance and implementation of chemical management.

COMMENTS AND ANALYSIS

The effectiveness of these mechanisms is adequate. However control of small-scale outlet at grassroots level is still a challenge due to insufficient human and facilitation of the inspectorate and enforcement section. The possible solutions are:

- To formulate specific legislation to control/regulate small scale outlets;
- Nationwide capacity building in form of data, communication linkage, grass root control groups for management of chemicals;
- Nationwide sensitization and awareness of chemical management.

Generally management of industrial and laboratory chemicals, precursors, cosmetics and food supplements are not established. An independent body with legal mandate to control these groups of chemicals needs to be set up or these chemicals can be allocated into the existing mechanisms.

These existing mechanisms work independently however each mechanism has a representative of the other mechanism or its mother ministries on its board.

CHAPTER 8: DATA ACCESS AND USE

8.1 Availability of Data for National Chemical Management

National and International Data and other information on chemical safety is available at various institutions mainly at Government offices and international organizations' head offices. This kind of information is quite useful in reducing health and environment effects if well utilized. The available information has however been not much used to the expected level. In most cases the information is sought by experts in specific areas, scholars etc. Poor utilization of information may be due to the public's weak theoretical background on the issues. In theory, availability of information is free in most government offices.

Table 8.A below, provides an overview of whether data is available for different decision making activities which may be required under existing legal instruments

Table 8A

Data Needed	Pesticide (Agricultural, public health and consumer use)	Industrial Chemicals	Consumer Chemicals	Chemical Wastes
Priority Setting	Good	Low	Fair	Fair
Assess Chemicals Impact under Locals Conditions	Fair	Low	Fair	Fair
Risk Assessment (environment/health)	Good	Low	Fair	Fair
Classification? Labelling	Good	Low	Fair	Good
Registration	Good	Low	Fair	Fair
Licensing	Good	Low	Fair	Fair
Permitting	Good	Low	Fair	Low
Risk Reduction Decisions	Good	Low	Low	Fair
Accident Preparedness/ Response	Fair	Low	Low	Low
Poisoning Control	Fair	Low	Low	Fair
Emission Inventories	None	None	None	None
Inspections & Audits (environment/health)	Fair	Low	Fair	Fair
Information to workers	Fair	Fair	Fair	Fair
Information to the public	Fair	Low	Fair	Fair

8.2 Location of National Data

Table 8.B indicates the nature of national data related to chemical management, which is available, and provides practical information on how to gain access to such data. The table also indicates where the data is maintained and the format. Consideration was given to Government ministries, agencies and other institutions within non-governmental bodies.

Table 8B

Type of Data	Location(s)	Data Source	Who has access?	How to gain access	Format
Production Statistics	UBOS-Entebbe Uganda investment authority, Kampala	-Data office -MIS office	Public	Request	Soft and hard copies
Import Statistics General Agric. Chemicals Pharmaceuticals	 URA-customs Min. of Agric. Entebbe Min. of health-Kampala	 - C/CP-Agr.ch NDA	 - Public -	 - Request -	 Paper files, Hard copies
Export Statistics	URA-customs	-	-	-	-
Chemical Use Statistics Agric. Chemicals Pharmaceuticals	 Min. of Agric. Entebbe Min. of health-Kampala	 C/CP-Agr.ch NDA	 Public -	 Request -	Paper files, Hard copies
Industrial Accident Reports	Min. of Labour-Kampala	C/OSH	Public	Request	,,
Transport Accident Reports	Police/ CPS-Traffic sect. Kampala UBOS-Etebbe	Data Base office	Public	Request	,,
Occupational Health Data (agricultural)	Min. of Agric. Entebbe Min. of Labour-Kampala	C/CP-Agr.ch C/OSH	Public	Request	Paper files Electronic
Occupational Health Data (Industrial)	Min. of Labour-Kampala	C/OSH			,,
Poisoning Statistics[1]	Min. of Internal affairs	GCAL	Restricted		Paper files
Pollutant Release and Transfer Register	-	-	-	-	-
Hazardous Waste Data	NEMA-Kampala	S/Environmental Inspector	Public	Request	Paper files Electronic
Register of Pesticides	Min. of Agric. Entebbe	C/CP-Agr.ch	Public	Request, buy	Paper files
Register of Toxic Chemicals	NEMA-Kampala Min. of Agric. Entebbe	S/Environmental Inspector C/CP-Agr.ch	Public	Request ,buy	Paper files Electronic
Inventory of Existing Chemicals[2] Agric. Chemicals Pharmaceuticals	 Min. of Agric. Entebbe Min. of health-Kampala	 C/CP-Agr.ch NDA	,,	,,	,,
Register of Imports General Agric. Chemicals Pharmaceuticals	 URA-customs Min. of Agric. Entebbe Min. of health-Kampala	 - C/CP-Agr.ch NDA	 - Public	 Request	,,
Register of Producers[3]	Uganda Investment Authority URA, Kampala	MIS office -	,,	,,	,,

KEY to Table 8B

UBOS-Uganda Bureau of Statistics
UIA- Uganda Investment Authority
MIS- Management Information System office under Strategic Planning division
URA- Uganda Revenue Authority
C/OSH- Commissioner Occupational Safety and Healthy
MIA- Ministry of Internal Affairs
GCAL-Government Chemical and Analytical laboratory
NEMA- National Environmental Management Authority
C/CP-ag.- Commissioner Crop Protection - Agrochemicals Board.
NDA-National Drug Authority

Notes:

1. *Information on poisoning cases is available at Government Chemist Laboratory but not statistically organized. It is available in form of reports and in record books. It can be accessed through the commissioner GAL but restricted since it is forensic in nature.*
2. *The Universal inventory of all the existing chemicals in the country is lacking. However, inventory for particular categories of chemicals namely Agricultural chemicals can be accessed from Agro-chemicals Board, Pharmaceutical drugs inventory can be accessed from the National Drug Authority, imported chemicals' inventory can be accessed from the Uganda Revenue Authority- Customs Departments.*
3. *The register of producers is for only those who are registered.*

The national data is located mainly in Government offices. There is however no single institution acting as a national depositary of national data on chemical management.

