THE UNITED REPUBLIC OF TANZANIA

MIISTRY OF HEALTH

GOVERNMENT CHEMIST LABORATORY AGENCY

NATIONAL PROFILE TO ASSESS THE NATIONAL INFRASTRUCTURE FOR MANAGING CHEMICALS

Sponsored by: Ministry of Health/Pooling Partners

Second Edition

Edited by Dr. Enock Masanja,
September 2002

EXECUTIVE SUMMARY

INTRODUCTION

The first draft of the National Profile to assess Chemicals Management in Tanzania was prepared in 1996. The second and third versions were subsequently released in 1997 and 1999, respectively.

This is a ***second edition*** of the document and has been prepared after major revision, including undertaking a limited survey of in Arusha, Dar es Salaam, Mbeya and Mwanza: the major centres of industrial and economic activities. The legal framework is also changing, a number of sectoral specific legislations are under review, have been amended or are under development. Chapter 4 covers this area.

There has been a significant improvement of nation's capacity to manage chemicals as a result of a number of activities that have been undertaken since the preparation of the first draft of the National Profile. The National Profile has been and will continue to be a valuable document for reference on matters pertaining to chemicals management and therefore it needs to be updated on regular basis.

The Chief Government Chemist Laboratory, which was changed into a semiautonomous Agency in 1999 is still the Designated National Authority (DNA) for the Prior Informed Consent Procedure and for industrial and consumer chemicals.

The experience gained and information gathered during all these years has greatly strengthened the National Chemicals Management infrastructure. While UNITAR and the Tanzania National Environment Management Council (NEMC) sponsored the preparation of the first version, the updates have been done at minimal or no extra cost.

Objectives

The main objective of the National Profile is still the same that is to maintain an authoritative national reference document, on the state of affairs regarding Chemicals Management in Tanzania. The 4th version therefore updates on the strength and capacity built so far and points out the remaining weaknesses to be addressed in order to have a sound chemicals management in Tanzania. Specific objectives of the National profile include:

- to enhance the efficiency of government operations;
- to indirectly improve the social well-being of the society, through protection of health and the environment;
- to assess the management of a chemical throughout it's life cycle;
- to facilitate national participation in international activities, through exchange of experience and uniform methods of reporting;
- to facilitate the incorporation of chemicals management in education and training programs for all members of the society; and
- to 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.

Preparation of the National Profile

In the preparation of the first edition of the National Profile, the Chief Government Chemist established a National Co-ordinating Team (NCT) in September 1996. The NCT identified institutions that formed working groups for different chapters. Government Institutions, non-governmental institutions, stockholders, research institution continued to assist in the data gathering exercise and have participated in the Profile review meetings.

The approach of involving multi-disciplinary and cross-sectoral institutions and experts was also used in the preparation of this second edition with a culmination of a workshop which was held in Morogoro 5th to 10th August 2002 to review the document.

Tanzania continued to receive support from International Organisations in form of training and resource personnel for different activities which have been done under the framework of capacity building. The experience gained from the different activities is also included in this version.

National Background Information

Tanzania is an East African country lying just below the equator, latitude 2^{o} North and 9^{o} South and longitude 30^{o} West and 40^{o} East.

Tanzania constitutes of mainland Tanzania and the islands of Zanzibar and Pemba, covering 945,200 square kilometres. Tanzania exercises multi-party democracy with an elected executive president. The population of Tanzania is currently estimated to be 30million, with about 50% below 15 years of age. The life expectancy is 49 years for both male and female.

The major contributors to the Gross Domestic Product are the Agricultural Sector (55%) and Industrial sector (7.3%). Major cash crops include cotton, tea, tobacco and coffee, while major food crops include maize, rice, wheat, millet and beans. Substantial amounts of agricultural and industrial Chemicals are needed for these activities.

Chemical production, import, export and use, and priority concerns.

Tanzania does produce some chemicals for internal use but not export. However, she does import and use a substantial amount of chemicals especially agrochemicals, industrial and consumer chemicals. The infrastructure for transporting, handling, storing, formulating and applying chemicals is still not adequate and it is recognised that the threat of adverse effects (human health and the environment) due to chemical exposure to is still high. This was confirmed for example, in the findings of a pilot project on the risk assessment and risk management of endosulfan, a study carried out in 1999. The majority of people handling chemicals are still ignorant and have low awareness on the adverse impacts of chemicals to their health and the environment in general. Record keeping has not improved, however, the Ministry of Health has released funds to prepare a national register. This, coupled with the computer and network facilities installed from a grant from UNITAR will improve to some extent the data storage and accessibility.

Legal instruments and non-regulatory mechanisms

There is still lack of a government policy on management of chemicals. It is still envisaged that the national policy will provide direction and priorities, set up targets and mechanisms

for evaluations. The national policy will also help define the human and financial resources required in the field of management of chemicals.

The legal regime has not changed. The management environmental pollution is still supposed to be through a multitude of sectoral legislation. The National Environmental Policy, which includes aspects of chemical pollution control, with no specific provisions for chemical management though, still has no environmental law to back it. Co-ordination between ministries and government departments is still weak, enforcement mechanisms has not improved, funding of chemicals management activities is still not adequate. All these, make it difficult to use the legal instruments to manage the chemicals.

Several bodies, which can be used to manage chemicals, exist. These include; Inter-ministerial Steering Committee and Technical Committee for PIC procedure, Advisory Committees for Chemical Management and for Radioactive Materials, Advisory Boards for Management of Pharmaceuticals, Petroleum Products and Pesticides. However, there are weaknesses that limit effectiveness of these mechanisms. These include lack of legislation to facilitate management of industrial and consumer chemicals, inadequate information exchange and weak co-ordinating capacity in relevant institutions.

Institutions which collect and maintain information related to the management of chemicals have increased although the quality and integrity of the information has not been assessed.

Inter-ministerial Commission and Co-ordinating Mechanisms

The mechanisms for inter-ministries co-ordination and co-ordination with international organisations both in practice and procedures are still weak and need improvement e.g. by having a single co-ordinating body dealing with management of chemicals only. Attempts were made during the Bagomoyo Workshop, which was convened to approve the action plan, to put in place such committee. The recommendation has been forwarded to the Cabinet for endorsement. Formation of networks both nationally and within the region, improved monitoring and follow-up mechanisms of activities, better and strengthened multi-sectoral co-operation has started by procuring a PC and a Server for the GCLA, a local area network would improve the scope and strength of expertise in management of chemicals by providing a platform for sharing experience and resources.

International linkages

Tanzania is a member of International Organisation e.g. UNEP, UNIDO, ILO. WHO, and is also is a signatory of several major international conventions such as Basel Convention and Bamako Convention. However, the full benefits of these linkages are not realised because of lack of internal co-ordination, legal structure e.g. absence of national environmental policy and national environmental law. Also of importance is the lack of a properly conceived programme with well articulated goal.

Awareness

As far as chemical risks are concerned, awareness at different levels of those who come across chemical substances is of prime importance. Lack of awareness, financial constraints and poor co-ordination amongst decision makers and participating institutions has affected

some of the national activities related to the implementation of international agreements related to management of chemicals.

The emerging Non-Governmental Organisations are proving to be effective in promoting public awareness and in disseminating information to the public. It will however take a long time for the organisations to acquire practical experience, expertise and financial resources to achieve sound management of chemicals.

Resources available and needs

Nationally, there seems to be reasonable pool of experts for handling management of chemicals who might need additional specialised training and continuing education on the subject. The Research Institutions and Universities have relatively better technical infrastructure in terms of expertise and analytical equipment for handling management of chemicals. Maintenance of analytical instruments is a serious problem.

Recommendations

It is therefore recommended that:

i) A nation-wide survey be conducted to establish the actual quantity of chemicals imported and used and a national register on all chemicals be established. Guideline on transporting, handling, storage and use of chemicals should be made available to all chemical users for proper management of chemicals.
ii) There is a need to strengthen co-ordination among the different institutions.
iii) The establishment of sections within the CGCLA and NEMC responsible for management of chemicals has been advocated.
iv) For Tanzania to benefit more from its international linkages,
v) There should be a centrally co-ordinated format/system for implementation of activities such as an effective environmental policy.
vi) Information for implementation of various agreements/treaties should be made available to stake holders for suggestion/comments before the treaties/conventions are ratified.
vii) Professional experts should be involved in reviewing treaties/ conventions for national interest.
viii) National priorities for the sound management of chemicals be established and adhered to during international/bilateral discussions.
ix) Establish a central information system on all matters pertaining to the sound management of chemicals including ongoing and completed projects related to chemical management should be established.

NATIONAL PROFILE TO ASSESS THE NATIONAL INFRASTRUCTURE FOR MANAGING CHEMICALS

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PREFACE

The National Profile for Assessing National Infrastructure for Managing Chemicals has been prepared through which involved all interested parties at country level. It also conforms to the guidelines as set out by the Inter-organization Programme for the Management of Chemicals, IOMC which is a cooperative agreement among UNEP, ILO, UNIDO, FAO, WHO, UNITAR and OECD.

A good understanding of the current national control practices related to all stages of the chemical life cycle from production/import through disposal is a key to any national programme to strengthen the management of chemicals.

The National infrastructure document the existing national infrastructure both for general aspects of chemicals management e.g. information on existing legislation, ministerial responsibilities, etc. and for specific aspects of chemical management e.g. pesticide registration, occupational health, transport of dangerous substances, available analytical equipment, etc.

The National Profile also provides practical information on on-going and planned activities in the country related to International agreement, ongoing and planned technical assistance projects, etc.

By the fact that this document details the national infrastructure, it becomes easy to identify gaps and weaknesses be it in the existing legal, institutional, administrative, and technical infrastructure related to chemicals management an safety.

The National Profile provides a means for improving co-ordination among all interested governmental, and non-governmental organizations, it provides a means for sharing information and other resources, and a means of bridging any communication problems between policy makers and technical staff.

The National Profile provides a basis for cost-effective allocation of resources by including information on resources available for the management of chemicals, including financial resources and human skill/capabilities, aw well as an indication of resources needed for undertaking priority actions. It is a "living" document, useful to many different parties on a regular basis. I am thus encouraging you all to use it widely.

To remain valuable, The National Profile should be reviewed periodically to determine when updating is needed. Some information will have to be updated only every few years when there is a significant development, other information, such as import statistics, could be updated annually. Users and all interested parties are welcome to provide feedback and indications of update requirement.

I take pleasure to thank all those individuals and institutions that facilitated or participated in the development of these guidelines

Anna Abdallah, Hon MP, Minister for Health
August 2002

Chapter 1

National Background Information

1.1 Physical And Demographic Context

Tanzania is situated in East Africa, just south of the equator; it has it's eastern border on the Indian Ocean while it also has frontiers to: Kenya and Uganda on the north, Mozambique and Malawi on the south, Zambia, Zaire, Rwanda, Burundi on the west, see Fig. 1.1 below. The total land area is 945,200 sq. km. The country constitutes of mainland Tanzania and the Islands (Pemba & Unguja) forming the United Republic of Tanzania. Tanzania follows a multiparty democracy with an elected Executive President.

Fig. 1: Tanzania- National and Regional Boundaries

Population: The 1988 census estimated the population to be 23.1 million (22.5million in the mainland and 0.6 m. in the islands). By 1999 Tanzania total population was estimated to be 31.8 million, 30.8 million residing on the mainland and 0.9 million on the Islands of Zanzibar (Planning

Commission 2000). This reflects an annual increase of 2.8%. The planned 2000 national census did not take place.

Population policy: Tanzania has developed a population policy, whose objective is to reinforce national development.

Specific goals of the policy are to:

- fully integrate population factors into economic planning;
- achieve a lower population growth rate;
- improve the health and welfare of the population;
- promote harmonious relations between rural, urban and regional development;
- promote equality of rights, opportunities and treatment of all nationals, with special attention to improving the status of women; and
- protect the environment

Age composition: The current structure of the population indicates a large proportion of children. About 47% of the population are below 15 years old (Source: Planning Commission, 2000).

Urban population: Tanzania's population is primarily rural with about 75% of all Tanzanians living in rural areas (HBS 1991/92). The urban population grows more rapidly than the overall population; the average annual growth of urban districts from 1978 to 1988 was 4.1%. Currently the urban population growth is put at 7.8%. Urban growth is attributed to high urban birth rates as well as migration from the countryside.

Working population: The size of the working population (Labour Force) is estimated at 16,006,178 (Source: Planning Commission, 2000) .

Language: The official languages are Kiswahili and English, while the national language is Kiswahili. There are more than 120 ethnic tribes scattered all over Tanzania thus difficult to map.

Literacy: The literacy rate (age 13 and above) was estimated at 84% in 1992 (Source: Ministry of Education and Culture Basic Education Statistics (BEST). The average education level of the population is primary (Basic) education.

Role of agriculture in the economy: Agriculture contributes above 55% of the Gross domestic product (Source: Planning Commission, 1996). The number of holdings during the agricultural year 1994/95 was estimated to be 3,873,000.

Employment in industrial sector: The number of employees in the industrial sector for the year 1999 was 144,538, compared to 137,014 for the year 1998. Most of them were employed in production of consumer goods (67.1%).

Unemployment rate: With increasing numbers of unemployed tertiary education graduands, it is now being recognised that there is unemployment in Tanzania, though the number is not known.

Percentage of Women employed outside home: There is no official statistics on this group. However judging from the percentage population of women in the tertiary level institutions the working women will not exceed 20% of the workforce.

Role of women in Agriculture: Of the 8,743,000 people engaged in fulltime agriculture (age 10 years and above), 53% are women.

1.2 Political/Geographic Structure

Tanzania is divided into 25 administrative regions (20 regions on the mainland and 5 on the island). The

regions are subdivided into districts, which are headed by Regional and District Commissioners, respectively. Under the district commissioner there are Local Governments which are administering development activities within the district. The Local Government Commissioner in the Prime Ministers Office administers all matters pertaining to local governments.

1.2.1 Local government entities:

Urban Authorities: These include city council, municipal council and town council.

Rural Authorities: These include district council, township authority and village council.

1.2.2 Division of Responsibilities

The responsibility for health and environmental protection is shared between the central government and the local authorities. The central government undertakes all matters of policy making, training and funding, while the local governments are implementers of the policies. They also facilitate people's participation in implementing the policies by issuing regulation and by-laws under relevant Acts of parliament.

1.3 Industrial And Agricultural Sectors

Tables *1.A – 1F* summarizes the relative importance of the two primary sectors of the economy, i.e. the industrial sector (which include manufacturing and other production facilities) and the agricultural sector.