8.3 Procedures for Collecting and Disseminating National data

Procedure for collecting and disseminating data related to chemical management is mainly available for agriculture chemicals, medical drugs and pharmaceuticals and chemical wastes.

The agriculture chemicals are managed under the Agriculture Chemicals (Regulations and Controls) 1993. Under the act, the Board is required to control agriculture chemicals, fumigators, commercial applications, and register of premises. This applies to both imported and manufactured. This requires the institution to collect all data on agriculture chemicals from literature and research regarding their potency, use, distribution and safety. The Commissioner crop protection – agrochemicals, maintains the data and is meant to be available to the public. They run training workshops for agricultural extensions officers and farmers to disseminate relevant information on agriculture chemicals.

For medical drugs and pharmaceuticals, the control and regulation is done under the National Drug Policy and Authority Regulations, 1995. The NDA licenses and controls both imported and manufactured drugs, their use and distribution. Maintenance of the data on health and environmental effects of the chemicals is largely found under Ministry of Labour for occupational safety and health issues.

The Factories Inspectorate under the Ministry of Labour and Gender Welfare in collaboration with the Labour Statistics unit does collect, analyse and provide information of occupational injuries; some of this data is organized in a computer database and hard copies.

Where there is a health or environmental chemical related problem, the Government Analytical Laboratory is available to offer service to both public and government institutions as well as to act as an independent body to testify in courts of law. Government Chemist and Analytical Laboratory (GCAL) samples where necessary, analyses, reports the data on a specific chemical substances in question or otherwise. Due to inadequate data management infrastructure, this data has yet to be computerized.

The management of chemical wastes is a responsibility of National Environment Management Authority under the National Environment Statute, 1995. They are empowered to gather, analyze and manage environmental information, education and public awareness. The information is organized on hard or soft copies and can be accessed by the public on request or by buying.

8.4 Availability of International Literature

Table 8.C below provides a summary of international literature available in Uganda currently.

Table 8C: Availability of International Literature

Literature	Location(s)/Office	Who has access	How to gain access	Format
Environmental Health Criteria Documents (WHO)	WHO library-Kampala NEMA	Public	Request	Book, paper
Health and Safety guidelines (WHO)	Min. of Labour C/OSH Min. of Internal Aff.GCAL WHO library-Kampala	Public	Request	Book, paper
International Chemical Safety Data Cards (IPCS/EC)	Min. of Labour C/OSH NEMA library	Public	Request	
Decision Guidance Documents for PIC Chemicals (FAO/UNEP)	Internet Min. of Agric. C/CP-Agr.ch FAO office-Kampala	All Public	-do-	Electronic Book, paper
FAO/WHO Pesticides Safety Data Sheets	Min. of Agric. C/CP-Agr.ch FAO office-Kampala	-do-	-do-	Electronic Book, paper
Documents from the FAO/WHO Joint Meeting on Pesticide Residues	Min. of Agric. C/CP-Agr.ch FAO office-Kampala	-do-	-do-	-do-
Material Safety data sheets (industry)	Min. of Labour C/OSH	-do-	-do-	-do-
OECD Guidelines for the testing of Chemicals[1]	-	-	-	-
Good Laboratory Practice Principles	Min. of NDA, Kampala Min. of Labour C/OSH	-do-	-do-	-do-
Good Manufacturing Practice Principles	NDA, Kampala	-do-	-do-	-do-
WHO/UNEP Global Env. Library Network	WHO library-Kampala	-do-	-do-	-do-

1. OECD: Organization for Economic Co-operation and Development

Most Laboratories utilize recognized protocols such as ISO, Codex, WHO-guidelines, UNEP guidelines, EPA- standard methods.

8.5 Availability of International Databases

Table 8D Availability of International Databases

	Location(s)/Office	Who has	How to gain

		access	access
International Register of Potentially Toxic Chemicals (IRPTC)	WHO library-Kampala	Public	No restrictions, request
International Labour Organisation (ILO CIS)	WHO library-Kampala Min. of Labour C/OSH	-do-	-do-
International Programme on Chemical Safety (IPCS INTOX)	WHO library-Kampala Min. of Labour C/OSH	-do-	-do-
Chemical Abstract Services Database	WHO library-Kampala Min. of Labour C/OSH	-do-	-do-
Global Information Network on Chemicals (GINC)[1]	WHO library-Kampala	-do-	-do-
STN Database[2]	---	---	---
Other relevant Databases from other Countries	---	---	---

1 In the process of being developed, to link information centres;
2 STN: Scientific and Technical Information Network, US Chemical Abstract Service.

Most Institutions concerned with management of chemicals have access to Internet services and international Literature and databases can be down loaded from the respective sites.

8.6 National Information Exchange System

Information flow from international organizations to nation institutions on chemical management depends on the type of information and is accomplished via the following ways:

- Courses, seminars, workshops, symposia, etc;
- International newsletters

The national information exchange system is effected through the following ways:

- Courses, seminars, workshops, symposia; etc
- Publications on particular aspects like environmental health for public awareness;
- Newspaper supplements, handouts etc by NEMA, NDA.

There is also exchange of information amongst other institutions although the system does not appear to be well defined.

COMMENTS AND ANALYSIS

The quantity and quality of Literature/Information base on management of chemicals is still inadequate. During the exercise it was established that there is a demand for information on management of chemicals from the public and there is a rising concern of

chemicals throughout their "Life-cycle". The information from different institutions does not conflict one another but in most cases is complementary.
Some of these institutions are:

- Crop protection -Agricultural chemicals;
- NEMA;
- National Drug Authority;
- Government Chemist and Analytical Laboratory;
- Ministry of Labour-Occupation Safety and Health.

Some of the institutions collecting and maintaining information related to the chemicals have started computerizing the information and using existing databases for some purpose. Some of the information has been computerized and can be found in NDA, NEMA, Ministry of Labour-Occupation safety and health, Uganda Bureau of Statistics, Uganda Revenue Authority, and Uganda Investment Authority.

However, it is important to note that many institutions with a lot of information have not yet computerized the information e.g. the Ministry of Agriculture, Animal Industry and Fisheries and the Agricultural Chemicals Board, the Government Chemist and Analytical Laboratory etc. As a whole, data management is still inadequate.

There is no universal national chemical inventory in place at the moment and computer networking with different institutions is not established.

Initiatives for improving the databases should be prioritised. The existing databases may be strengthened by:

- Building up technical capacity for data management in all concerned institutions;
- Put down the necessary infrastructure i.e. computers, internet, e-mail, telefax etc;
- Formulate, facilitate and publicize the network for information bank in the country;
- Avail some funding required as contributions to databanks for becoming eligible for news subscription.

A lot of international data on management of chemicals exists, however there isnt adequate utilization of this data. The main reasons might be lack of technical capacity/ know how and poor communication infrastructure. There is also lack of guidance to different websites for selecting appropriate information.

Scope for obtaining further local information on management of chemicals can be through:

- Joint participation and contributions of all stakeholders;
- Surveys;
- Monitoring at entry points;
- Overall monitoring of chemicals throughout their 'life cycle' and a chemical material balance where possible;
- Registration and compilation of an inventory of all chemicals used in the country.

CHAPTER 9: TECHNICAL INFRASTRUCTURE

This chapter is intended to provide an overview of the technical infrastructure and computer capabilities in the country related to the managements of chemicals.

9.1 Overview of Laboratory Infrastructure

The target laboratories were those that have analytical chemistry capacities to identify unknown elements, determine quantity and quality, conduct residue analysis and monitor possible adverse effects. They include teaching, research and analytical laboratories of government and private ownership. Clinical laboratories were not considered.

Table 9A below shows the overview.

Table 9A

Name of Lab	Location	Equipment available	Purpose
Government Chemist and Analytical Lab	Kampala	GC (ECD, FID, NPD), HPLC, AAS, FP,UVS, FUR	Forensic and general analysis
National Drug Quality Control Lab	Kampala	HPLC, UVS, FTIR, DT	Analytical control
Chemiphar (U) Ltd	Kampala	GC, UVS, PCR	Analytical and microbiology
Chemistry Dept MUK	Kampala	HPLC, GC(FID), UVS, AAS, FUR,	Research and teaching and general analysis
Geology Dept MUK	Kampala	AAS, UVS, XRF	"
Physics Dept MUK	Kampala	Geiger Muller	"
FST Dept MUK	Kampala	UVS, PEN, LOV,	"
Crop Science Dept. MUK	Kampala	Geiger Muller	"
Animal Nutrition	Kampala	UVS	"
Soil Science MUK	Kampala		"
Physiological Sciences MUK	Kampala	GC (ECD,FID)	"
Directorate of Water Development Lab	Entebbe	GC, UVS, AAS, AUT PHO,	"
Uganda National Bureau of Standards	Kampala	GC (FID), UVS	Sets standards, general analysis
Uganda Industrial Research Institute	Kampala	HPLC, GC	Research

Name of Lab	Location	Equipment available	Purpose
Natural Chemotherapautics Res Lab	Kampala	HPLC, UVS, IR	Research

KEY

GC (ECD, FID, NPD): Gas Chromatography
HPLC: High Performance Liquid Chromatography
AAS: Atomic Absorption Spectrophotometer
FP: Flame Photometer
UVS: UV-Vis Spectrophotometer
FUR: Furnace
FTIR: Flame Thermionic
DT: Dissolution Tester
XRF: Xray Fluorescence
AUT: Auto-analyser
PHO: Photometer
IR: Infra-red
LOV: Lovibond Tintometer
MUK: Makerere University Kampala

Most of the laboratories are located within and around Kampala. The major constraints facing instrumentation maintenance is lack of technical expertise for repairs and availability of spare parts. Other reasons are incompatibility of instrument components from different suppliers, poor handling and inadequate funding. All the labs are not GLP certified. This is probably because Uganda doesn't have a recognized body that offers GLP certificates. This is also true for accreditation except for Chemiphar accredited by BELTEST, Norway.

All the laboratories have basic facilities to handle general chemical analysis and they utilize recognized protocols such as ISO, Codex, WHO-guidelines, UNEP guidelines, EPA- standard methods, AOAC, Safety Guides, Quality assurance manuals and many others. There are also microbiology units in some laboratories. The UNBS microbiology Unit is accredited.

On the whole, national programmes for improvement of quality and quantity of the laboratories are not known, however international organizations such as DANIDA, Rockefeller, NUFU, British Council, through national bilateral cooperation have set programmes to that effect.

Formal cooperation amongst laboratories nationally and within regions is very limited to specific laboratories handling pesticide residues and pharmaceutical drugs. Most of the cooperation is informal, involving use of equipment, proficiency testing, other needed analysis and training. All the laboratories are not self-sufficient.

9.2 Government Information Systems /Computer Capabilities

Most government institutions have computer facilities and computer literacy is high. However system management is not very well established.

Table 9B below shows the available computer system useful for chemical information system.

Table 9B

Computer System/database	Location	Equipment Available	Currents
@Risk	Public Health, Fac. Of Vet.Med, MUK	Software CD	Monte Carlo simulation used in risk assessment
Polarie I	Chemistry Dept, MUK	Polargraphic analyser	Trace element analysis

Most of the computers in the institutions have Internet and Email facilities that are useful for accessing international data.

9.3 Overview of Technical and Education Programmes

Most of the training programmes in the institutions in the disciplines of Chemistry, Toxicology and Environmental Sciences target modern methods of analytical procedures and applied science. However there is no specific programme and policy on chemical management and assessment.

COMMENTS AND ANALYSIS

The most valuable and abundant facility for chemical management is human resources. There are many qualified well-trained personnel in different institutions widely spread in many parts of the country although most equipped laboratories are located in and around Kampala.

Specific training on chemicals management and technical handling of equipment is a requirement to enable personnel meet this challenge. In addition to the syllabi taught at higher institutions, aspects of chemical managements should be included. There is a significant need to establish a National policy on chemical management including monitoring, usage, handling and disposal and to create a chemical databank. This would be a useful source of information for policy making and planning.