Table 1.A: Overview of the Industrial and Agricultural Sectors

Sector	Contribution To Gross Domestic Product (%)	Major Products
Industrial/manufacturing Sector	7.3	Chemical, cement, steel, paper
Mining and extraction	1	Gold, diamonds, precious stones
Agriculture	>55	Food crops: maize, rice, wheat, millet, beans, cassava, bananas, yarns Cash crops: cotton, tea, tobacco, coffee, cloves, coconuts
Others*	≤ 37.7	

* The remaining is a contribution from tourism, fisheries, animal products, informal sector etc.
Source: Bureau of Statistics, 1995

Table 1.B: Production (Tons) and Average Yield by Type of Crop (Five Main Crops) and by Region

Region	Maize (1)	Maize (2)	Paddy (1)	Paddy (2)	Sorghum (1)	Sorghum (2)	Bulrish Millet (1)	Bulrish Millet (2)	Beans (1)	Beans (2)
Dodoma	139456	1476	-	-	103130	1008	138111	1373	1098	367
Arusha	156015	2034	10677	5328	17843	2013	-	-	19094	573
Kilimanjaro	81933	1921	3284	1563	-	-	-	-	4765	440
Tanga	78912	1293	5672	1396	-	-	-	-	1576	248
Morogoro	69916	2183	78127	1370	2793	1423	-	-	2119	815
Pwani/Dsm	5061	2540	3339	1364	-	-	-	-	-	-
Lindi	26833	882	12260	957	40721	1332	-	-	-	-
Mtwara	48766	1653	20274	1955	4830	1171	-	-	-	-
Ruvuma	202557	1859	26732	1664	287	459	-	-	7333	516
Iringa	266027	1785	-	-	8655	2360	-	-	20678	613
Mbeya	286276	3061	102146	3551	2685	959	-	-	12527	572
Singida	121869	1854	1612	2339	70722	948	51356	1081	-	-
Tabora	186040	1249	8536	726	22349	973	10400	757	1423	190
Rukwa	136348	1917	7941	2529	411	590	-	-	46373	986
Kigoma	-	-	-	-	3095	1547	-	-	6282	335
Shinyanga	479284	1504	75807	2298	114056	1005	15677	447	-	-
Kagera	3650	2370	4403	1366	9837	1149	629	1072	17894	907
Mwanza	17850	2249	104140	1489	785	1198	5214	513	-	-
Mara	55865	1663	12444	731	13216	1127	-	-	1513	787

(1) Production (Tons), (2) Average Yield per hectare

Source: Bureau of Statistics. *(Year 1995)*

Table 1.C: Production of cash crops (000) tons

Crop	1994/95	1995/96	1996/97	1997/98	1998/99
Coffee	43989	55000	34117	38000	42700
Cotton	126094	251171	253300	208200	105400
Sisal	34498	38000	20542	15300	24000
Tea	16572	23000	19767	26200	25000
Cashewnut	60000	81729	65100	99000	110000
Tobacco	22110	28370	35400	52000	37800
Pyrethrum	314	1500	400	400	1000
Sugar	104624	116810	116100	111040	116930

Source: Ministry of Agriculture and *Food Security - Update*

Table 1.D: Production of food crops (000) tons

Crop	1994/95	1995/96	1996/97	1997/98	1998/99
Maize	2567	2663	2387	2685	2805
Rice	262	339	235	788	865
Wheat	75	84	79	53	69
Millet/sorghum	665	629	655	702	743
Cassava	1992	1498	1426	2048	2209
Beans	166	196	147	506	570

Source: Ministry of Agriculture and Co-operatives

Structure of the Manufacturing/ Agricultural Sector

Information on a breakdown showing number of, and sizes of different enterprises in agricultural sector is not available. However, generally speaking, Tanzania's agricultural sector is characterised by small peasants and the industrial sector is characterised by small to medium scale industries.

Table 1.E: Types of Industries and Trend of Employment (Source: Bureau of Statistics, 1995)

Type Of Industry*	1991	1992	1993
	EMPLOYEES		
Food	37661	36687	36725
Drinks	6829	6506	6513
Tobacco and Cigarettes	1361	5119	5124
Weaving & tailoring	30624	34322	34358
Leather & leather goods	842	895	896
Glue	314	2802	2805
Wood/wooden goods	3987	4883	4888
Wooden furniture	2600	2159	2161
Paper, printing	8758	7522	7530
Oil refining, chemical	11081	4964	4970
Rubber goods	962	876	877
Plastic goods	472	784	785
Minerals (non-steel)	3601	4162	4166
Steel & steel goods	5683	6173	6179
Machinery and equipment	3056	3618	3622
Transportation	2916	3017	3020
Others	1127	1167	1168

* Industry: any registered establishment engaging 10 or more persons (ISIC)
Source: Bureau of Statistics, *1995*

Table 1.F: Industries: Number Of Industries and Employees by Region

Region	Year 1991 Industries	Year 1991 Employees	Year 1992 Industries	Year 1992 Employees	Year 1993 Industries	Year 1992 Employees
Dodoma	13	807	13	781	13	781
Arusha	87	10136	86	10276	85	10287
Kilimanjaro	71	15396	70	15841	69	15857
Tanga	61	11875	60	12248	59	12261
Morogoro	36	14714	35	15133	35	15148
Pwani	5	1830	5	1892	5	1894
Dar es Salaam	275	35867	271	36515	268	36553
Lindi	5	88	5	81	5	81
Mtwara	7	140	7	92	7	92
Ruvuma	20	793	20	672	20	673
Iringa	46	13219	45	13502	45	13516
Mbeya	35	3604	34	3373	35	3376
Singida	10	346	10	343	10	343
Tabora	20	1663	20	1433	20	1434
Rukwa	1	7	1	17	1	17
Kigoma	8	138	8	130	8	131
Shinyanga	30	3180	30	3261	28	3265
Kagera	27	1270	27	1169	26	1170
Mwanza	63	6985	62	6987	61	6994
Mara	23	1926	23	1910	22	912
Zanzibar (5 regions)	7	3000	9	3400	15	6000

Source: Bureau of Statistics 1995 - *Update*

Basing on the number of industries per region it may be seen that Dar es Salaam, Arusha, Kilimanjaro, Mwanza, Tanga, Iringa, Morogoro and Mbeya, in that order, are more likely to experience major problems related to chemicals.

1.3.1 Parastatal reform

In 1999 (*update to 2001*) the Government continued with implementation of the Parastatal Reform Programme. Until the end of 1999, 295 out of 395 companies had been reformed this being equivalent to 74% of implementation, see table 1.E

Table 1.G: Privatised companies 1995-2000

Year	Number
1995/96	43
1996/97	40
1997/98	38
1998/99	29
1999/00	13

1.4 Industrial Employment by Major Economic Sectors

Table 1.H shows relative importance of different industries that may have implications for the safe management of chemicals.

Table 1.H: Industrial Employment by Major Economic Sectors

ISIC Code	Description	No Of Facilities	Total Employment	Output Value* (1993) M.Tshs.	Major Emission Type
311 - 2	Food Industry		36725	31514	– Food preservatives – Cleansing Chemicals – Gas pollution from combustion of fuels
313	Drinks		6513	11187	– Same as above
314	Tobacco & Cigarettes		5124	575	– -Odours
321-2	Textiles		34358	26841	– Dyes – Halogenated solvents – Bleaching agents
323	Leather/leather goods		896	572	– Chromium salts – Colours/ Pigment – Inorganic waste waters
331	Wood/wooden goods		4888	3428	– Wood preservatives
332	Wooden furniture		2161	2325	– Paints/varnishes
341,2	Paper, printing		7530	19180	– Inorganic chemical waste – Ink
351, 2, 3	Oil refining, chemicals		4970	17223	– Non halogenated organic residue
355	Rubber goods		877	6253	
356	Plastic goods		785	1197	– Halogenated organic residue
361, 2, 9	Minerals (non-steel)		4166	17787	– Scrap plastics
371, 2, 381	Steel/steel goods		6179	24764	– Scrap metals
382, 3	Fabrication of machinery & equipment		3622	6983	– Scrap metals
384	Transport		3020	10545	– NO_X, SO_X, CO_X – Used oil – Oily waste
385, 390	Others		1168	861	
Total			125787	181366	

Source: Bureau of Statistics, 1995 (*update to 2001*); * temporary Statistics, x = 1, 2, 3 etc.

Table 1.I shows the production of some of the major industrial goods over the last 10 years.

Table 1.I: Production of industrial goods

Type of product	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Difference % 1998-99
Canned beef	000 tons	26	12									
Biscuits	tons	1141	739	497	378	241	246	71	288	805	611	-24.1
Wheat four	tons	12140	2940	15999	7544	11565	11612	33998	77598	87669	144693	65.0
Sprits	tons	1203	1505	1879	1882	1966	2011	1832	1849	1994	1630	-18.3
Bear	000 litres	45044	49899	49394	57061	56842	89301	125074	148340	170700	167478	-1.9
Chibuku	000 litres	13832	15458	13258	14774	10698	11319	14031	13680	11993	12392	3.3
Cigarettes	million	3742	3816	3789	3892	3383	3699	3733	4710	3933	3371	-14.3
Textiles	000 m^2	63279	62820	73195	60316	51357	31201	33178	41706	45546	49757	9.2
Sisal products	tons	20208	18367	21807	24800	21306	17323	11178	4919	4329	3253	-24.9
Fishing nets	tons	152	146	96	93	123	108	125	70	35	24	-31.4
Carpets	000 m^2	37	28	22	3	17	13	17				
Wooden goods	M^2	1525	1642	1162	673	486	283	315	115		1953	100.0
Pyrethrum pesticide	tons	40	54	49	35	24	21	11	3	9	17	88.9
Fertilise	tons	1742	20620									
Paints	000 litres	2199	3321	2375	2129	2016	3228	5205	4986	4943	12903	161.0
Petroleum products	000 tons	337	337	357	348	340	398	336	313	312	287	-8.0
Cement	000 tons	664	1023	677	749	686	739	726	621	778	833	7.1
Steel	tons	9000	7560	6100	7110	7003	2518	7733	12498	9522	9482	-0.4
Iron sheets	tons	21721	23398	24761	25872	22948	18142	6422	15218	14918	23028	54.4
Aluminium	tons	2537	2568	2845	3245	2659	1158	360	117	180	187	3.9
Radio	000 numbers	71	102	108	95	55	76	56	56	15		
Battery	million	21	44	47	53	57	59	66	43	46	43	6.5

Need to cross the units in column 2 and update the figures accordingly

Chapter 2
Chemical Production, Import, Export and Use

2.1 Introduction

Tanzania has liberalised both local and international trade and this has resulted in an increase in flow of goods into and out of the country. Industrial activities have increased as depicted by an increase in the consumption of chemicals. The production of chemicals, however, for local use or export is still minimal. Most chemical needs of industry and other manufacturing entities are still met through imports. Applications for importation of chemicals into Tanzania are channelled through different competent bodies such as Bank of Tanzania, Ministry of Industries and Trade, Tropical Pesticide Research Institute and Pharmacy Board. At present there are no separate provisions with respect to registration or special permits for importation of chemicals from the relevant authorities.

Pesticides and radioactive materials, however, have to undergo registration and licensing according to the requirement of Act No. 18 of 1979 and Act No. 5 of 1983, which established Tropical Pesticide Research Institute (TPRI) and National Radiation Commission, respectively. Pesticides have to be scrutinised and tested scientifically prior to granting registration.

This chapter therefore provides basic information on imports, export, production and use of chemicals in Tanzania. However, due to the ongoing privatisation exercise reliable data on chemical use, production, import and export is not available.

2.1 Chemical production and Trade.

Table 2A gives an overview of chemicals produced, exported and imported in the country.

Table 2.A: Type of chemicals produced, exported and imported in the country.

Chemical type by category	Production Manufacturing Tons/year/value	Imports (1) Tons/year	Imports (1) Value TSh.	Formulation Packaging	Export Tons/year/value
Pesticides (agricultural, public health & consumer use) • Pyrethrum	71. 3*	81,508.42 -	1,029,144,643 -	Powder (2) 680,000 tons, Liquid 1,841,000 L -	-
Fertilisers		45,673.86	6.683,704,871		Phosphate (3)
Petroleum products	177,000*	12,918,628ltr 92,064 tons	894,356,020 369,574,932		615,714
Industrial (used in Manufacturing/ Processing facilities)		210,251.03	4,477,282,656		
Consumer chemicals		22,247.57	543,369,329		
Other chemicals (Unknown/mixed use) • Paints • Dry cells	9,034,000 L * 39,000,000 pcs*	5.16	38,042,289		

(1) The term chemicals in table 2.A mean the basic chemicals and chemical products. Photographic or cinematographic goods, matches, pharmaceuticals have not been included here. Source: Customs Department, Jan - Oct 1996
(2), (3), Source: Planning Commission; * Indicates data of 2001

2.2 Chemical Use by Category

Table 2.B: Chemical Use by Categories

Type of chemicals	Number of tons used per year inn the country
Pesticides- Agricultural, Public Health, Consumer use(1)	Liquid 1,841, 000 L Powder 680,000 T
Fertilisers (1)	6131. 64 T (1998)
Petroleum products	
Ozone Depleting Substances (2)	264.05 T
Consumer chemicals	
Other chemicals unknown/mixed use	
Total	

(1) Source: Planning Commission 1995, (2) Source: Division of Environment 1996

2.3 Chemical Waste

In principal, Tanzania does not import or export chemical wastes for processing or disposal purposes. However, there are substantial amount of obsolete chemicals especially pesticides which need to be disposed of.

In 1997 – 1998, NEMC in collaboration with various national organisations and the financial support from the Dutch Government completed an inventory of obsolete pesticides and veterinary chemical waste. NEMC is currently seeking for a technical and financial support from FAO and international community to transport and dispose the obsolete pesticide and veterinary drugs amounting to 1200 metric tonnes.

2.4 Comments/Analysis

- At present there are no sufficient data on Chemicals Management. Therefore there is an urgent need to carry out a nation-wide survey to establish data on chemicals imports, exports and use.
- The record keeping on chemicals production, import, export and use are poor. Consolidated efforts should be made to establish proper record keeping system on Chemicals Management.

Chapter 3

Priority Concerns Related to Chemical Production, Import, Export, Trade and Use

This Chapter provides an overview of the nature of problems associated with chemical production, trade and use and, to the extent known, the chemicals or the categories of chemicals, which are causing the concerns. The information contained in this chapter is based on the existing inventories, as obtained in the year 2002.

3.2. Priority Concerns Related to Chemicals Production, Import, Export, Trade and Use

Tables 3.A and 3.B show and prioritise problems related to chemicals production, import, export, trade and use. However, it is worth mentioning that due to lack of statistical data it is still difficult to prioritise the problems objectively.