It is also important to identify a body or members of different institutes to form an authority with the mandate to control and manage chemicals, such as the Government Chemist and Analytical Laboratory.

It was also recommended that heads or representatives from different institutions that utilize chemicals be involved in policy making, national planning and budgeting to ensure that the correct views are clearly represented.

To minimize expenses and wastage, vital equipment such IR-MS and other expensive equipment useful for chemical management can be jointly purchased and technicians trained to repair and maintain the equipment.

Lastly, an East African accreditation body should be established to accredit and certify quality and environmental management as well as GLP and regional and national cooperation on chemical management be encouraged.

CHAPTER 10: INTERNATIONAL LINKAGES

10.1 Cooperation and Involvement with International Organisations, Bodies and Agreements

Table 10 A: Membership in International Organisations, Programs and Bodies

International Body / Organisation	National Focal Point	Other Ministries Involved	Related National Activities
Intergovernmental Forum on Chemical Safety	Andrew Othieno Sr. Environmental Inspector, NEMA	• Ministry of Trade and Industry • National Drug Authority • Ministry of Health • Ministry of Agriculture Animal Industry and Fisheries	Development of National Chemical Profile Implementation of Priorities for Action and the Bahai Declaration
UNEP	The Minister, Water Lands and Environment; The Executive Director, NEMA.	• Ministry of Water Lands & Environment, • Ministry of Local Government • Ministry of Agriculture Animal Industry and Fisheries	Implementation of the National Environmental Action Plan (NEAP)
Industry and Environment / Programme Activity Centre (IE/ PAC)	Mr. Philip Gwage Metrological Department Ministry of Water Lands & Environment,	• Ministry of Trade and Industry • Ministry of Health • Ministry of Finance	Recovery and Recycling of Refrigerants; National Refrigerant Management Plan, Public Awareness and Outreach
International Program on Chemical Safety (IPCS)	Andrew Othieno Sr. Environmental Inspector NEMA	• Ministry of Water Lands and Environment; • Ministry of Labour • Ministry of Trade and Industry • Ministry of Agriculture • Ministry of Health	Chemicals management and safety aspects
WHO	Director of Health Services P.O. Box 7272 – Kampala Ministry of Health	• Ministry of Health • National Drug Authority • Ministry of Water Lands and Environment	Health medication and its management
FAO	The Coordinator FAO Desk – MAAIF Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)	• Ministry of Water Lands and Environment • Ministry of Local Government	Agricultural issues/management

International Body / Organisation	National Focal Point	Other Ministries Involved	Related National Activities
UNIDO	Jane Nambula Country Director Uganda Integrated Project	• Ministry of Tourism Trade and Industry	Uganda National Cleaner Production Centre services and other interventions in target sectors such as tannery
ILO	Ass. Commissioner, Child Labour Ministry of Gender, Labour and Social Development	Ministry of Gender, Labour and Social Development	Programme on elimination of Child labour in potentially dangerous working condition such as those commercial Agriculture and Industry. Removal of street children from the streets where they are exposed to use toxic chemicals.
World Bank	Ministry of Finance Planning & Economic Development	• Ministry of Water Lands & Environment • Ministry of Health • Various other sectors	Sector development projects – numerous
African Development Bank	Ministry of Finance, Planning & Economic Development	As above	As above
East African Community	Ministry of State for Regional Cooperation	• Ministry of Finance Planning & Economic Development, • Ministry of Trade and Industry	As above
COMESA	COMESA Coordinator Ministry of Trade & Industry Tel: 251578 Ministry of Trade & Industry	Ministry of Finance Planning & Economic Development	As above

Table 10B: Participation in International Agreements / Procedures Related to Chemicals Management

International Agreements	Primary Responsible Agency	Relevant Implementation Activities
Agenda 21 – Commission for Sustainable Development	• Dr. Robert Ogwang Natural Resource Management Specialist (Biodiversity and Range) NEMA • Ministry of Lands, Water and Environment	Review of Agenda 21 Implementation
UNEP London Guidelines	NEMA now overtaken by the Rotterdam Convention	Voluntary prior informed consent procedure
FAO Code of Conduct	Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)	Good management and practice in pesticide/agrochemical use
Montreal Protocol	Mr. Rwothumio Thomiko Environmental Impact Assessment officer NEMA	Recovery and Recycling of Refrigerants; National Refrigerant Management Plan, Public Awareness and Outreach
ILO Convention 170	Department of Labour	Labour related issues
UN Convention for the Transport of Dangerous Goods	Ministry of Housing, Transport and Communication	-
Basel Convention	Andrew Othieno Sr. Environmental inspector NEMA	Regulation of the transboundary movement of hazardous wastes
GATT / WTO agreements related to chemicals trade	Ministry of Tourism and Trade (Uganda is not a Signatory of any of the pluri-lateral agreements incl. Chemical management agreements)	-
Chemicals Weapon Convention	Mr Yusuf Katula Ministry of Labour -	-
Convention Concerning Safety in Use of Asbestos	National Environment Management Authority	-
United Nations Framework Convention on Climate Change	Mr. Philip Gwage Metrological Department Ministry of Water Lands & Environment	Implementation of the various provisions of the framework

10.2 Participation in Relevant Technical Assistance Projects

Table 10.C Participation as Recipient in Relevant Technical Assistance Projects

Name of Project	International Bi-lateral Donor Agency Involved	National Contact Point	Relevant Activities
Rehabilitation of Nakivubo Channel Project	**IDA**	• Ministry Of Finance Planning & Economic Development, • Kampala City Council	Expansion of the Nakivubo Channel a drainage for the Industrial and Domestic establishments in Kampala City.
Kasese Cobalt Project	**EU and other Donors**	• Ministry Of Finance Planning & Economic Development	Extraction of Cobalt from the pyrite stockpiles resulting from the Kilembe Copper Mines

COMMENTS AND ANALYSIS

While Uganda is signatory to several conventions and agreements related to the management of chemicals, the national implementation of the principles of these agreements has been extremely limited. Areas where there has been some amount of activity has been the Basel Convention, Montreal Protocol, as well as the Framework Convention on Climate Change. Uganda (with international and donor support) has undertaken projects to phaseout and recycle refrigerants, undertaken the training of target groups on hazardous waste management etc.

In general, Uganda lacks national programmes aimed at effectively handling chemicals management. Although NEMA does in theory have the mandate of chemical management under its umbrella, chemical management is a new area of environmental management that it has only very recently begun to seriously develop a framework for, and by all accounts this profile is the first step to that ultimate goal. It is anticipated that as and when a national program or framework is in fact developed, it will be based upon the recommendations of this profile. This profile therefore, strongly stresses the importance of building the principles of these international agreements into the core foundation of a national chemical management programme. Signing conventions does Uganda little good without further undertaking activities to meet the goals of these conventions.

There are some procedures should be put in place to ensure coordination between Ministries and Donor Agencies responsible for aid activities and those responsible for protection of health, safety and environment management. For aid agencies, much of this information is provided through the aid liaison department. NEMA has taken on the role of an umbrella organisation to which concerns about environment and environmental health issues can be raised, and it is expected that NEMA will play a coordinating role with other ministries and agencies. There remains however a recognised need to increase NEMA's capacity to handle cross cutting issues such as environmental management by coordinating and cooperating across ministries and sectors.

There is a very limited international agency participation in activities related to chemicals management, and particularly a lack with regard to chemical safety. Organisations such as USAID have undertaken some studies pertaining to the nature of agricultural chemical use, but activities have stopped short of actually working to bring about changes in such use despite alarming findings. The USAID study has revealed that the floriculture industry is of particular concern with regard to chemical safety. USAID, however, continues to actively support the floriculture industry.

Africa is typically a dumping site for obsolete chemicals from the more developed world, and Uganda is no exception. Many of the chemicals freely available on the market here, particularly the most economical options, are illegal in more developed countries, yet because of their relatively low costs and the very limited market availability of chemicals in Uganda, they continue to be widely used in agriculture – particularly in industrial agriculture. International agencies must be encouraged to work with Ugandan government and authorities to introduce programmes to build market capacity to monitor chemical quality and standards, and to limit the availability of hazardous industrial and particularly agricultural chemicals. They would also do well to give some consideration to issues related to waste management, and especially to the management of expired drugs, of which vast stockpiles presently exist in this country.

An incidental issue of concern is the fact that there is a shortage of internationally recognised experts in the chemical sector.

There are several tools availed by the international chemical management agreements that Uganda could and should make use of in its process to develop a comprehensive system for management of chemicals, such as the IPCS INCHEM database.

The prime concern is that chemical management must be defined as a priority area of concern. Once that step has been taken, concrete and well-planned initiatives must be taken to adequately manage chemicals in Uganda, in spite of limited financial and other capacities to do so. Whilst capacity in chemicals management in Uganda remains extremely low, the country is in a position to use the findings of this profile to draw up a strategic plan for chemical management, that effectively meets the needs identified and fills the gaps that exist. It is expected that this profile will provide a reasonably comprehensive account of the situation with regard to Uganda’s capacity to manage chemicals, and in so doing provide a foundation and rationalisation for international agencies to pursue projects in this sector.

CHAPTER 11: AWARENESS/UNDERSTANDING OF WORKERS AND THE PUBLIC

As chemical use, handling, manufacture, import and export, storage and disposal increase, chemicals risks are increasingly becoming an issue of concern. This chapter therefore, provides an overview of steps undertaken and the missing links in as far as creating awareness both to workers and the public are concerned, regarding the potential risks related to chemicals management.

11.1 Legal instruments for raising awareness on chemical management

There are some legal instruments in place that help promote management of chemicals, although it must be said these laws do not adequately address raising awareness both to workers and the public. These include:

Laws/Legislation

1. The Control of Agricultural Chemicals, Statute 8/1989;
2. The National Drug Statute 1993;
3. The National Environment Statute 1995;
4. Uganda National Bureau of Standards Act;
5. The Plant Protection Act. Cap. 244 of 1964;
6. The Protection Animals (anaesthetics) Acts 1954/64;
7. The National Medical Stores Act 2000;
8. The Factory Act 2000;
9. The Employment Decree of 1975.

Regulations:

1. Chemicals Regulations (Registration and Control) 1998;
2. Guidelines for Inspection issued by; Agrochemicals Board, UNBS and NDA;
3. Modalities for safe disposal of chemicals;
4. Environment Impact Assessment Regulations 1998;
5. Standards for Discharge of Effluents onto Land or Water 1999;
6. Regulation on Ozone Depleting Substances.

Policies:

1. National Environment Policy 1994;
2. National Drug Policy.

International Conventions and International Guidelines:

1. International code of conduct on the distribution and use of pesticides;
2. The Rotterdam Convention;
3. The Stockholm Convention;
4. The Basel Convention;
5. London guidelines;
6. EPA guidelines;
7. FAO code of conduct.

In addition, some few districts have bylaws/ordinances that help promote chemicals management.

However, there are no definite and deliberate laws, policies, regulations and bylaws/ordinances that directly help promote awareness raising. No law is in place that harmonises chemicals management in its diversity. Most prevailing laws target specific types of chemicals like, agrochemicals, pesticides and some few others. Even in their being specific, these laws are not comprehensive enough to promote awareness to the workers and the public and there are no sufficient mechanisms to enforce them. The control of agricultural chemicals for example, fall short of being adequate regulations that would help promote effective management of agrochemicals and yet, agrochemicals pose the highest risk to the public given their ever increasing use, handling, import and export, storage and disposal by some members of the public; who can neither read or appropriately interpret the labels on these chemicals. In addition, the laws are not popular in the various Government ministries/institutions; very few ministries/institutions know government's policy on chemicals management and the various pieces of legislation in place.

The situation of regarding chemicals legislation can therefore be correctly described as being composed of:

1. Fragmented or incomplete legislation;
2. Several laws to control exposure, but poor coordination among the ministries;
3. Weak enforcement for the scattered/sectoral laws.