Table 3.A: Description of Problem Areas

Pesticides

Nature of problem	City/region	Brief description of problem	Chemical(s)/ pollutants(s)
Pollution of inland waterways and water bodies	Countrywide	– Excess use of pesticides – Use of restricted chemicals – Loss during formulation – Residue of pesticides – Use of pesticide in illegal fishing – Direct discharge of pesticides and wastes into water bodies – Spillages – Disposal of contaminated empty pesticide containers	1. Cymbush 2.5 ULV (Cypermethrin) 2. Dusban 2E (Chlorpyrifons) 3. Karate 2ED (Lambda Cyhalothrin) 4. Ripcord 1.8 ULV (Cypemethrin) 5. Salafrotin 50 EC (Propetanphos) 6. Sumicidin 3% ULV (Fenvalerate) 7. Thiodan (Endosulfan) 8. Restricted chemicals such as Dieldrin, DDT and Ethylene Dibromide are still in use 9. Others which are used in small quantities 10. Organophosphates 11. Herbicides
Marine pollution	Countrywide	– Major waterways discharge in ocean – Use of pesticide in illegal fishing	same as above
Soil contamination	Countrywide	– During formulation/production – During Transportation – During application – Disposal of excess and/or obsolete chemicals – Pesticide residues	same as above plus sulphur dust used in cashewnut farming
Occupational Health: Agriculture, Public health	Countrywide	– Lack of awareness of the potential dangers of chemicals – Lack of knowledge on proper storage facilities, handling, use and disposal of chemicals – Lack of storage facilities – Lack of information – Lack of safety gears	same as above
Ground water pollution	Countrywide	– Infiltration of contaminated water	Same as above
Drinking water, pollution	Countrywide	– Most waterways and water bodies are sources of drinking water. – No water treatment in villages where the majority live and inadequate treatment in towns.	Same as above

Nature of problem	City/region	Brief description of problem	Chemical(s)/ pollutants(s)
		– Extent of drinking water pollution is not known	
Air pollution	Region growing wheat and rice, countrywide Domestic spraying of pesticides	– Aerial spraying of pesticides – Formulation/production	Same as above and Phosphine
Pesticide residue in food and animal feeds	Countrywide	– Improper post harvest handling. – Extent of food contamination not known – Illegal fishing	
Hazardous waste treatment/ disposal	Countrywide	– Lack of proper disposal facilities. – Lack of policy/guidelines – Lack of legislation on hazardous waste disposal. – Lack of awareness.	Same as above
Storage and disposal of obsolete pesticides	Countrywide	– Importation of more pesticides than needed. – Importation of expired chemicals – Obsolete and/or expired gifts. – Inadequate logistic distribution of pesticides. – Lack of proper disposal facilities. – Lack of statistics on demand. – Lack of proper authorisation of dealers in pesticides. – Improper storage facilities. – Lack of guidelines on chemical storage.	same as above
Unknown and unclaimed pesticides	Countrywide	– Pesticide varieties are too many and thus difficult to monitor/ control. – Pesticides of unknown composition/properties. – Locally re-packed and unlabelled pesticides. – Lack of quality control/guidelines on packaging. – Trade names disguising the health and environmental impact of the chemical. – Weak monitoring – Weak enforcement.	Same as above
Pesticide poisoning	Countrywide	– Poor storage and handling of chemicals hence	Same as above

Nature of problem	City/region	Brief description of problem	Chemical(s)/ pollutants(s)
		easy access. – Use of pesticides in illegal fishing. – Lack of guidance on appropriate rate of application and concentration. – Non- availability /use of protective gear. – Use of pesticides containers to store foods and drinks. – Use of food containers to store pesticides. – Packaging in big containers leading to decanting/repackaging and exposure – Ignorance and lack of awareness.	
Use of toxic and persistent organic pesticides	Countrywide	– Inadequate control of restricted products. – Use of restricted and banned pesticides.	1) Heptachlor 2) Chlordane 3) Aldrin 4) EDB 5) DDT 6) Toxaphene 7) Hexachlorobenzene 8) Endrin

Industrial and Consumer Chemicals

Nature of problem	City/town	Brief description of problem	Chemical(s)/ pollutants(s)
Pollution of inland waterways and water bodies	Most urban centres such as Dar es Salaam, Arusha, Mwanza, Mbeya, Morogoro and Moshi	– Discharge of untreated or semi-treated effluents – Spillage of chemicals. – Use of dynamite in illegal fishing. – Poor storage. – Improper disposal of chemicals with other municipal solid waste – Improper discharge of wastes oils from vehicles	Industrial Chemicals including : 1) Acid and acid substances 2) Alkaline and alkaline substances 3) Solvents 4) Petroleum products 5) Non-metallic inorganic solution. 6) Explosives. 7) Metallic inorganic salts, and solutions 8) Pharmaceuticals 9) Food additives 10) Radioactive substances

Nature of problem	City/town	Brief description of problem	Chemical(s)/ pollutants(s)
			11) Heavy metals 12) PCBs 13) Paints 14) Detergents 15) Disinfectants 16) Cosmetics 17) Bleaching agents
Marine pollution	Dar es Salaam, Mwanza, Musoma, Kigoma, Bukoba, Tanga	– Major waterways and warterbodies discharge in to ocean. – Improper discharge of oily waters from vehicles – Use of dynamite in fishing	same as above
Soil contamination	Countrywide	– During formulation – During Transportation – During production, distribution and use – Disposal of excess and/or obsolete chemicals. – Contaminated wastewaters. – Particulate matters (contaminated with noxious substances such as lead) from vehicles – Contaminated waste waters – Purification and Processing	same as above plus mercury in small mining areas
Ground water pollution	Countrywide	– Infiltration of contaminated water	Same as above
Drinking water pollution	Countrywide	– Most waterways/water bodies are the sources of drinking water. – No wastewater treatment in most industries. – Poor location of industries (i.e. not following master plans, not segregating industries) – Extent of drinking water pollution is not known	Same as above
Occupational Health:	Countrywide	– Lack of awareness among shopfloor	same as above

Nature of problem	City/town	Brief description of problem	Chemical(s)/ pollutants(s)
Industrial and Public Health		workers on the potential dangers of chemicals – Lack of knowledge on proper handling, use and disposal of chemicals – Inadequate protective gears – Non - enforcement of safe operation by management – Lack of code of practice. – Lack of regular medical check up. – Use of skin toning chemicals. – Use of illicit skin toning chemicals.	
Air pollution	Same as above	– Through smokestacks. – Car exhaust. – Refrigeration and air conditioning servicing workshops. – Welding workshops. – Dumpsites. – Garages spraying paints. – Cleaning facilities. – Exhaust from production processes. – Recovery of gold from amalgam-mercury	Lead, phosphorous, particulates, CFCs, COx, SOx, NOx, disinfectants, detergents chemicals, Mercury, Cyanide, Bleaching agents, air fresheners.
Chemical residue in food	Countrywide	– Contamination of vegetables by car exhaust. – Use of wastewater for irrigating. – Urban agriculture in general. – Veterinary medicaments to animals. – Unknown extent of contamination. – Excessive use of food additives – Use of inorganic fertilizers – Improper post harvest handling	Lead, Nitrates, ammonium, veterinary drugs
Hazardous waste treatment/ disposal	Urban areas	– Lack of appropriate waste disposal facilities.	All chemicals and chemical wastes

Nature of problem	City/town	Brief description of problem	Chemical(s)/ pollutants(s)
		– Lack of policy/guidelines – Lack of legislation on hazardous waste management. - Lack of awareness.	
Storage and disposal of obsolete chemicals	Countrywide	– Importation of more chemicals than needed. – Lack of appropriate disposal facilities. – Acceptance of donations of short shelf life. – Weakness in monitoring and control of chemicals. – Lack of enforcement – Importation of banned and low quality chemicals	Industrial and consumer chemicals
Unknown and unclaimed chemicals	Countrywide	– Lack of competent personnel to advise on use, safety, hazards etc. – Lack of knowledge on environmental impacts of particular chemicals. – Unethical practices – Lack of enforcement.	same as above
Chemical poisoning	Same as above	– Poor storage and handling of chemicals thence easy access – Lack of guidance on appropriate use. – Non- availability /use of protective gear. – Ignorance – Use of chemical containers to store food and drinks. – Use of food and drinks containers to store chemicals.	same as above Poisons metals all chemicals used in research and laboratories
Use of persistent organic pollutant	Same as above	– Inadequate regulations/control of restricted products	POPs, petroleum, lead

Table 3.B: Priority Concerns Related to 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	Aerosols + dusts	3
Pollution of Inland Waterways and waterbodies	National	High	Low	Insufficient	Chemicals listed under Table 3.a	1
Marine Pollution	Regional	Medium	Low	Insufficient	Same as above	3
Ground-water Pollution	National	Medium	Low	Insufficient	Same as above	3
Soil Contamination	National	High	Low	Insufficient	Same as above	2
Pesticide residues in Food	National	High	Minimum	Insufficient	Same as above	2
Drinking Water Contamination	National	High	Low	Insufficient	Same as above	2
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	National	High	Low	Insufficient	Same as above	1
Pesticides Poisoning/ Suicides	National	High	Low	Insufficient	Same as above	1
Persistent Organic Pesticides	National	High	Medium	Insufficient	Same as above	1
Others						

Industrial and Consumer 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	Regional	Medium	Medium	Insufficient	Chemicals listed under Table 3.A	2
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	4
Soil Contamination	Regional	Medium	Medium	Insufficient	Same as above	2
Chemical Residues in Food	National	Medium	Medium	Insufficient	Same as above	3
Drinking Water Contamination	National	Medium	Medium	Insufficient	Same as above	2
Hazardous Waste Treatment/ Disposal	Regional	High	Low	Insufficient	Same as above	1
Occupational Health: Industrial	Local	High	Low	Insufficient	Same as above	1
Public Health	Regional	Medium	Low	Insufficient	Same as above	3
Chemical Accidents: Transport	Local	Medium	Low	Insufficient	Same as above	3
Unknown Chemical Imports	National	Medium	Medium	Insufficient	Same as above	3
Storage/ Disposal of Obsolete Chemicals	National	Medium	Medium	Insufficient	Same as above	2
Chemical Poisoning/ Suicides	Local	Medium	Low	Insufficient	Same as above	3
Persistent Organic Pollutants	Regional	Medium	Medium	Insufficient	Same as above	2
Others						

Ranking 1 = most severe, 2 = second more severe etc.

3.2 Comments / Analysis

1) It can be concluded that the information which is available is not sufficient enough to accurately indicate the magnitude of problems of chemical management in Tanzania. This is due to the following reasons:

   i) Most of the available information is not readily accessible
   ii) Lack of data on industrial and consumer chemicals
   iii) Non-availability of data on actual needs and actual supply
   iv) Insufficient information of stocks.
   v) Scanty data and information on obsolete chemicals and disposal of chemical wastes.
   vi) Absence of a register of importers and distributors of chemicals.

2) Pesticides problems seem to be concentrated in rural areas, since most pesticides are crop specific and therefore used in specific regions/zones. Likewise urban centres are prone to industrial chemical pollution.
3) It has been noted that air pollution is on the increase mostly in urban areas due to increased number of motor vehicles and the continual use of leaded petrol is a concern. Also, the issue of particulate matter and industrial fumes also needs to be addressed adequately and dusts.
4) Compartmentalisation of licensing of chemicals dealers (e.g. TPRI for pesticides, Pharmacy Board for pharmaceuticals), leave room for other chemicals to be imported unregistered. This calls for a need for having a national register of all chemicals, having in place legislation on industrial and consumer chemicals would also help.
5) There is a need to generate a more data on exposure level.

Chapter 4

Legal Instruments and Non Regulatory Mechanisms for Managing Chemicals

Tanzania mainland has no policy on management of chemicals but it has several legal instruments, which address environment management in some manner. However, most of these legal instruments are outdated, not easy to enforce and the penalties are minimal. The existing legal instruments are sectoral, it is likely that therefore, that any review of these existing legal instruments and the enacting of new ones will also remain sectoral, this is in conformity with the current development policy of the country which is sectoral based. This therefore calls for efforts to harmonise inter-sectoral coordination and collaboration.

On the other hand, the Zanzibar chemical management profile indicate that there is a National Environmental Policy since 1992, which has provisions to control chemicals.

This chapter provides an overview of existing legal instruments and the recommendations for the enactment of new legislations to improve mechanisms for managing chemicals and chemical wastes. The text highlights the strength and weaknesses of the existing legal instruments and regulatory bodies.

4.1 Overview of National Legal Instruments, Which Address the Management of Chemicals

Table 4.A provides a list of all legal instruments relevant to the management of chemicals. The table provides scope and objective of each instrument, ministry or body responsible for implementation and enforcement. It also provides relevant sections or articles as far as the management of chemicals is concerned.

Table 4.A1: References of existing Legal Instrument Which Address The Management of Chemicals

Legal instrument (Type Reference year)	Responsible Ministries or Body	Chemical use categories covered	Objective of Legislation	Relevant (1) sections	Resources Allocated	Enforcement/Ranking
The Pharmaceuticals and Poisons Act, 1978 (as amended by Act 1/81 No.9 of 1978)	Ministry of Health (Pharmacy Board)	1. Pharmaceuticals and pharmaceuticals products 2. Poisons (Chemicals present in the pharmaceutical products)	To control and regulate 1. Import/Export 2. Manufacture 3. Distribution 4. Sale 5. Use and 6. Registration of Pharmaceuticals, poisons/chemicals	Section 4, Act, 20, 23, 25, 26, 30, 33, 46, 58 etc.	Budget and manpower inadequate	Fair/ review of the law is in progress
The Factories Ordinance (Cap 297) as amended by Acts 13/91 and 6/94	Ministry of Labour OSHA (formally Factory Inspectorate)	1. Industrial chemicals 2. Occupational Health and safety at work (involving chemicals)	Protect Human Health from Hazards of occupational exposure	Part VII Sections 51, 52, 53, 54, 55 & 56	Resources are minimal • Monitoring facilities not sufficient. • Insufficient manpower.	Weak/ reviewed in progress
The Mining Act, 1998 (Act No. 5/98)	Ministry of Energy and Minerals (Minerals Resources Department)	1. (Chemicals used during gold processing) (various chemicals)?	To control and regulate all mining activities	All	Manpower sufficient	Fair
The Industry (Development) (Act No. 5 of 1979) Industrial Promotion and Development Fund (Establishment & Management) (Act. No. 11 of 1984)	Ministry of Energy and Minerals (Mineral resource department)	Various chemicals	Control of trading and dealing of Gemstones	All	Manpower sufficient	Fair
The Petroleum Exploration and Production) Act 1980 (No. 27 of 1980)	Ministry of Energy and Minerals	All Petroleum products including crude petroleum	Control and regulate 1. Production 2. Exploration of all petroleum 3. products		Manpower not sufficient	Fair

Legal instrument (Type Reference year)	Responsible Ministries or Body	Chemical use categories covered	Objective of Legislation	Relevant (1) sections	Resources Allocated	Enforcement/Ranking
Petroleum (Conservation) Act 1981 (No. 18 of 1981)	Ministry of Energy and Minerals	Petroleum & Petroleum products	To control and regulate import, export, sale, transport, distribution & use of petroleum all petroleum products.	PART II i.e. sections 4,5,6,7,8, 9, 10,11, 12	Manpower not sufficient	Fair
The Tropical Pesticide Research Institute Act. No. 18 of 1979.	Ministry of Agriculture and food security (TPRI)	Pesticides except plant protection substances.	1. Control & Regulate • Importation • Exportation • Formulation • Distribution • Transport use and disposal 2. Registration of pesticides. 3. Pesticide salers and pest controllers	- Section 5 4,5	Manpower sufficient budget insufficient	Fair
The Food (Control of Quality) Act., 1978 (No. 10 of 1978) as amended by Acts No. 4 of 1991, No. 11 of 1992 and No. 3 of 1995	Ministry of Health (National Food Control Commission)	Food Additives	To provide more efficient control of the manufacture, importation and sale of food with the primary aim:- 1) to improve food security. 2) avoid fraudulence in trade 3) to carry out fair trade	Section 16, (1) (2) (a) (b) (d)	• Manpower and budget insufficient	Fair
Explosives Act (1963)-Civil explosive Cap 538	Ministry of Energy and Minerals	Chemicals -Used in the explosives	to control and regulate;: manufacture • Import • Storage • Transport • Use	2, 3, 6, 7, 9, 10, 14, 18, 24, 26, 28, 35, 40, 50 & 56	Manpower sufficient budget insufficient	Fair
Drugs and Prevention of	Ministry of Home	Chemicals used in	• Control and	Cap 45	Funded by United	Fair needs

Legal instrument (Type Reference year)	Responsible Ministries or Body	Chemical use categories covered	Objective of Legislation	Relevant (1) sections	Resources Allocated	Enforcement/Ranking
illicit Drugs Act, 1995 (Act No. 9 of 1995) as amended by Acts No. 9 of 1996, No. 17 of 1996 and 31 of 1997	Affairs	Narcotics drugs	regulation of operations relating to drugs • Prevention of illicit drug traffic. • Forfeiture of property derived from or used in illicit trafficing drugs		Nation Drugs Control Programme (UNDCP), Germany England Governments • Manpower 40 not sufficient. • Funds not enough (Patrol & Inspection is not done in full capacity)	review
The Fisheries Act, 1970 (No. 6 of 1970) as amended by Act. No. 10 of 1994 and No. 29 of 1994	Ministry of Natural Resource and Tourism	Dynamite fishing and other chemicals used in fishing.	Control and prohibit use of explosives and other chemicals in fishing Prevent pollution of waters.	The fisheries general regulations 1973	Inadequate funds and manpower.	Has been reviewed and new legislations are in place
The Protection from Radiation Act, 1983 (No.5 of 1983) as amended by Act No. 12 of 1998	Ministry of Science and Technology and Higher Education (National Radiation Commission)	Radioactive materials, Radioactive emitting devices, all chemicals containing radiation emitting isotopes. e.g. Radiopharmaceuticals	Control of the use of radioactive materials radiation devices -other matters related to the protection of persons from harm resulting from ionising radiation	All including regulations	Budget insufficient manpower sufficient.	Fair
The Standards Act, 1975 (No. 3 of 1975) as amended by Act. No. 1 of 1977	Ministry of Industry and Trade	Industrial Chemicals Consumer Chemicals Pesticide & Fertilisers	Set and promote standardisation, industry, commerce other commodities.	Section 4	Insufficient Budget - and Manpower -	Fair
The Water Utilisation Act, 1974 (Control and Regulations) (No. 42 of 1974) amended by No. 10 of 1981,	Ministry of Water and Livestock Development(Dare es Salaam Water and Sewage Authority,	Chemicals used in water treatment (drinking purposes) Heavy metals and other pollutants in the effluent	Environment protection Prevention of water pollution	Section 6,17,18 B(3), 33(4)	Budget insufficient manpower	Weak