11.2 Awareness raising to workers

Although there are no definite and deliberate laws that help in promoting awareness, there are programmes for workers on Occupational Health and Safety (OHS) conducted by the Labour Department in the Ministry of Gender, Labour and Social Development. However, these programmes are limited and in most cases, inadequate to effectively create sufficient awareness to workers. Most government ministries and departments do not have such programmes for their employees due to budgetary constraints.

11.3 Awareness raising to the public

In as far as raising awareness to the public is concerned, the various ministries and institutions have made very little or no efforts of ensuring that the public is made aware of chemicals risks. Most chemical awareness programmes have tended to be reactive in nature rather than proactive. A number of chemicals are repackaged and sold on the market without labels, while others carry labels that are scientific and in languages that cannot be easily understood by the users and require translation/interpretation of the labels to the users. None the less, the National Environmental Management Authority and some NGO's play a key role in this area although they are over whelmed by the magnitude of the work and the lack of specific regulations to address this area of weakness.

11.4 Awareness and education institutions and programmes

As chemical concerns grow, there is an increasing need to create awareness. Although there are no adequate legal instruments that help promote awareness raising on chemicals' management, some Government institutions and Non-Governmental Organisations have put in some effort to this effect. Their work has remained insignificant due to, the prevailing awareness needs, lack of funding for awareness programmes and lack of an inventory of the chemicals used in the country.

Government institutions and NGO's that play a key role in awareness raising on chemicals management include the following:

GOVERNMENT INSTITUTIONS

National Environmental Management Authority (NEMA):
It is involved in the development of appropriate legislation and guidelines on chemicals management. In addition, it conducts environmental programmes aimed at raising awareness through workshops/seminars, posters and electronic and print media. Although these programmes are not primarily focused on chemicals management, some components do.

Ministry of Gender, Labour and Social Development:
The department of labour conducts awareness programmes on Occupational Health and Safety. This is done in collaboration with Trade Unions.

National Agricultural Advisory Services (NAADS)
It addresses mainly agrochemical awareness to the farmers. However it is a new creation under the Governments Plan to Modernise Agriculture (PMA) and its activities have not yet created any impact.

Uganda National Bureau of Standards (UNBS):
Carries out awareness campaigns to the public on specific products, which are found to be lacking in standards. However, campaigns come as result of an already existing problem. It also develops and sets laboratory standards.

Non-Governmental Organisations (NGO):

National Union of Plantation Workers of Uganda (NUPAW):
This and other organisations affiliated to the National Organisations of Trade Unions (NOTU) raise awareness to the workers on Occupational Health and Safety. They have branches in most plantations in the country. Although these programmes at times benefit the public, they are not the primary targets.

Climate and Development Initiative (CDI):
CDI an NGO, raises awareness on the dangers associated with chemicals in relation to climate change. This is done through newsletters, public lectures, seminars, workshops and conferences. It is a member of the Pesticide Action Network (PAN) and the International Persistent Organic Pollutants Elimination Network (IPEN).

National Association of Professional Environmentalists (NAPE):
Through its departments of Waste Management and Biodiversity Conservation, it conducts awareness seminars, workshops and exhibitions to communities. These usually address organic substitutes to agrochemicals and other aspects related to chemicals use, storage and disposal.

Uganda Environment Protection Forum (UEPF):
Raises awareness to the public on dangers associated with chemical wastes. It is also spearheading a number of NGOs with an aim of promoting safe storage and disposal of petrochemicals wastes.

Uganda Environmental Education Forum (UEEF):
Creates awareness on misuse/abuse of agrochemicals to the rural farmers.

11.5 Funding for awareness raising and education programmes

Whereas chemicals use, handling, manufacture, import and export, storage and disposal have become a significant area of concern, various government ministries and departments have not allocated funds in their budgets for awareness raising programmes. Even at the district level, where many of the users are not knowledgeable on the chemical risks, awareness programmes are not budgeted for. There is insufficient budgeting for protective gear for employees at the district, which gears are often not sufficient for the labour force exposed to chemicals risks in these areas. Most members of the public in rural areas do not often get awareness programmes, yet they are key users of agrochemicals and other pesticide and medical chemicals.

11.6 Availability of tools/facilities for awareness raising

Most ministries, departments and districts are not equipped with sufficient tools or facilities that would enable them raise awareness. Many districts, lack-qualified manpower for raising awareness on chemicals, save for the agriculture extension officers who have some knowledge on agrochemicals although they are not skilled enough to effectively raise awareness on the diverse chemicals available on the market. Even for the agrochemicals, lack of an inventory also makes it difficult for awareness raising.

11.7 Raising awareness and education to the public for effective participation in environmental management initiatives

Ten years after the summit in Rio de Janeiro, there has been very limited achievement in awareness raising to promote participation of the public in environmental management initiatives. Although efforts have been made to implement local Agenda 21, this has only been effected in one district (Jinja) of Uganda. The public has therefore remained as spectators rather than participants in environmental initiatives that is required in Agenda 21. Where the public has shown a degree of participation, it has mainly been due to the efforts of NGOs. However with the earth summit in Johannesburg round the corner, there is increased activity from both Government and the NGOs, there is fear that the current momentum will eventually fade away after the summit due to lack of funding.

The idea of Government in promoting the concept of Public Participatory Partnerships (PPPs) is a new phenomenon. In the water sector for example, as a pilot phase, they are being implemented in 6 districts. Government - Public Participatory Partnerships also do exist in other government institutions although they have not taken root.