Legal instrument (Type Reference year)	Responsible Ministries or Body	Chemical use categories covered	Objective of Legislation	Relevant (1) sections	Resources Allocated	Enforcement/Ranking
No. 7 of 1981, No. 8 of 1997 and No. 1 of 1999	DAWASA)					
The Plant Protection Act, 13 of 1997	Ministry of Agriculture Food Security (Plant Protection Department and TPRI)	Plant Protection substances	To protect Farmers, Consumers & the Environment	All sections including regulations	Inadequate funds and insufficient manpower	Fair
Rufiji Basin Development Authority (RUBADA) 1975 (No. 5 of 1975)	Ministry of Finance (RUBADA)	All chemicals involved in Agricultural activities	• Regulate hydroelectric power, flood control, agricultural activities forestry, fishing promote tourism. • Minimise pollution of river, lake or dam		Insufficient manpower and budget	Weak
Plant Protection Act.1995 as amended by Act No.13 of 1997.						
The Penal Code (Cap 16) Acts 5/61, 23/61, 44/61, 60/61, 12/62, 61/62, C.A. 2/62, 15/63, 55/63, 16/64, 65/64, 2/65, 12/66, 24/66, 31/66, 65/66, 23/67, 50/68, 2/70, 5/71, 15/71, 26/71, 2/72, 13/72, 81/72, 23/73, GN. 222/71, GN 15/81, Acts 3/76, 11/83, 13/84, 7/85, 9/85, 12/87, 3/88, 10/89, 17/89, 1/90, 17/90, 19/92, 1/93, 3/95, 31/97, 4/98, 12/98	Ministry of Justices and Constitutional Affairs	All Chemicals	Penalties for those who violate	Section 179, 180, 181, 183, 184, 185	In adequate funds and insufficient manpower	Fair
The Merchant	Ministry of	- All chemicals involved in	• Prevent marine	Part III	Insufficient budget	Fair

Legal instrument (Type Reference year)	Responsible Ministries or Body	Chemical use categories covered	Objective of Legislation	Relevant (1) sections	Resources Allocated	Enforcement/Ranking
Shipping Act, 1967 (No. 43 of 1967) as amended by Act. 1969 (No. 41) Act. 1980 (No. 21)	Communication and Transport	marine activities. - Oil and oily mixtures	pollution • Control /conserve marine Environment	Section 309 (2)	and manpower	
The Local Government (Urban Authorities) Act, 1982 (No.8/82) The Local Government (District Authorities) Act, 1982 (No. 7/82, , 4/85, 8/85, 13/86, 13/88, 8/92, 4/93, 4/93, 15/93, 4/93, 15/94, 17/96, 6/99, 12/99, 14/99)	President's Office Regional and Administrative and Local Government (PORALG)	All chemicals involved in sanitary activities and building construction/ and all wastes generated.	• Control and regulate use, products of import/export of various chemicals, • Environmental standards • Maintain sanitation	-	Insufficient manpower and budget	Weak
National Environment Management Council Act, 1983 (No. 19 of 1983)	VPO (NEMC)	All chemical pollutants	Management of Environment	-	Manpower sufficient budget insufficient	Fair
The Township Ordinance	-	All chemicals	-	-	-	
The Fire and Rescue Services Act, 1985) (Act No. 3 of 1985	Ministry of Works	Chemicals used in Fire extinguishers fire retardants Automatic fire extinguishers	Management of fire accidents and control, rescue services, disasters prevention	-	-	Weak
The Township Ordinance CAP 101	Local Government	-	-	-	Insufficient manpower and budget	

1) "Cap" mean a chapter of our laws. (Ask Sengerema

2) Ordinance means and includes any ordinance or laws proclmations or other legislative acts assigned, made or done before the date of the Tanganyika Order in Council, 1920
(Ask Sengerema).

Table 4 A2: Proposed legislation/Draft Bills

Legal Instrument Type Reference Year	Responsible Ministry or Body	Chemical Use categories covered	Objective of legislation	Relevant Section	Resources	Comment /Status
1. The Industrial and Consumer Chemicals Management and Control Act.	Ministry of Health (Government Chemist Laboratory Agency)	Industrial and Consumer Chemical	To protect Health and Environment	All		Draft forum feeding for presentation to parliament
2.			Enhancement of public health services			
2. The OSHA (The Occupational Safety and Health Act)	Ministry of Labour	Industrial chemicals	Occupational safety and health	All		Draft form pending presentation to parliament.
4. TFDA, The Tanzania Food, Drug and Cosmetics Act.	Ministry of Health	Drugs Cosmetics and Food Activities	Regulate and Control of Food, Drug Herbal Medicine and Poisons	All		Draft Bill

4.2 Summary Description of Key Legal Instruments Relating to Management of Chemicals.

This section provides details of legal instruments which are considered of particular importance to the management of chemicals. There are several existing principal legislation governing chemicals in the country, some of these are: (a) The Tropical Pesticide Research Institute Act, 1979 (b) The Protection from Radiation Act 1983 (c) The Pharmaceutical and Poison Act, 1978 (d) The Factory Ordinance (Cap. 297). (e) The Drug and Prevention of Traffic of Illicit Drugs, 1995, Plant Protection Substance Act No.13 of 1997.

a) The Plant Protection Act 1997)

The Act empowers TPRI and PHS of its Ministry of Agriculture and Food Security to:

- Regulate/control all pesticides related activities such as registration, importation, formulation, distribution/transportation, labelling, packaging, safe handling, use, storage and disposal.
- Conduct pesticides residues analysis in foods, animal feed and in the environment.
- Certify pest controllers, pesticide retailers, fumigators and formulators.

Means of making legislation known to the general public

Brochures, Booklets including translated version (to National language).

- Pest Management (PM) courses on safe use and handling
- Publishing a List of Registered Pesticides in the Government Gazette.
- Seminars at border towns.
- Radio and TV Programmes.
- Bulletin/legal action against offenders

Administrative procedures:

Procedure for pesticides registration:

- Applicant fill in application forms, together with registration dossiers and samples for laboratory analysis and field testing for efficacy (application for pesticide registration)
- A written scientific report is subsequently submitted for consideration, to RPC, FRRT, PARTS and finally to NPPAC for approval before Gazetting.

Licensing of Pest Controllers, Retailers and Formulators

- They are required to fill the application forms
- Inspection of the premises, technical staffs, protective gears, types of pesticides to be sold, used, or formulated are ascertained before issuing license.

Mechanism of monitoring quality of pesticide and control of importation by issuing import permits:

- Effected by pesticides Inspectors by on the spot and routine inspection.
- Withdrawal of import permits, fines and prisons terms to non-compliance, are in practice.
- Registration dossiers and other related documents are kept under lock and key at the Registrar of Pesticide's office as a protection of proprietary information.

Existing data base

- Inventory of pest controllers, fumigators, pesticides retailers, pesticides formulators, importers, quantity and type of pesticide imported.
- Record on Pesticides Import Permits issued per year.
- List of Registered Pesticides.

b) The Protection from Radiation Act, 1983

The Act stipulates the control of the use of radioactive materials, radiation devices and for other matters related with the protection of persons from harm resulting from ionising radiation. It empowers the registrar to:

- Advise or provide information to the government on the proper use of ionising radiation in the light of current available knowledge, its possible hazardous effects and the methods necessary for enhancing the protection of the public from it etc.
- Control of the importation, movement and use of radioactive plants, installations and materials.(to be established).
- To consider applications for and grant of licenses to persons intending to import or use of atomic or other radioactive plants, installations or materials.
- To maintain a register or registers of importers, users and operators of nuclear or other radioactive plants, installation, apparatus or other radioactive materials.

Means of making legislation known to the general public

- Through mass media such as radio and newspapers.

Administrative procedures

All dealers in radioactive material have to be registered before they practice.

Mechanisms of monitoring implementation

- Inspections
- Licensing requirements.
- Personnel Radiation Monitoring Services.
- Quality Control checks devices
- Environmental radiation surveillance/monitoring activities

Existing data bases:

- Inventory of Radiation Users
- Inventory of Radiation Devices and Radioactive Materials
- Inventory of Spent Sources of Radioactive Materials

Protection of proprietary information: All documents related to Radiation licensing are kept under lock and key by the Registrar to protect proprietary information.

c) Pharmaceuticals and Poisons Act, 1978

This Act regulates and controls sell, manufacture and importation of pharmaceutical and pharmaceutical products. It empowers the Board to:

- Control registration, manufacturing, importation, exportation, distribution, transport, labelling, packaging, storage, sale and use of all pharmaceuticals and pharmaceutical products.
- Prohibition whenever required the misuse of products containing poisons listed in section 33 of the Act.

Means of making legislation known to the general public

- Pharmaceuticals Newsletter/Bulletins.
- Seminars and workshops for users of radioactive materials manufacturers of pharmaceuticals and transporting agents.
- Mass media and radio programmes.

Administrative procedures

- Conducting inspections on factories, industries and pharmacies
- Issuing permits of medical representative in handling samples and announcements.
- Approving imports and exports and manufacturing premises.
- Licensing of Pharmacists.
- Registration of Pharmacists.

Mechanism of monitoring implementation

- Effected by the Board through its secretariat which is made up of the following sections:
    - Drug inspection at all levels of distribution, manufacturing and promotion
    - Drug registration
    - Drug information
    - Drug surveillance
- Inspection of permits of pharmaceutical dealers (Pharmacists & Chemists).
- Institution of fines, penalties, prosecution procedures and withdrawal of permits from violators.
- Registration dossiers and other related documents are secured at the pharmacy Board.

Existing data bases

- List of Registered human and veterinary Pharmaceuticals.
- List of Registered Pharmacists.
- List of Poisons as per Section 33.
- The Poisons List (Declaration) (amendment) Order 1987.
- List of manufactures/factories/industrial premises

d) Factories Ordinance- Cap. 297

The Occupational Safety and Health Authority (OSHA) covers all chemicals handled by workers (industrial) and consumer chemicals, agricultural chemicals and pharmaceuticals. The role of OSHA is to ensure safe use and handling of chemicals, in the workplace. However, the OSHA is not mandated to cover chemicals imported by offices, hotels, schools, churches and farms.

Means of making legislation known to the general public

The legislation is publicised through:

- African Safety and Health newsletter;
- Tanzania safety and Health newsletter;
- Register of industries;
- Government Gazette;
- However, the factories' ordinance has not been fully translated into Kiswahili, except an abstract of the ordinance; and
- Section 61 instructs all employers to post the abstract and its regulations (both in English and Kiswahili) at the workplace.

Administrative procedures

- All factories have to receive a permit, registered with the OSHA before being operational.

Mechanism to monitor implementation

Inspection reports:

a) Penalties and Fines (negligible though, maximum T.Sh. 2000 ≅ US$ 3.5)
b) Section 9, 72, 73, 75, 77.
c) Shutdown the factory (section 44)
d) Shutdown of a process/work (section 43)
e) Through ad-hoc inspections

Existing databases

One database is in place on Workplace Information System (WINFO) at the FI, to ease the availability of safety and health information from/to factories. Relevant details of every factory occupier, trade/function location, chemicals used facilities available manpower is included.

Protection of Proprietary Information

Proprietary information is protected under section 86 of the factories' ordinance

(e) Drug and Prevention of Illicit Traffic in Drugs Act, 1995

The Act intends to control and regulate operations relating to Narcotic drugs and psychotropic substances or property derived from or used in illicit traffic in Narcotic and psychotropic substances. The police officers and Customs officials are responsible at national level to seize, search and arrest all suspects who have breached any law stipulated in the Act namely:

- Illegal possession, purchase and manufacture of narcotic and psychotropic substances. The ministry of home affairs and ministry of health are responsible for promoting and co-ordinating the Government policy on the control of the use of drugs and drug trafficking, which includes:
- Narcotic licensing requirements.
- Maintenance of accounts and search.
- Prevention of illicit traffic of narcotic and psychotropic substances.
- To implement the provisions of the internal communications on narcotic drugs and psychotropic substances.

Means of making legislation known to the general public

Police officers have the duty to educate the public on the effect of using narcotics and psychotropic substances. This is done through radio, television, newspapers and conducting seminars at different levels.

Administrative procedures

Control and regulate the cultivation, production, sale, purchase, transport and import into the United Republic of Tanzania, Export from the United Republic of Tanzania, use or consumption of coca leaves or opium.

Effectiveness

Enforcement of the legislation is not effective due to:

- Insufficient human and financial resources;
- Lack of adequate training to law enforcing agents, as far as drugs are concerned;
- Lack of transport and teaching aids; and
- Corruption - the business involves large amount of money.
- Most users and members of the general public are not aware of the potential hazardous effects of chemicals

4.3 Existing Legislation by Use Categories Addressing Various Stages of Chemicals from Production/Import Through Disposal

Table 4.B provides for a strategic overview of the legal instruments which regulate each stage of chemicals life cycle from import/manufacturing through disposal for each main use category of chemicals. It shows missing elements as well as existing strength and weaknesses.

Table 4 B: Overview of Legal Instruments for Management of Chemicals by Use Category

Category of chemicals	Import	Production	Storage	Transport	Distribution/ Marketing	Use/ handling	Disposal
Pesticides (Agricultural Public health And consumer use)	X	X	X	X	X	X	X
Fertilisers	-	-	-	-	-	-	-

Industrial Chemicals list in Manufacturing processing facilities	-	-	-	-	-	-	-
Petroleum products	X	X	X	X	X	X	X
Consumer Chemicals	-	-	-	-	-	-	-
Chemical waste	-	-	-	-	-	-	-
Pharmaceuticals	X	X	X	X	X	X	X
Radioactive materials & and products containing Radioactive	X	X	X	X	X	X	X

KEY: X indicates legislation in place
- indicates there is no legislation

4.4 Summary Description of the Key Approaches and Procedures for Chemical Control.

Tanzania currently uses regulatory mechanisms to control chemicals. Non- regulatory mechanisms such as voluntary and incentive schemes are non-existent. However, strict control applies to agrochemicals and pharmaceuticals. There is no legislation or policy on consumer and industrial chemicals.

Pesticides

As mentioned earlier TPRI is responsible for this category. The activities done by TPRI to regulate use of pesticides cover the whole life cycle i.e. importation, formulation, distribution, use safe handling and disposal. Other activities include:

- Pesticides registration,
- Licensing pest controllers-fumigators and pesticides retailers.
- Research - analysing pesticide residues in agricultural produce, environmental samples (waste, soil, flora, fauna etc.), human blood samples in areas of intensive pesticide use.
- Conducting Pest Management Courses to educate the public on the safe use and handling of pesticides.
- Pesticide inspection to monitor compliance with the legislation.

Enforcement of the TPRI Act and Plant Protection substance Act is not effective due to;

- Insufficient financial resource
- Lack of properly trained personnel.
- Lack of registrations schemes.
- Inadequate multisectoral collaboration/co-ordination.

Pesticides registration procedure:

Application forms, registration dossiers, and samples (for quality and field testing) are submitted to the Registrar of Pesticides for Scientific analysis or field testing. Scientist (quality analysis and efficacy field testing)

Scientific reports are first submitted to the registrar who forward it to the Field Review Task Force (FTTF) where they are scrutinised before being submitted to the Pesticide Approval and Registration Technical Subcommittee (PARTS).

The PARTS further reviews the study and scrutiniser dossier labels reports and recommends or rejects for registration or updating National Plant Protection Advisory Committee (NPPAC) endorses the PARTS recommendations.

Tanzania has banned and/or restricted use of certain chemicals in the bid fulfilling international obligation to safeguard health her people and the environment. Table 4.C shows a list of banned or severely re

Table 4.C: Banned or Severely Restricted Chemicals: Tanzanian Situation.

Name Of Chemical	Level Of Restriction	Details Of Restriction i.e. Reason For control action or the remaining in use.
Methyl Parathion	B	Highly toxic
Ethyl parathion	B	Highly toxic
Aldicarb	B	Very highly toxic
Captafol	B	Carcinogenic
Dinoseb & Dinoseb salts	B	Not registered
Fluoroacetamide	B	No request for registration
EDB	SR	Pending approval of alternative fumigants
Mercury compounds	B	Refers only to pesticide uses.
Aldrin	NR	For emergency cases in limited amount
Dieldrin	NR	For Emergency cases in limited amount
DDT	NR	For emergency cases in limited amount
HCH Mixed isomers	NR	
Chlordane	NR	Pending approval of alternative soil insecticides
Heptachlor	NR	Need more time
Crocidolite	-	Additional time is need to reach a final decision
PBBs PCBs PCTs	- - 	Additional time is needed to reach the final decision Additional time is needed to reach and decision. Additional time is needed to reach the final decision
Tris (2,3, dibromopropyl phosphate	-	Additional time is needed to reach the final decision.

Key: B (Banned), SR (Severely Restricted), P (Permited), - (No action has been taken)

NR – Not registered.

4.5 Comments and Analysis

Gaps and Weaknesses in the Existing Legislative System for the Management of Chemicals.

Tanzania Mainland

- Realising the weakness and gaps in the current chemicals management system, efforts are being made to enact various laws to address the problem. Presently the Ministry of Agriculture and Food Security is working on a draft legislation to regulate fertilizers. Likewise, the Ministry of Health has drafted a Law on Industrial and Consumer Chemicals Management and Control which is in the final staged define being tabled as a Bill for first reading in Parliament.
- Further, a Bill by this Ministry has recently been tabled before Parliament. This bill envisages to repeal the Food (Control of Quality) Act, 1978 together wish the Pharmaceuticals and Poisons Act, 1978 and further aims to provide much more efficient and comprehensive provision in the regulation and control of food drugs medical devices, cosmetics, herbal medicines and prisons.
- Equally significant in the drive to curb the exists gaps, the Ministry of Labour has prepared a draft legislation on Occupational Safety and Health. The draft aims to address occupational health and safety related chemicals and other auxiliary matters formally falling the Factories Ordinance (Cap. 297) which will consequently be repealed.
- There is no legislation on chemical wastes. However obsolete chemicals were transported once (1995) from Zanzibar to England for disposal by incineration. This was done with the financial assistance of the Dutch Government. In 1997 an inventory of all obsolete pests in mainland Tanzania was conducted and sound disposal methods worked out. This activity was carried out by NEMC with the assistance of Dutch Government.
- Pesticides are regulated by the Tropical Pesticides Research Institute (TPRI). Although under different legislation namely, The Tropical Pesticides Research Institute Act No.18 of 1979 and the Plant protection of Substances Act No. 13 of 1997. It is encouraging that there is currently marked improvement in terms of manpower and enforcment following recent engagement of several pesticide inspectors and the review and enhancement of penalties.
- Chemical wastes management is still a big problem in Tanzania as there is no specific legislation addressing the problem. The draft law on Consumer and Industrial Chemicals Management and Control provides to some extent for management of the waste.
- The importance of the legislation becomes obvious after realising that there is a substantive amount of obsolete chemicals left indisposed of in various parts of Tanzania. In 1997 NEMC conducted and established on inventory of obsolete chemicals (pesticide & vertenary drug) in mainland Tanzania and recommended sound disposal methods. These waste have been stabilized awaiting sound disposal.
- A preliminary inventory on POPs chemicals was conducted in May 2000. The inventory indicated that there are PCBs waste existing in obsolete transformers.
- Furthermore, the inventory showed that 32 transformers containing PCBs are still in use and are leaking.
- With the growing private sector chemical laboratories are being established for the purpose of quality assurance of then products. It is therefore important that these laboratories are recognised in the proposed laws as some of them might be competent in quality assurance of specific products.

- The enforcement mechanism of laws related to Environment Management is weak and inefficient. Most enforcement bodies lack personnel, training and finances to enforce the laws, and when prosecution occurs existing penalties are low; or lightly imposed by courts.
- Poor documentation, which is quite common in most institutions, may be contributing factor to the weaknesses.
- Lack of co-ordination; sometimes different sectors are not aware of what other sectors are doing in terms of law and policy reform.

Zanzibar (Tanzania Islands)

An environmental policy is in place. Section 15 deals with toxic chemicals.

New laws/regulations

New laws and regulations in the field of chemicals management are being proposed. Some of the existing legislation include:

- Law to control industrial and consumer chemicals, with provisions for registration and licensing (Responsible Institution: Ministry of Health, Chief Government Chemist Laboratory Agency (will be) enacted soon.
- Regulations for protection of workers against hazardous substances in the workplace: Factories (Industrial Hygiene rules) 1993 - which will now include all chemicals. (Responsible Institution:-Ministry of Labour, Chief Factory Inspector) – Proposed for review.
- Regulations for protection of the health of workers and the environment in mining activities. (Responsible Institution: Ministry of Energy and Minerals, Commissioner: Mineral Resources Department).- These are in place.
- National Environmental Policy. (Responsible Institution: Office of the Vice President, Department of Environment and National Environment Management Council).
- Drugs and Prevention of Illicit Traffic in Drugs Act, (1995); (to include control of chemicals used as raw materials for drug formulation. (Responsible Institution: Ministry of Home Affairs). It is in place.
- Amended Pharmaceuticals and Poisons Act. (Responsible body: Ministry of Health, Registrar of Pharmaceuticals). It is a review process.
- Food (Control of Quality) Act, Regulations on food additives. (Responsible body: Ministry of Health, Registrar, and National Food Control Commission), Reviewed 1999.
- Management of radioactive waste and disposal.
- Transportation of radioactive material and wastes.
- Monitoring of radioactive material in imported foodstuffs – National Radiation Commision

All these proposed Acts/regulations address the sound management of chemicals, directly or indirectly.

Areas which are not covered by present laws

- A few areas related to environment are not addressed (or are hardly addressed at all by the existing legislation). e.g. air pollution and hazardous waste management.
- Hazardous chemicals are used in many manufacturing and other industrial processes. No regulation exists for the generation, handling, use and storage of hazardous chemicals.

Recommendations

- Formation of an Environmental Legislative review team to co-operate with NEMC, Division of Environment, the Chief Government Chemist, the Attorney General's Chambers, and other relevant sectors should be considered.
- Such areas like right to clean water and clean environment should be guaranteed by law, with the right of public to enforcement of this provision.
- Penalties should be increased in the penal code for fouling of chemicals legislation.
- Provision on proper study and research on toxicity, biodegradability persistence of a chemical to be performed before registration, in the proposed law.

Chapter 5

Ministries, Agencies and other Institutions Managing Chemicals

This chapter describes and analyses the mandates and programs of different ministries, agencies and other governmental institutions responsible for, and concerned with, various aspects of chemicals management

5.1 Responsibilities of different Government Ministries, Agencies and Other Institutions

Table 5.A provides a general overview of responsibilities of different ministries, agencies and other institutions related to management of chemicals for each stage of a chemical's life cycle from the point of production/import to disposal. The table intends to show areas currently covered, missing and overlaps in the national infrastructure.

In addition, the table shows different classes of chemicals. These include pesticides, petroleum products, Industrial and Consumer, and Others

Table 5.A: Responsibilities of Government Ministries, Agencies and Other Institutions for each stage of chemical life cycle.

Stage of life cycle / Ministry or Agency	Importation	Production	Storage	Transport	Distribution /Marketing	Use/ Handling	Disposal
Vice-Presidents Office – DoE	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*
NEMC	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
Health – GCLA	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
Health - Pharmacy Board	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
Agriculture & Food Security – TPRI	1	1	1	1	1	1	1
Labour & Youth Development – OSHA	1*, 2*, 3*, 4*	1, 2, 3, 4	1, 2, 3, 4			1, 2, 3, 4	1, 2, 3, 4
Industries and Trade – BRELA	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*		1*, 2*, 3*, 4*	3*	1*, 2*, 3*, 4*
TBS	2*, 3, 4*	2*, 3, 4*	2*, 3*, 4*		2*, 3*	1*, 2*, 3*, 4*	2*, 3*
CPCT	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*			1*, 2*, 3*, 4*	1*, 2*, 3*, 4*
Transport & Communication				1*, 2*, 3*, 4*			
THA	1, 2, 3, 4		1, 2, 3, 4			1, 2, 3, 4	1, 2, 3, 4
TRC and TAZARA	1, 2, 3, 4		1, 2, 3, 4	1, 2, 3, 4		1, 2, 3, 4	1, 2, 3, 4
Defence	2, 4	2, 4	2, 4	2, 4	2, 4	2, 4	2, 4
Justice & Constitution Affairs	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*
Foreign Affairs	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*	1*, 2*, 3*, 4*
Home Affairs	2, 4	2, 4	2, 4	2, 4	2, 4	2, 4	2, 4
Education			3			3	3
Science, Technology and Higher Education	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
NRC	4	4	4	4	4	4	4
Water and Live Stock	1, 3		1, 3	1, 3		2, 3	2, 3
Energy & Minerals	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4
TRA			1, 2, 3, 4				
Local Government	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4

Key: 1- Pesticide; 2 - Petroleum products; 3 – Industrial & Consumer; 4 – Others, * Indirect;

5.2 Responsibilities of Ministries, Agencies and Other Institutions Related to Chemicals management

This section provides a brief description on primary responsibilities for, involvement in and specific aspects of management of chemicals, of ministries, agencies and other institutions listed in Table 5.A above.

i) Vice President Office - Division of Environment (DoE)

The division is responsible for:

- Overall environment policy formulation and planning.
- Co-ordination and harmonisation of sectoral policies.
- Facilitates public participation in environment protection, and creates a forum for inter-sectoral conflict resolutions.
- International conventions related to environmental management.

ii) National Environment Management Council

- Provides inputs in the formulation and review of policies and legislation relevant to environment. Also provides technical inputs to Government positions on regional and international negotiations in the area of environment;
- Improves capacity, provides coordination mechanisms and foster the cooperation between central government, local authorities, the public and private sector in the implementation of environmentally sustainable programs;
- Seeks the advancement of scientific knowledge on changes in the state of environment and encourage the development of technology to prevent or minimize adverse effects that endanger human health and well being as well as environmental degradation;
- Specifies and enforces standards, norms and criteria for the beneficial uses of our resources and the maintenance of the quality of the environment;
- Establishes and operates national environmental management system and promotes environmental education and awareness programs; and
- Evaluates existing and proposes sectoral policies and activities and recommends measures to ensure that development and conservation of natural resources take adequate account of environmental effects.

iii) Chief Government Chemist Laboratory Agency

- Provides services on chemical, microbiological and medico-legal analysis of samples governing public health, environmental and criminal investigations
- The Designated National Authority (DNA) for PIC, industrial and consumer chemicals.
- Coordinated chemicals management activities.
- Contact Focal Point for POPs of industrial chemicals

iv) The Pharmacy Board

- Registration and maintaining register of pharmacists;
- Regulates activities and profession of pharmacy;
- Regulates the manufacture, importation, labelling, marking or identification, storage and sale of pharmaceuticals and related substances;
- Prescribe minimum standards of quality in respect of pharmaceuticals manufactured in/or imported into Tanzania;

- Registration of human and veterinary pharmaceuticals and keep and maintain a register for registered drugs.

v) Tropical Pesticide Research Institute (TPRI)

TPRI and Plant Health Services of the Ministry of Agriculture and Food Security are responsible for:

- Regulating and controlling of pesticides activities such as registration, importation, formulation, distribution/transportation, labelling, packaging, safe handling, use, storage and disposal.
- Conducting pesticides residues analyses in foods, animal feed and in the environment.
- Certification of pest controllers, pesticide retailers, fumigators and formulators.
- Enforcing inspectorate services to ensure compliance to the law.
- Awareness raising on pesticides' management.

vi) Occupational Health and Safety Agency (OSHA)

The main responsibilities are:

- To identify and assess exposure to chemical risks.
- Perform general inspection of plants and machinery.
- Surveillance of working condition and environment and workers' health.
- Research on occupational safety and health.
- Emergency plans for industries.
- Policy formulation for health and safety in industry.
- Enforcement of laws and regulation on occupational healthy and safety.
- Focal point for Intergovernmental Forum on Chemical Safety

vii) Ministry of Industry and Trade

The major responsibilities are:

- To prepare, implement and monitor industrial and trade policies;
- To contribute to the progress of the governments' parastatal sector reform program
- To promote and facilitate private sector reform development
- Negotiate, draft, implement and monitor implementation of international trade agreements and protocols.
- Focal point for export promotion and development.
- To carry out the perquisite research, analysis and study work on trade and industrial activities.

viii) Business Registrations and Licensing Agency (BRELA)

- Issuing business license for medium and heavy industries.
- Registration of Medium and heavy industries

ix) Tanzania Bureau of Standards (TBS)

- Undertakes measures for control of commodities of all descriptions, which includes chemical and chemical products.
- Prepare, frame, modify or amend standards.
- Provide for testing of locally manufacturing and imported commodities.
- Controls the importation of commodities covered by specifications gazetted as compulsory standards; and
- Certification of commodities produced locally through the TBS standards mark

x) The Cleaner Production Centre of Tanzania (CPCT)

Its main responsibility is to promote the concepts of cleaner production in Tanzanian industries, which includes waste minimization, use less toxic chemicals and waste recycling.

xii) Ministry of Transport and Communication

Issuing of transport licence.

xii) Tanzania Harbours Authority (THA)

The main functions are:

- To clear and handle goods imported into/ exported out of the country.
- Provides storage for transit goods.
- Loading and unloading of goods in trains, trucks, ships.
- Maintaining fire safety and clean up of spillages at the port.

xii) Tanzania Railways Corporation (TRC) and Tanzania Zambia Railway Authority (TAZARA)

Main responsibilities are:

- Transportation of goods including chemicals by surface and marine.
- Storage of goods, which are on transit.

xiii) Ministry of Defence

Importation, storage, transportation, use, handling and disposal of classified chemicals.

xiv) Ministry of Justice And Constitutional Affairs

The Ministry has the following functions:

- Chief adviser to the Government on legal issues;
- Prosecuting offenders in criminal cases;
- Deals with civil cases in which Government is involved;
- It has powers to negotiate and approve contracts made between Government of Tanzania with other Governments/international bodies or between institutions;
- To draft laws;
- Deal with constitutional matters; and
- Dispense of justice
- Legal translation.
- Human rights

xv) Ministry of Foreign Affairs and Regional Cooperation

- Facilitates in International conventions and recommendations on behalf of various ministries.
- Performs regional and international collaboration.

xvi) Ministry of Home Affairs

- Assists in prosecution of non-compliance to the set out laws and regulation.
- Illicit drug control

xvii) Ministry of Education

- Education.
- Chemical laboratory for schools

xviii) Ministry of Science, Technology and Higher Education

Facilitates research and training in areas of chemicals management.