CHAPTER 12: RESOURCES AVAILABLE AND NEEDED FOR CHEMICALS MANAGEMENT

12.1 Resources Available and Needed in Government Ministries/Institutions

Table 12.A: Resources Available in Government Ministries/Institutions

Ministry/Agency Concerned	Number of Professional staff Involved	Type of Expertise Available	Financial Resources Available (Per year)
Ministry of Water, Lands and Environment Dept. of Physical planning Dept. of Meteorology	None 4	None Operators of Hydrogen Operators Handling of Mercury Barometers/Equipment	None None
Ministry of Health	196	Pharmacists Dispensers Pharmaceutical managers	75.000.000/-
Ministry of Local Government	None	None	Nil
Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) Dept. of Livestock Heath and Entomology Crop Protection Department	33 6	Professional Vets and Entomologists 1 Chemist 4 Lab Technicians **Figures not Known**	**Unknown** **60.000.000/-**
Ministry of Gender, Labour and Social Development			
Ministry of Tourism, Trade and Industry			
Ministry of Finance, Planning & Economic Development	None	None	None
Ministry of Works, Transport and Communication	-	-	-
Ministry of Internal Affairs Government Analytical Laboratories Police	16 None	Forensic Toxicologists Environmentalists Food Technologists None	None None
Ministry of Foreign Affairs	-	-	-

Ministry/Agency Concerned	Number of Professional staff Involved	Type of Expertise Available	Financial Resources Available (Per year)
Ministry of Energy and Mineral Development Geological Survey and Mines Department Petroleum Exploration and production Dept.	10 4	Chemists Geochemists/Geologists Laboratory technicians Organic Geochemistry Palaeontology Petrography	2.000.000/- NIL
Ministry of Justice and Constitutional Affairs	None	None	NIL
Ministry of Public Service	None	None	NIL
Ministry of Disaster Preparedness and Refugees	None	None	NIL
Ministry of Education and Sports	None 29	None Expertise based on background Chemicals training lecturers undertake	Nil Nil
National Environment Management Authority (NEMA)	2	Msc. With some specialised training in chemicals management	Nil
National Drug Authority (NDA)	-	-	-
National Medical Stores	-	-	-
Uganda Revenue Authority (URA)	8	Lab. Technicians in chemistry/Biochemistry Biochemist Chemists Food science technologists	Nil
National Agricultural Research Organisation (NARO)	300	300 Scientists with Msc. 50 Lab Technicians	20.000.000/-
Department of Chemistry, Makerere University	29	Expertise based on background on chemical training lecturers undertake	Nil

12.2 Resources Needed by Government Institutions to fulfil Responsibilities related Chemicals Management

Table 12.B: Resources Needed by Government Ministries/Institutions to fulfil Responsibilities related Chemicals Management

Ministry/Agency Concerned	Number/Type of Professional Staff Needed	Training Requirements
Ministry of Water, Lands and Environment Dept. of Physical planning	0	Nil
Dept. of Meteorology	2 People Hydrogen generation and handling Handling of Neutron Probe	Handling of Hydrogen gas and mercury Handling of Neutron soil moisture probes
Ministry of Health	150 People (Both at district and Regional referral hospitals) Pharmacists Dispensers/Pharmacy technicians	30 Pharmacists per annum for the next 10 years 50 Pharmacy Technicians per annum for the next 10 years
Ministry of Local Government	2 People Chemicals Management Techniques	Not yet established
Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) Dept. of Livestock Heath and Entomology	5 People 4 Laboratory Technicians 1 Chemist	Unknown
Crop Protection Department	10 people: Pesticide chemist – Formulation and residue analysts Pesticide Toxicologists Pesticide resistance analyst	Masters of sciences – Pesticide Chemists/toxicologists PhD – environment toxicology Degree Crop Science Laboratory Technicians
Ministry of Gender, Labour and Social Development	-	-
Ministry of Tourism, Trade and Industry	-	-
Ministry of Finance, Planning & Economic Development	Nil	Nil
Ministry of Works, Transport and Communication	-	-
Ministry of Internal Affairs Government Analytical Laboratories	Nil	Chemicals Disposal Hazardous waste management
Police	People for: Sensitisation on chemicals Identification of Chemicals Storage and disposal of chemicals	Basic for starters Progressive training to equip/raise more awareness

Ministry/Agency Concerned	Number/Type of Professional Staff Needed	Training Requirements
Ministry of Foreign Affairs	-	-
Ministry of Energy and Mineral Development Geological Survey and Mines Department Petroleum Exploration and production Dept. Dept. of Energy	 5 People Expertise in Use, Storage and Disposal 0 Disposal of Large Volumes of highly poisonous Chemicals - 	 Chemicals Storage Chemicals Disposal Chemicals Storage Disposal of large volumes of highly poisonous Chemicals -
Ministry of Justice and Constitutional Affairs	-	-
Ministry of Public Service	10 People Elementary chemicals managers Technical chemicals managers	Elements Technicians Trainers
Ministry of Disaster Preparedness and Refugees	-	-
Ministry of Education and Sports	Nil	Awareness in handling Chemicals in Schools for practical Work in Laboratories. Farm Chemicals handling Chemicals Storage Developing guidelines for there Disposal
National Environment Management Authority (NEMA)	5 People University graduates Knowledgeable on Storage and Disposal of Chemicals	General chemicals management – production, transport, use, disposal etc. Legislation development on management of chemicals
National Drug Authority (NDA)	-	-
National Medical Stores	-	-
Uganda Revenue Authority (URA)	2 People Environmental inspector Chemicals waste management	Chemicals waste management courses Chemicals management courses in relation to the environmental pollution
National Agricultural Research Organisation (NARO)	Expertise needed: Chemicals Handling Sound design of experiments Interpretation of Chemicals Data Writing of Scientific reports	Safe use and Disposal of chemicals Safe and Proper Laboratory Practices
Makerere University, Department of Chemistry	None	Disposal of chemical wastes Refresher courses in handling and disposal of chemicals wastes.

COMMENTS AND ANALYSIS

Most government ministries/agencies lack the capacity to handle or address chemicals and have not realised the relevancy of doing so. There is limited or no budget for chemicals

management in most government ministries/agencies. Most government ministries have restricted themselves to policy issues without, putting in place adequate structures to monitor and implement the policies they put in place; which policies are also still inadequate in as far as chemicals management is concerned. In some ministries/sectors where the technical staff are available, there is inadequate funding; weak policies; lack of a chemicals inventory and lack of equipment, which has led to poor service delivery. Taking the Government Analytical Laboratory for example, although it has adequate staffing to play a key role in chemicals management, it does not get sufficient facilitation to enable it effectively play its role.