xix) The Tanzania Commission For Science And Technology

The Centre has the following functions:

- Assists decision makers in their choice of technology;
- Registers and evaluates technology transfer agreements are to be registered.
- To acquire, process, store, retrieve and disseminate industrial and technological information;
- To assess existing technology, monitor absorption of foreign technology by local entrepreneurs to ensure they meet long term national development needs and plans; and
- To promote the carrying out of research in the area of science and technology.

xx) National Radiation Commission (NRC)

NRC controls the use of radioactive materials, radiation devices and for other matters related with the protection of persons from harm resulting from ionising radiation.

xxi) Ministry of Water and Livestock Development

The major functions are:

- Formulation and implementation of water policies;
- Coordination of all activities pertaining water projects and programs;
- Safe water supply and sewerage;
- Regulate and control water resources;
- Pollution control and protection of water quality

xxii) Ministry of Energy and Minerals

This ministry is responsible for:

- Planning, co-ordination, supervision and regulation of mining and energy affairs and formulation of policies and programs for economic and social development.
- Issuing licenses for mining activities after EIA report.
- Regulating companies doing exploration in the country.
- Promoting petroleum exploration and development already discovered resources
- Regulating procurement, storage, distribution and marketing of petroleum products.

xxiii) Ministry of Finance - Tanzania Revenue Authority (TRA)

- Keeps records of importers and exporters and ensures importers meet import requirements under various agencies

xxiv) Local Government Authorities

Local authorities are involved in aspects of chemicals management such as trade control, encourage development activities, regulate and control sanitation. The primary responsibilities include:

- Formulate, co-ordinate and supervise the implementation of all plans for the economic; commercial, industrial and social development in its area of jurisdiction;
- Make by-laws applicable throughout its area of jurisdiction and to consider and approve by-laws made by village councils within its area of jurisdiction;
- Regulate the cultivation or possession of poisonous or noxious plants, drugs or poisons;
- Establish, maintain and control fire brigades, and provide for the control of fires;
- Control the manufactures, possession, sale transport and consumption of intoxicating liquors;
- Regulate any trade or business which may be noxious, injurious to the public or a source of public danger, in or which otherwise it is in the public interest expedient to regulate and to provide for the issue of licenses or permits to facilitate the regulation of any such trade of business and for the imposition of fees in respect of such licenses or permits; and
- Control noxious or offensive trade.;

5.3 Comments/Analysis

1) Overlapping mandates have been observed among ministries and bodies as far as management of chemicals is concerned. There is a need to enhance co-ordination among these institutions and where possible to streamline existing legislations.
2) There is a National Environmental policy, which in a way stipulates governance of chemical management.
3) There do exist sectoral policies that provide framework on chemicals management such as water policy, mining policy, and agricultural policy.
4) Local Government Authorities should be sensitised so that they can clearly elaborate and enhance their role in management of chemicals. This is because chemicals such as pesticides, pharmaceutical products, water treatment chemicals and many others end up in their areas of jurisdiction. They can manage chemicals by enhancing voluntary compliance through incentive schemes.
5) Presently GCLA has a draft proposal for a law governing management of industrial and consumer chemicals.
6) The current degree of implementation of various institutional mandates need to be improved through:

    a) Increased resource allocated to these institutions.
    b) Update and operationalize legal instrument to reflect current situation and technology.

Chapter 6

Relevant Activities of Industry, Public Interest Groups and the Research Sector

The private and informal sectors are expanding rapidly Tanzania due to the economic reforms undertaken by the government. Therefore the participation of non-governmental organizations, industry, workers' organizations and other public interest groups in Chemicals Management is necessary. The industries of prime concern include:

i) Food Processing: dairy and poultry products, cereals, fruit and vegetables, sugar and honey, coffee, tea, cocoa, spices, beverages, edible oil.
ii) Cosmetics: essential oils, perfumes and toiletries.
iii) Manufacturing and Process: plastics, pulp and paper, artificial resins, tobacco, fuels, lubricants and related products, paints, dyestuff, textiles, fibres, fertilisers.
iv) Construction: wood, lumber, cork, iron and steel, cement, glass works.
v) Medical Chemicals and Pharmaceuticals.
vi) Veterinary Chemicals and Drugs.
vii) Agrochemicals.
viii) Mining Industry.
ix) Transport and communication
x) Energy

The production, quality control, distribution, storage, use and disposal of chemicals, is done mainly by the industry. Some of these activities are regulated as of chemicals, just like their production is done mainly by private sector. These activities are not regulated as far as management of chemicals is concerned.

Enforcement of existing legislations is not satisfactory. In the transport industry there is a clear division between the private and government/public sector whereby road haulage is mainly private while the railway lines are still public owned. The transport of goods to and from neighbouring countries is mainly by road due to the inefficiency of the railway services.

The increased reliance on private transportation and haulage of goods including chemicals, makes monitoring and enforcement more complex on part of the government regulatory bodies. It is also increases risks associated with chemical accidents.

Airfreight for both domestic and international destinations are also increasing and there is evidence that specified standards of handling chemicals are more adhered to on airfreight compared to other modes of transport.

The available chemical storage facilities are inadequate and poor. In addition, standard storage techniques are not properly applied. Poor storage leads to deterioration of chemicals and containers, increases risks to human health and the environment and sometimes, repackage of chemicals might have to be done. Where repackage is done, there evidence that show that unsuitable containers or packets have been used.

There are however non-governmental and workers organisations which deal in issues related to chemicals management. Most of these organisations however are more effective as pressure groups. Some of their activities include public awareness advocacy, training and monitoring. They have little expertise and lack experience to effectively carry out chemicals management activities.

Research and academic institutions, in most cases have well established infrastructure for management of chemicals but frequently suffer from lack of financial resources to carry out outreach programmes related to chemicals management

6.1 Description of Organisations/Programs

Name of Organization	Contact point	Address	Activities/programmes	Areas of interest
UDSM	Heads of Departments (CH, CPE, Geology, etc.	University of Dar es Salaam	Research, Training, consultancy	
SUA	Heads of departments (Food Science, Soil Science, etc.	Sokoine University of Agriculture, Morogoro	Research, Training, consultancy	
AAT	Chairman	C/O Bytrade(T) Ltd P O Box 2241 Dar es Salaam aat@acexnet.com	Pesticide safe use, training, dissemination of information	Agrochemicals
TPAWU	General secretary	P O Box 77420 Dar es Salaam tpawu@raha.com http://www.tpawu.org	• Global pesticide project • Development of code of conduct on pesticides use • Collective bargaining agreements	• Pesticides • Health and safety • Biodiversity assessment
MUCHS			Research, Training, consultancy	Medical issues
AGENDA	Executive secretary			POPS, PIC
JET			Publicity of environmental issues	

6.2 Summary of Expertise Available Outside the Government

The profile of the non-governmental organisations which might be available to support national programs and policies related to management of chemicals is shown in table 6.A.

Table 6.A: Summary of Expertise Available Outside the Government

Field of Expertise	Research Institution	Universities	Industry	Environment/Consumer Groups	Labour Unions	Professional Org.	Other (specify)
Data Collection	x	X	x*	x+		x	
Testing of chemicals	x	X	x*			x	
Risk Assessment	x	X	x*			x	
Risk Reduction	x	X				x	
Policy Analysis	X+	x+		x+	x+	x	
Training & Education	x	X	x*			x	
Research on Alternatives	X+	x+					
Monitoring	x	X		x+		x	
Enforcement			x				
Information to Workers	X+	x+	x*	X	x+	x	
Information to Public	X+	x+		X		x	
Other (specify)							

+ to some extent, * minimum

6.3 Comments/Analysis

Currently there are several institutions that provide information on chemicals management. Some of these are NEMC, The Government Chemist Laboratory Agency, TPRI, the Pharmacy Board, the National Radiation Commission, etc.

In Tanzania, information on management of chemicals are available at various laboratories, libraries and documentation centres including institutions of higher learning, research institutes, the Government Chemist Laboratory Agency, Tanzania Bureau of Standards, and NEMC. There are few industries which have some selected/specialised analytical instruments, such as the Portland cement plants, and TIPER (which has now closed down). There have been some voluntary initiatives on management of chemicals by some private industries, but these have in most cases been constrained by lack of financial resources, expertise and information. The effectiveness of their efforts has thus been both difficult to assess and weak.

Information collected by the National Environmental Management Council in the form of hazard audit can be very helpful in developing a national chemicals management policy.

Chapter 7

Overview of Inter-Ministerial Commission and Co-ordinating Mechanism

7.1 Inter-Ministerial Commission and Co-ordinating Mechanism

This chapter provides a description of the existing mechanisms, which facilitate co-ordination and co-operation amongst government, and private agencies, as well as and public organisations in the areas of management of chemicals. There are six mechanisms covering the management of pharmaceuticals, pesticides, radioactive materials, petroleum products and industrial and consumer chemicals. However, there is a need of addressing gaps particularly those pertaining to coordination, planning, community education and information exchange. In addition to capacity building in the relevant institutions, there is a need of establishing a central coordinating office (See Table 7.A.)

7.2 Description of Inter-Ministerial Commission and Co-ordinating Mechanism

Several inter-ministerial commissions deal with some aspects of chemicals management. These include among others the National Radiation Commission and Anti-drug Commission. In the case of coordinating, there are regulatory and non-regulatory mechanisms. Non-regulatory coordinating mechanisms include the Steering Committee, the Chemical Management Technical Advisory Committee and the National Coordinating Team on Chemicals Management.

The Steering Committee, coordinated by the Chief Government Chemist, advises the Government on the implementation of general management of chemicals and PIC procedures for certain hazardous chemicals and pesticides in international trade. It also provides advise on policy issues, support the chemical management technical advisory committee, reviews and monitor the progress on the implementation of national activities. The committee is composed of members from the Ministry of Industries and Trade, Occupational Safety and Health Authority (formerly Factory Inspectorate), Tropical Pesticide Research Institute (TPRI), Ministry of Justice and Constitutional Affairs, National Environment Management Council (NEMC), University of Dar Es Salaam (CP, CH), the Government Chemist Laboratory Agency (GCLA), the Tanzania Bureau of Standards, Division of Environment and Cleaner Production Centre of Tanzania.

The Chemicals Management Technical Advisory Committee is an inter-institutional agency committee forming linkage between the government, public and private institutions that deal with management of chemicals. The objective of the committee is to coordinate matters related to chemicals management. NEMC is the secretariat of this committee. Members include among others GCLA, TPRI, TBS, UDSM and DoE.

The existing regulatory mechanisms include among others:

i) The Protection from Radiation Act establishes a Radiation Protection Advisory Committee to advise on safety, use and disposal questions, legal measures to be taken, determination of extent of and risk from exposure, inspection of premises and dissemination of information to the public.
ii) The Pharmaceutical and Poisons Act creates the Pharmacy Board to advise on production, import/export, use and legal issues concerning pharmaceuticals and poisons. The Board also issues licenses to dealers in same.
iii) The Petroleum (exploration and production) Act creates Tanzania Petroleum Development Corporation (TPDC) and an advisory Board on issues of exploration, development, processing, importation, distribution and sale and storage of petroleum products and natural gas. Also it has powers to negotiate contracts and on issuing licenses.
iv) The Tropical Pesticides Research Act establishes an advisory Board on functioning of Tropical Pesticides Research Institute, also to advise on production, import and sale of pesticides in Tanzania. The Board also advises on the research outputs as they relate to pesticides efficacy, utility, toxicity and health hazards.

v) The Plant Protection Act establishes the Plant Protection Advisory Committee. It advises the Minister on matters concerning registration and use of plant protection substances

Table 7.A: *A summary of* Inter-ministerial Commission and Co-ordinating Mechanisms

Name of Mechanisms	Responsibilities/Activities	Secretariat	Members	Legislative Mandate/Objective	Information Provided in Section 7.2 Yes/No	Effectiveness
1. Steering Committee	Advises the government on general management of chemicals and PIC procedures	Government Chemist Laboratory Agency (GCLA)	Ministry of Industries and Trade, Occupational Safety and Health Authority (formerly Factory Inspectorate), Research Institutions specifically the Tropical Pesticide Research Institute (TPRI), Ministry of Justice and Constitutional Affairs, National Environment Management Council (NEMC), research institutions and academia, University of Dar Es Salaam (CP, CH), the Government Chemist Laboratory Agency (GCLA), the Tanzania Bureau of Standards, Division of Environment and Cleaner Production Centre of Tanzania.	Advisory Body to the Government on matters regarding to toxicity and ill effects of chemicals	yes	2
	Advise government on measures to regulate chemicals in international trade with a view to protecting human, animal or plant life or health or the environment	As above	As above	Advisory	yes	2
	Advise on policy matters and monitor the incorporation of PIC	As above	As above	Advisory	yes	2

Name of Mechanisms	Responsibilities/Activities	Secretariat	Members	Legislative Mandate/Objective	Information Provided in Section 7.2 Yes/No	Effectiveness
	procedure in national policies and legislation					
	Review the progress of procedure and the various national activities ensuring effective co-ordinated approach	As above	As above	Advisory	yes	2
	Approve future planning and make recommendation to responsible government institutions and the focal point as to changes in PIC procedure/ implementation arrangement and financing implications as may deem necessary.	As above	As above	Advisory	yes	2
	Provide guidance and support to the Technical committees and the focal point	As above	As above	Advisory	yes	2
	Monitor implementation progress on PIC Procedure		As above		yes	2
2. Chemical Management Technical Advisory Committee	Advises on matters related to chemicals management Undertake specific technical tasks.	NEMC	GCLA, TPRI, TBS, UDSM and DoE	Technical Advisory Committee on implementation of PIC procedure	yes	2

Name of Mechanisms	Responsibilities/Activities	Secretariat	Members	Legislative Mandate/Objective	Information Provided in Section 7.2 Yes/No	Effectiveness
National Coordinating Team						
NPPAC		Ministry of Agriculture and Food Security	Relevant Ministries and institutions (Ref. Plant Protection Regulations(1999))	***Regulatory***	yes	2
Anti-Drug Commission	Control the Illicit use of narcotics	*Ministry of Home Affairs*		Regulatory	yes	2
RPAC*	Advises on safety and disposal of radioactive materials	***NRC***	As specified in the Radiation Protection Act 1983	Regulatory	yes	2

Ranking: 1 = excellent, 2 = adequate, 3 = poor

* Radiation Protection Advisory Committee

7.3 Description of Mechanisms for Obtaining Input from Non-Governmental Bodies.

Non-Governmental bodies to some extent play a role in chemicals management. However there is no formal mechanism to facilitate direct dialogue between Government and *non-governmental bodies*. In the past, forums were arranged on ad hoc and on consultative basis, but currently the situation is changing and non-governmental bodies are participating in the development and implementation of policies.

7.4 Comments and Analysis

Existing legal instruments do not address adequately the management of industrial and consumer chemicals. Some institutions in the country for example are not fully aware of chemical hazards, PIC procedures and other relevant conventions and agreements pertaining to the management of chemicals. Promotion of awareness and capacity building in these institutions need to be effected.

The existing inter-ministerial commissions cannot address issues of chemicals management adequately. More commissions needs to be constituted. They also need publicity and capacity building.

The coordinating process for non-regulatory mechanisms is not well defined. In addition, the mechanisms have no legal mandate and the participating institutions lack information sharing and have no adequate knowledge on chemicals management.

Chapter 8

Data Access and Use

8.1 Availability of Data for National Chemical Management

Data and other information: national and international on chemical safety, is available at various institutions, mainly government offices such as FI, GCLA , NEMC, etc. This kind of information is quite useful in reducing health and environment effects if well utilised. The wider collaboration in the preparation of the National Profile and its subsequent wide circulation has resulted in improved information sharing and exchange amongst various institutions. The volume, quality and detail of some of the information have since been updated.

The Internet breakthrough in Tanzania has been significant. Most of the stakeholder institutions have at least e-mail services if not full Internet connectivity. The availability of these services has enabled flexible information sharing and exchange resulting in the minimization or total removal of red tapes associated with information exchange/sharing.

In theory, availability of information is free in most government offices. Table 8.A provides a review of data availability for different decision making activities which might be required under the existing legal instruments.

Table 8.A: Quality and Quantity of Available Information

Data needed for/to:	Pesticides (agricultural, public health and consumer use)	Industrial Chemicals	Consumer Chemicals	Chemical Wastes
Priority setting	good	low	low	low
Assess chemicals Impact under Local conditions	good	low	low	low
Risk Assessment (environment/health)	fair	low	low	low
Classification/ Labelling	good	fair	fair	low
Registration	good	low	low	low
Business Licensing	good	good	good	na
Permitting	good	low	low	low
Risk reduction Decisions	low	low	low	low
Accident Preparedness/ Response	low	low	low	low
Poisoning Control	fair	fair	fair	low
Emissions Inventories	low	low	low	low
Inspections & Audits (environmental/health)	fair	low	low	low
Information to workers	fair	fair	fair	low
Information to the public	fair	fair	fair	low
Quality standards	good	fair	fair	low
Record keeping	good	fair	fair	low

8.2 Location of National Data

Table 8.B provides the nature of national data related to the management of chemicals and how to gain access to such data. The table also indicates where the data is maintained, the source of the data, who has access and the media in which the data is maintained.

Table 8.B: Location of National Data

Type of Data	Location(s)	Data source	Who has access?	How to gain access	Format
Production Statistics	BoS	Ministry of Industries & Trade, Ministry of Agriculture, surveys	public	request, buy	automated data, reports, files
Import Statistics	BoS, TRA	custom officers importers	public	request, buy	automated data, reports, files
Export Statistics	-do-	custom officers exporters, BOS	-do-	-do-	-do-
Chemical Use Statistics	Custos, TCCIA, AAT, CTI	Ministry of Industries and Trade	public	request	Reports
Transport statistics	BoS	Ministry of Transport Transporters	public	request	automated data , files
Industrial Accident Reports	OSHA	Inspectors, Industries, Workers, Ministry of Industries and Trade	-do-	-do-	automated data , files
Transport accident reports	Ministry of Transport Ministry of Home Affairs	Police/Traffic, public	-do-	request	Files, reports
Occupational Health Data (agricultural)	Plant Protection Dept.	Ministry of Agriculture TPRI, farmers, surveys	-do-	-do-	Files, reports
Occupational Health Data (industrial)	OSHA, Ministry of Health	industries, workers, Inspectors, Ministry of Health	-do-	-do-	automated data, files
Poisoning Statistics	Ministry of Health, GCLA, poisons centre, OSHA	Ministry of Home Affairs, ministry of health, poisons centre	public	request	automated data , files, reports
Pollutant Release and Transfer Register	-	Local Authorities	-	-	-
Hazardous Waste Data	NEMC, Ministry of Health	surveys, studies, reports	-do-	-do-	Reports
Register of Pesticides	TPRI	pesticide registrants	-do-	-do-	automated data
Register of Toxic Chemicals	NEMC, GCLA	NEMC, GCLA	-do-	request	Automated data, files
Inventory of Existing Chemicals	NEMC*	Ministry of Industries and Trade, Ministry of Agriculture and Food Security	public	request	automated data, files
Register of Imports	customs statistics dept., customs, TRA,	Importers, TRA, TPRI, AAT, customs	public	request	automated data, files

	Pharmacy Board				
Register of Producers	FI, Ministry of Industries & Trade, TCCIA, CTI,	Inspectors producers	public	request	automated data, files
PIC Decisions	GCLA TPRI	UNEP Chemicals, TPRI, GCLA	public	request	Automated data, files
Quality standards	TBS	Foreign 7 International standards. Industries, ISO, CODEX, TBS	Public	Request, buy	Standard document

* just established/incomplete

8.3 Procedures for collecting and Disseminating National/Local Data

Procedures for collecting and disseminating data related to chemicals management are mainly restricted to pesticides and veterinary drugs and pharmaceuticals. The pesticides are regulated under the TPRI Act No 18 (1979), under this act, TPRI is required to control and register pesticides, also the institutions is required to collect and maintain all data on pesticides from literature and research regarding their potency, use, distribution and safety. Occasionally TPRI runs training workshops for agricultural extension officers and farmers to disseminate relevant information on pesticides.

The Pharmaceutical Board Act No. 9 of 1978 regulates the pharmaceuticals and veterinary drugs. There is however no legal regulation for consumer and industrial chemicals. In this category, the maintenance of the data on health and environmental effects of the chemicals is restricted to occupational aspects only. OSHA in collaboration with the labour statistics unit do collect, analyse and provide information of occupational injuries, some of this data has been organised in a computer database.

When there is health or environmental problems, the Chief Government Chemist may collect, analyse, develop and provide the data for a specific chemical substance in question. However, due to inadequate data storage infrastructure at the Government Chemist Laboratory Agency, this data has yet to be computerised. Data for pesticides e.g. organophosphates is maintained by TPRI, this data is however not detailed and is incomplete in some cases.

Despite the absence of established rules for public access to information relating to data on chemicals, discretionary decisions, and sometimes red tape have prejudiced such access. To a greater extent access has depended on the level of experience, competence and educational background of the officers engaged in establishments dealings with chemicals management.

Information and data access is not, in practical terms adequate. Theoretically data collected by government institutions and especially those dealing with human health and environmental protection initiatives is supposed to be accessible to the public. As there is no national depository of such information, it is very difficult at times to trace the information.

8.4 Availability of International Literature

Table 8.C provides a summary of international literature available in Tanzania.

Table 8.C: Availability of International Literature

Literature	Location(s)	Who has access?	How to gain access
Environmental health Criteria Documents (WHO)	ILO, JCL, OSHA, TPRI, NEMC, WHO	public	request
Health and Safety Guides (WHO)	TPRI, WHO, GCLA , OSHA, EMC	-do-	-do-
International Safety Data Cards (IPCS/EC)	OSHA, CPCT, WHO	-do-	-do-
Decision Guidance Documents for PIC Chemicals (FAO/UNEP)	GCLA , TPRI	-do-	-do-
FAO/WHO Pesticides Safety Data Sheets	TPRI, Ministry of Agriculture.	-do-	-do-
Documents from the FAO/WHO Joint Meeting on Pesticide Residues	GCLA , TPRI	-do-	-do-
Material Safety Data Sheets (industry)	ILO, OSHA	-do-	-do-
OECD Guidelines for Testing of Chemicals	-	-	-
Good Laboratory Practice Principles	-	-	-
Good Manufacturing Practice Principles	-	-	-
WHO/UNEP Global Environmental. Library Network	-	-	-
Safety and Health at work, ILO-CIS bulletin	OSHA, ILO	public	request
African and Tanzania Safety and Health newsletter	OSHA	-do-	request
International & Foreign quality standards	TBS	-do-	Request

8.5 Availability of International Databases

Table 8.D provides a summary of international databases available in Tanzania.

Table 8.D: Availability of International Databases

Database	Location(s)	Who has access	How to gain access
IRPTC	GCLA, NEMC, UDSM	Public	Public
ILO CIS	ILO, OSHA	Public	Request
IPCS INTOX	GCLA	Public	Public
Chemical Abstract Service Database	UDSM	Public	Public
Global Information Network on Chemicals (GINC)	-	-	-
STN Database	-	-	-
Relevant Databases from other countries	-	-	-
Databases over the Internet	Several	Public	Public

8.6 National Information Exchange System

Information flow from international organisations to national institutions depends on the type of information, and it is mainly facilitated in the following ways:

i) Courses, seminars, workshops, symposia, etc.
ii) Bulletin and journals, brochures
iii) (ii) International newsletters e.g. African Safety and health newsletter and their supplements.

The model for national information exchange is:

i) Courses, seminars, workshops, symposia, Internet, e-mail, etc.,
ii) National newsletters e.g. Tanzanian Safety and health newsletter (newsletter is prepared by the Factories Inspectorate),
iii) NEMC News, TPRI newsletter
iv) Cleaner Production newsletters.

There is also a limited exchange of information amongst other institutions. A national mechanism to facilitate an improved aspect of this information exchange does not exist.

8.7 Chemicals Information Access on the Internet

A training workshop on accessing information on Chemicals Management on the Internet was conducted from 4-10 September 2000. This workshop was attended by participants from over 15 institutions and covered broad issues of selecting search engines, keywords and making effective searches on the Internet. Participants were also exposed to various web sites that host Chemicals Management related information. This training was sponsored by UNEP Chemicals

8.8 Comments and Analysis

- There are significant gaps on the literature/information base on management of chemicals. It has also been established that there is an increasing demand for information on management of chemical from general public.
- Although there are some institutions with overlapping responsibilities, there is no evidence yet to suggest that these institutions issues conflicting information. In fact the information has in most cases been complementary. Notably these institutions are:

  - TPRI & OSHA (pesticide information)
  - GCLA & TPRI (pesticide data)
  - OSHA & Occupational Health Services (chemical data)
  - OSHA & NEMC (chemical data)
  - OSHA & Ministry of Industries and Trade (Industry inventory)
  - TPRI & NEMC (pesticides data)
  - TBS (quality standards of industrial and household chemicals)
  - University of Dar es Salaam
  - Sokoine University of Agriculture

- Some of the institutions collecting and maintaining information related to the management of chemicals have started creating computer databases and also using existing databases for the same. Some of the locally generated information has also been computerised, some are also web accessible.
- It is important to however point out that some of the computerised data is still incomplete e.g. Chemical Inventory in Tanzania done by NEMC. Also some collected information has not been

updated for quite some time e.g. Workplace Information (WINFO) system and Inventory of industries in Tanzania produced by OSHA. Others include those maintained by TPRI (Register of pesticides), Pharmacy Board for drugs and pharmaceutical products and the Bureau of statistics. Initiatives for improving the Databases are receiving high priorities. The existing database may be strengthened by:

- Building up of technical capacity for data management in all concerned institutions
- Put in place the necessary infrastructure i.e. computers, telefax, E-mail, internet, etc.
- Formulate, facilitate and publicise the network for information bank in the country.
- Make available some money required as subscriptions to international databanks for becoming eligible for news subscription

- There is plentiful international data on management of chemicals is abundant, unfortunately access to the data is limited due to lack of skilled personnel, technical know how, high telephone tariffs and poor communication infrastructure.
- Other methods for obtaining further/additional local information on management of chemicals include:

  - Surveys
  - Studies
  - Monitoring at entry points
  - Monitoring the use
  - Registration of chemicals used in the country.

Chapter 9

Technical Infrastructure

9.1 Overview of Laboratory Infrastructure

Good working and well-established laboratory infrastructure is only available in tertiary education colleges, Research Institutes, the Government Chemist Laboratory and the Tanzania Bureau of Standards. Table 9.A provides an overview of laboratory facilities in the country. Important thing to note is that there is no recognised body that offers 'good laboratory practice' (GLP). The GLP value indicated in table 9.A is based on a subjective assessment of the authors.

Table 9.A: Overview of Laboratory Infrastructure for Regulatory Chemical Analysis

Name/description of Laboratory	Location	Equipment/Analytical Capabilities	Accreditation (if yes by whom)	Certified GLP (yes/no)	Purpose
AMU, UDSM	Dar es Salaam	GC		Yes	Training, research and public services (consultancy)
TPRI	Arusha	HPLC(2), GC(2), SP(1), AAS(1),UV/Vis)		Yes	Research and quality assurance
TBS	Dar es Salaam	AAS(1), HPLC(1), UV/V(1), MU(3), C-S Analyser(1)		Yes	Quality assurance and training
GCLA	Dar es Salaam	HPLC(2), AAS, GS(1), FTIR(1), IR(1), UV/Vis), MU(1)		Yes	Regulatory and quality assurance
CH, UDSM	Dar es Salaam	HPLC(1), GC(1,2), AAS(1), FTIR(1), UV/V(1)		Yes	Training, research and public services (consultancy)
CPE, UDSM	Dar es Salaam	HPLC(1), GC(3), AAS(2,UV/Vis), C-S Analyser(1), GC-MS(1)		Yes	Training, research and public services (consultancy)
Geology, UDSM	Dar es Salaam	AAS(1), ICP		Yes	Training, research and public services (consultancy)
TFNC	Dar es Salaam	HPLC(2), SP(1), UV/Vis), MU(1), ELISA(1)		Yes	Research and quality assurance
SUA	Morogoro	UV/Vis), HPLC, SP, AAS, M		Yes	Training, research and public services (consultancy)
NRC	Arusha	RA(1)		Yes	Regulatory and quality assurance
Moshi Pesticide	Moshi	GC(1)		Yes	Quality assurance

Pharmacy Board	Dar es Salaam	HPLC(1), GC(1), FTIR(1), UV/V(1), MU(1)		Yes	Quality assurance
Water laboratories	Dar es Salaam				Regulatory and quality assurance
	Arusha				Regulatory and quality assurance
	Mwanza				Regulatory, quality assurance and research
UCLAS	Dar es Salaam				Training and research
Geological survey laboratories	Dodoma				Research
SADC Mineral laboratory (SEAME)	Dar es Salaam				Quality assurance, research and training
NIMR					Research

Key

Symbol	Description	Detector (as superscript)
HPLC	High Performance Liquid Chromatography	1= IR; 2=UV
GC	Gas Chromatography	1=FID; 2=ECD
SP	Spectrophotometer	
AAS	Atomic Absorption Spectrophotometer	1=Furnace; 2=Cold; 3= Hydride generation
FTIR	Fourier Transform Infra Red	
IR	Infra Red	
UV/Vis	Ultra Violet- visible	
C-S Analyser	Carbon-Sulphur Analyser	
MU	Microbiological unit	
RA	Radioactive Analyser	
NMR	Nuclear Magnetic Resonance	
ELISA		
GC-MS	Gas Chromatography – Mass Spectrometer	
ICP	Induced Coupled Plasma	

One of the major problems of instrumentation is maintenance. This problem is compounded by the shortage of instrumentation engineers, lack of spares and inadequate funds. Another problem is the use of outdated equipment.

Several laboratories take initiatives to use interlaboratory test comparisons as a means of improving the quality of tests. This initiative is voluntary and in some cases involves even laboratories outside the country.

Co-operation within the region is mainly confined to proficiency tests (ring tests) to qualify, authenticate accuracy and performance of the laboratories by comparing analysis results done by other laboratories in the neighbouring countries.

9.2 Overview of Government Information Systems/Computer Capabilities

Computer literacy nationally is low but is steadily improving. Most laboratories have at least one computer systems other than those coupled to the analytical instruments.

Table 9.B: Computer Databases

Computer System/Database	Location	Equipment Available	Current Use
Workplace Information Systems	OSHA	PC	Public
Chemicals Inventory in Tanzania	NEMC	PC	Public
IPCS/International Safety Cards	OSHA, ILO, TPAWU	PC	Public
ILO-CIS	ILO, OSHA, TPAWU	PC	Public
MSDS	OSHA, TPAWU	PC	Public
SPS and TBT	TBS	PC	Public
Pesticides Action Network – North America and UK	TPAWU	PC	Public
List of registered pesticides, importers, quantity and type of pesticides imported	TPRI	PC	Public
IRPTC, INCHEN/INTOX	CPE – UDSM	PC	Public
National Industrial Profile	NEMC, CPCT	PC	Public

Electronic mail communication is now commonly available in most institutions. However, Internet connectivity is yet to be fully established and available to the public as is the case in many developed countries. It is encouraging to note that there are now several private Internet service providers in the country. It is anticipated that the number of computer systems will continue to go up because most users are aware of the benefits offered by this technology.