Ministries/institutions still require awareness on their roles in the management of chemicals, as many of them feel that it is not their direct responsibility. Therefore, there is great need for capacity building and human resource training in almost all areas of chemicals management. However, the key training needs that have been identified among others include the following with respect to chemicals management: storage; disposal; legislation development; chemicals waste management; safe use and handling of chemicals.

The assessment of the lack of qualified human resources to manage chemicals is difficult to determine since many Ministries/Institutions seem unaware of what personnel they are lacking. However, there is still deficit in **Technicians, Legal Experts, Chemists, Toxicologists, Chemicals Waste managers, etc.**

As a way forward, there is need in the various ministries/institutions for:

- Raising awareness;
- Creation of appropriate institutions that promote chemicals management;
- Training of personnel in techniques that promote adequate chemicals management;
- Making of an inventory for the various chemicals used in the country;
- Networking in chemicals management issues;
- Harmonising legislation and putting in place appropriate policies;
- Make chemicals management priority by providing adequate funding and equipment.

ANNEX 1: GLOSSARY

“A chemical”is defined in the National Environment Statute as a chemical substance in any form whether by itself or in a mixture or preparation whether manufactured or derived from nature and for purposes of that Statute, chemicals include industrial chemicals, pesticides, fertilizers and drugs.

A“toxic chemical” means a chemical that can cause injury or death of a living organism or tissue as a result of physic-chemical interaction.

“Hazard”is the ability of a chemical to cause harm and its assessment is based on the inherent unchanging characteristics of the chemical itself.

“Hazardous chemical” means a chemical, which represents a threat to human or animal health or to the environment.

“Impact Assesment” means a systematic examination conducted to determine whether or not an activity, product or service will have or result any adverse effect on human health or the environment.

“Pollution” means any direct or indirect alteration of the physical, thermal, chemical, biological, or radioactive properties of any part of the environment by discharging, emitting, or depositing wastes so as to affect any beneficial use adversely, to cause a condition which is hazardous or potentially hazardous to public health, safety or welfare, or to animals, birds, wildlife, fish or aquatic life, or to plants or to cause a contravention of any condition, limitation, or restriction to which is subject to licence under any environment regulation.

“Banned chemical”means a chemical which has, for health or environmental reasons, been prohibited for all uses by final government regulatory action.

“Severely restricted chemical”means a chemical for which, for health or environmental reasons, vitually all uses have been prohibited nationally by final government regulatory action, but for which certain specific uses remain authorized.

“Chemical safety” means the prevention and management of adverse health effects both short-term and long-term to humans and environment derived from the production, storage, transport, trade and disposal of their wastes and the minimization of economic losses arising from their hazards.

“Pesticide” means a chemical substance used for control of an organism that is detrimental to man or his interests.

“Management” means the handling, supply, transport, storage, treatment, application or other use of a chemical subsequent to its initial manufacture or formulation.

ANNEX 2: NAMES AND ADDRESSES OF KEY INDIVIDUALS AND ORGANIZATIONS

NAME	INSTITUTION	BOX NO.	TEL/FAX	E-MAIL ADDRESS
Andrew Othieno	NEMA	22255 Kampala	2150/5/8 257521 (Fax)	aothieno@nemaug.org
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Karungi Naomi	KCC	7012 Kampala	071-831124	
Ssenyonjo Nicholas	Uganda Environmental Education Foundation (UEEF)	5658 Kampala	290740/077-420182	ueef@operamail.com
Taka Wandera Geofrey	NUPAWU	1 Lugazi	077-668436	
Nyakahuma Edward	Climate & Developmental CDI	8849 Kampala	342685 584957	acs@starcom.co.ug
Dr. Ogaram	Min labour	Box 7009	077-433090	dogara@infocom.co.ug
Ssebagala B.M.S	UIRI/UCPC	Box 7086	287958	Silverbms@hotmail.com
Kaviiri Dentons	Uganda National Bureau of Standards.	6329 Kampala	041-222367/9	kdentons@yahoo.co.uk unbs@afsat.com
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Kiganda Ssanko	New Vision	Kampala	-	
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Abby Mutebi	Cambra		077-507317	
Mariam Nakisekka	New Vision	9815 Kampala	07-511012	nakisekka @yahoo.com
James Bakunzi	New Vision	9815 Kampala		
James Oyango	Radio One/Two	8945	348211	
Mita Nakhooda	UNDP		233440	undp@imul.com
Kwizera Kagre	BBS		077-54835	

APPENDIX 1: ABBREVIATIONS/ACRONYMS

CDI	Climate Development Initiatives
GEF	Global Environment Facility
IFCS	Inter-Governmental Forum on Chemical Safety
ILO	International Labour Organisation
IOMC	International Organisation for the Management of Chemicals
JEEP	Joint Energy and Environment Projects
KCC	Kampala City Council
MAAIF	Ministry of Agriculture Animal Industry & Fisheries
MGLS D	Ministry of Gender Labour and Social Development
MOH	Ministry of Health
MTTI	Ministry of Tourism Trade and Industry
MUK	Makerere University Kampala
NAPE	National Association of Professional Environmentalists
NARO	National Agricultural Research Organisation
NDA	National Drug Authority
NEMA	National Environment Management Authority
NGO	Non Governmental Organisation
NUPAWU	National Union of Plantation Agricultural Workers of Uganda
OECD	Organisation for Economic Co-operation and Development
OHS	Occupational Health and Safety
POPs	Persistent Organic Pollutants
UCPC	Uganda Cleaner Production Centre
UEPF	Uganda Environment Protection Forum
UIA	Uganda Investment Authority
UIRI	Uganda Industrial Research Institute
UMA	Uganda Manufacturers Association
UNBS	Uganda National Bureau of Standards
UNCST	Uganda National Council for Science and Technology
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Programme
UNITAR	United Nations Institute for Training and Research
URA	Uganda Revenue Authority
WHO	World Health Organisation
UEEF	Uganda Environmental Education Foundation

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