9.3 Overview of Technical Training and Education Programmes

There is inadequate training programme in chemicals management. There are however, certain specific training courses offered on safe use and handling of pesticides, aspects of waste management, and fire fighting. No specific training programme particularly on laboratory instrumentation is available in the country. Most of the instrumentation training offered is in-house and through collaboration with other local and foreign institutions.

9.4 Comments and Analysis

The overall technical infrastructure of the country as far as chemicals management is concerned has improved. There are a number of laboratories with adequate equipment and staff with basic training and would just need a minimum, specialised training to strengthen their understanding and skills in chemicals management. Maintenance of analytical equipment in terms of repair, accessories availability, is a major limitation of a number of the laboratories in the country due to meagre resources.

National policies provide direction and priorities, set up targets and mechanisms for evaluations. The fact that there is as of now, no national policy on chemicals management is a big obstacle. It is heartening to note that there are concerted efforts to develop this policy, the exercise is involving experts from different institutions and also experts of different background.

Chemicals Management activities in the country are being coordinated by the Chief Government Chemist. The fact that Chemicals Management is a multi-disciplinary undertaking, all major

participating institutions will need to build their capacity in their relevant specialisations. This improvement of capacity will reflect positively at national level.

The only significant strength in the national infrastructure is manpower. There seems to be an adequate pool of highly trained personnel, if used effectively can have an impact in improving the national chemicals management programme. The staff would need some specialised training to cover specific issues of chemicals analysis and instrumentation. Continuing education would be required to improve the skills and equip those already in the field.

Formation of networks both nationally and within the region would improve the scope and strength of expertise in chemicals management by providing forums for sharing experience and resources.

Chapter 10

International Linkages

Tanzania is a member of several International Organisation dealing with on the environment, including UNEP, IMO, ILO, WHO. It has also signed/ratified several International Convention/agreement relevant to Management of Chemicals these include:

- Convention on Biological diversity.
- Montreal Protocol on protection of the ozone layer.
- Convention on International Trade in endangered species of wild Fauna and Flora.
- The Basel Convention on Transboundary movement of hazardous waste.
- The Bamako Convention on Dumping of Chemical Wastes.
- Rotterdam Convention on PIC
- Stockholm Convention on POPs

Tanzania is fully committed to following-up and implementing the policies/agreements relevant to Chemicals Management as regards to health safety environmental protection and management.

10.1 Co-operation And Involvement with International Organisation, Bodies and Agreements

Table 10.A provides information on Tanzania's membership in international organisations, programs and bodies while Table 10.B provides information on Tanzania's involvement in international activities and agreements.

Table 10 A: Membership in International Organisation Bodies and Programmes

International Organisation/ Body / Activity	National Focal point (Ministry/Agency & Primary contact)	Other Ministries/Agencies involved	Related National Activities
1) Intergovernmental Forum on Chemical Safety (IFCS)	OSHA (Chief Inspector) Ministry of Labour and Youth Development	• Ministry of Health – Government Chemist Laboratory Agency • ATE • Trade Union Congress of Tanzania	• Chemical Safety • Chemical Waste project
2) UNEP	Division of Environment Vice, President Office - Director of Environment Division	• Ministry of Health • Ministry of Water and Livestock Development, • Ministry of energy and Minerals, • Ministry of Natural resource and Tourism • Ministry of Land, Housing and Human Settlement, • Ministry of Agriculture and Food Security -TPRI	• Pollution control • Measures to protect Biodiversity in lake Tanganyika Project. • Lake Victoria Management programme • Harmonisation of the Legal Regime relating to East Africa region environmental problems • Inventory of Potential Sources of Persistent Organic Pollutants (POPs) in the Country.
UNEP Chemicals	Ministry of Health -Chief Government Chemist	• Ministry of Agriculture and Food Security – TPRI. • Vice President office, Division of Environment and NEMC	• Implementation of Rotterdam Convention. • Information exchange/Dissemination on chemicals management • Establishment of National Register of Potentially toxic chemicals. • Develop and operate an Information Management System. • Provide advice to key policy makers on POPs programmes • Plant Protection programmes
4) IE/PAC Cleaner Production Centre	• Ministry of Industry & Trade • Vice President's	• Ministry of Health – Government Chemist Laboratory Agency • Ministry of Agriculture and Food Security – TPRI.	• Capacity building in chemicals management programs in cleaner production practices • Offer technical assistance through identifying the needs for advisory services to industry and ensuring their provision to companies interested in applying the cleaner production approach.

International Organisation/ Body / Activity	National Focal point (Ministry/Agency & Primary contact)	Other Ministries/Agencies involved	Related National Activities
	Office		• Ministry responsible for environment of the advantages of incorporating the cleaner production approach into environmental policies.
5) IPCS	Ministry of Health – Government Chemist Laboratory	• Ministry of Labour and Youth development, • Office of the Vice President - NEMC • Department of Environment – Zanzibar	• Chemical safety training programme. • Provision of reference materials
6) WHO	Ministry of Health-Permanent Secretary	• Ministry of Agriculture and Food Security - /TPRI • Ministry of Water and Livestock Development • Ministry of Industry and Trade - TBS • Ministry of Labour and Youth Development • Ministry of Health – NFCC, TFNC, NIMR	• Provision of Reference Materials on drug analysis and policy. • Provision of pharmaceutical standards • Malaria Control Programme • Essential Drug programme • Maternal and Child Health/Family Planning. • Expanded Programme of Immunisation. • TB/Leprosy Control programme • Control Diarrhoea diseases/Acute Respiratory Infection • Essential Health Intervention programme. • Plague Control Programme • Mental Health programme • Primary Health Care programme • Provision of drinking water quality guidelines and standards.
7) FAO	Ministry of Agriculture and Food Security • Permanent Secretary, • Registrar Tropical Pesticide Research Institute, • Plant Protection Department.	• Ministry of Health • Ministry of Industry and Trade • Ministry of Water and Livestock Development • Prime Ministers Office (Disaster Management Department).	• Provision of reference Material in Food and Agriculture activities • Implementation of PIC programme • Implementation of FAO Code of Conduct • Information exchange • Implementation of POPs • Provision of Farm imputs
UNIDO		• Vice President Office Division of	• Phase the use of ODSs

International Organisation/ Body / Activity	National Focal point (Ministry/Agency & Primary contact)	Other Ministries/Agencies involved	Related National Activities
Inter-government Forum on Chemical Safety (IFCS)	• Ministry of Industry and Trade Permanent Secretary • Cleaner Production centre	Environment • Industry Associations • Manufactures • Servicing Companies • SIDO • ODSS • Business Council • TCCIA • TCTI • Min. of Health - GCLA, TPRI, Division of Environment (VPO), NEMC	• Ministry of Health – GCLA, TPRI, Division of Environment (VPO), NEMC • Promotion of chemical safety during regular visits to factories • Updating of Factories Ordinance to improve enforcement.
9) ILO	• Ministry of Labour and Youth Development - Permanent Secretary • OSHA	• Ministry of Women, Children and Community Development • TUCTA • ATE • Ministry of Industry and Trade – TBS • Ministry of Health – GCLA • Tanzania Occupational Health Services • Moshi, Arusha Occupational Health Services • Association of Safety practitioners • OTTU	• Child Labour Control Programme • Informal Sector Improvement • Promotion of women employment • Employment Statistics • Work place for improvement for small enterprises • Health and Safety improvement in the informal sector
10) World Bank	Ministry of Finance - Permanent Secretary	• Ministry of Health • Local Government • Vice President Office-Division of Environment • Ministry of Land, Housing and Settlement and Development.	• Health Rehabilitation in Districts • Urban Health Programme • Lake Victoria Environment Management Programme - To improve fisheries activities - To remove water Hyacinth - To conserve biodiversity

International Organisation/ Body / Activity	National Focal point (Ministry/Agency & Primary contact)	Other Ministries/Agencies involved	Related National Activities
			- To control water pollution - To conserve water catchment and wetland areas in the lake Basin
11) Regional Development Bank (African Development Bank)	Permanent Secretary Ministry of Finance	?	?
12) OECD	-	-	• Provision of Reference Material
13) Regional Economic Commission - COMESA	-	-	-
14. IPCS	Ministry of Health (Principle Secretary)	FI, Division of Environment NEMC, GCLA	• Translate into Kiswahili the English IPCS cards • Participating in planning various national activities
19) IAEA	National Radiation Commission	NEMC, Ministry of Health, Ministry of Agriculture and Co-operatives, Ministry of Science, Technology and Higher Education,	• Waste management services/regulations

Table 10.B: Participation In International Agreements/Procedures Related To Chemicals Management

This table provides an overview of country's participation in International agreement/ Procedures related to Chemicals Management.

International Agreements	Primary Responsible Agency	Relevant National Implementation Activities
1) Agenda 21 - Commission for sustainable Development Rio-Convention Earth Summit	Vice President's Office Division of Environment. Ministries of Industries and Trade Local Government Ministry of Lands, Housing and settlement Development Ministry of Water and Livestock Development Ministry of Health. Ministry of Energy and Minerals	• Promotion of the prevention and minimisation of hazardous waste. • Maximising Environmentally sound waste reuse and recycling • Promoting environmentally sound waste Disposal Treatment. • Promote Consumer awareness and active participation of women emphasising their crucial role in achieving sustainable Development
2) UNEP Rotterdam Convention on PIC	Chemist DNA (1) ; Ministry of Health – GCLA OSHA NEMC	• Establishing PIC procedure in Tanzania • Establishment of National import decision on some PIC chemicals (Industrial and consumer chemicals)
3) Rotterdam PIC Convention	Ministry of Agriculture and Food Security - Registrar of Pesticide Tropical Pesticide Research Institute DNA(2)	• Activities for establishing PIC procedure in Tanzania • Establishment of national Import decision on some PIC chemicals (Pesticides)
4) Montreal protocol on ODSs	Vice president office Division of Environment and NEMC. Others: Ministry of Finance, Health, Industries and Trade Industrial Associated Organisation (e.g. TCCIA) and NGO'S TCTC	• Provide policy and advice on legislation in support of the country programme to phase out ODSs. • Compile and disseminate information to public on ozone related issues. • Develop and implement public awareness programme. • Formulate and support the detailed phase out actions identified in the country programme. • Provide and facilitate co-ordination for the proper conduct of phase out actions. • Monitor, assess and guide the progress of the implementation of ODSs Phasing out. • Formulate national policy to co-ordinate implementation of Montreal Protocol
5) ILO Convention	OSHA	• Awareness raising, education and training. • Health surveillance of Workers exposed to chemicals • Participation of Workers representatives during routine inspections
6) UN Recommendation for the transport of dangerous	TBS* NEMC*	• Development of National guidelines for sound management of chemicals

International Agreements	Primary Responsible Agency	Relevant National Implementation Activities
goods (voluntary)	GCLA * Ministry of Transport and Communication	
7) Basel Convention on Control of Transboundary Movement of Hazardous Waste and their Disposal.	Vice President Office Division of Environment and NEMC, Ministry of Health Ministry of Industry and Trade, Ministry of lands, Housing and Settlement Development, Local Government Ministry of Communication Transport	• Undertake inventory of hazardous waste • Promote integration of cleaner production approaches on hazardous waste minimisation. • Encourage industries to recycle reuse, treat waste and disposal of wastes at the source of generation • Promote responsible entrepreneurship. • Awareness raising
8) Chemical weapons	Ministry of Defence Ministry of Home Affairs	NA
9) Regional and subregional agreement - Bamako Convention	Vice President Office Division Of Environment and NEMC, Ministry of Health Ministry of Industry and Trade, Ministry of lands, Housing and Settlement Development, Local Government Ministry of Communication Transport	• Undertake inventory of hazardous waste • Promote integration of cleaner production approaches on hazardous waste minimisation. • Encourage industries to recycle reuse, treat waste and disposal of wastes at the source of generation • Promote responsible entrepreneurship. • Awareness raising
10) Ramsar Convention on Wetlands	Vice President's Office, NEMC UDSM – Marine Biology DOE – Zanzibar Ministry of Water and Livestock Development NEMC	• Water Quality Monitoring • Wet land Management Programmes
11) IMO	NEMC	• Establishment of marine Contingency Plan • Involved in Matters related to Pollution in the Indian Ocean
12) Rotterdam Convention on PIC and Stockholm on POPs	Vice Presidents Office -Division of Environment, NEMC Ministries of Health Ministry of Industries and Trade Ministry of Agriculture and Food Security - TPRI	• Oversee the implementation of PIC procedure activities in Tanzania • National Action Plan preparation • Awareness raising • Inventory of POPs • Capacity Building • Dissemination of Information • Disposal of Obsolete stock

10.2 Participation in Relevant Technical Assistant Projects

Table 10.C provides an overview of all on-going and planned multi-lateral and bilateral assistance activities related to the management of chemicals. The tables lists projects covering aspects of chemicals management as well as sustainable development.

Table 10.C: Participation As Recipient In Relevant Technical Assistance Projects.

Name of Project and duration	International/Bilateral Donor Agency Involved	National Focal Point	Objectives and Relevant Activities.
1) DANIDA Support for Tanzania's National Action Plan under the MIKA Frameworks (1997 to 2002)	DANIDA	Vice President Office, Division of Environment	Target is urban pollution control in Mwanza and other harbours, objectives being: • Establish a sustainable system involving local society in Mwanza urban to undertake measure to reduce urban pollution. • Installation of an oil reception facility plant in Mwanza and other relevant harbours. • Public awareness and involvement in regions surrounding lake Victoria. • Environmental capacity building of consultants and interest groups. • Short-term control of water hyacinth in lake Victoria through mechanical methods. • Eliminate discharge of mercury into the environment. • Create market for energy saving device. • Establish a mobile unit for air pollution measurement, pilot study at Dar es Salaam. • Introduce Environmental Fund to industries.
2) Institutional capacity building	• SIDA • USAID • World Bank	NEMC	• Environmental Management of Chemicals • Hazardous Waste Management • Lake Victoria management/Wet land component • Environmental Monitoring • Impact assistance • Environmental of lower Kihansi

Name of Project and duration	International/Bilateral Donor Agency Involved	National Focal Point	Objectives and Relevant Activities.
3) Lake Victoria Fisheries Research Project (Phase II) 1995-1999	European union	Ministry of Natural Resources in the three countries	Objective: Securing sustainable development in the Lake Victoria Basin. Activities: • Support to the management and scientific countries. • Training and upgrading of librarians • Fish stock assessment • Catch assessment survey • Development of pilot community management initiatives.
4) Marine and Waters Programme	IUCN	NEMC	Monitoring of Marine & waters quality
5) Drug Abuse Project	UNDCP	GCLA	• Donation of Varian 3330/GLC equipment
6) GTZ project	GTZ	TPRI	Integrated Post Harvest pest management
7) FAO/IAEA Joint project	FAO/IAEA	TPRI	• Food security programme • Biological assessment of effect of pesticides used for the control of maize and rice stalk borers, and weeds in Dodoma and Morogoro
8) FAO/IAEA project	FAO/IAEA	TPRI	• Increasing food security in sub Saharan Africa • Monitoring of pesticides residues in soils, leaves straw, corn and tarsale for fields sprayed with endosulfan, carbofuran and 2,4-D in maize and rice growing districts of Kongwa, Kilombero and Morogoro rural.
9) WHO project	WHO	TPRI	Comparison of treatment seeking behaviour and projection against malaria, pesticide registration and control
10) Strategies and Mechanisms for Promoting Cleaner Production Investments	UNEP	Vice Presidents Office, Division of Environment	• To increase investments in Cleaner Production in Industries • Conduct study on past investments practices; • Assess capacity building needs in cleaner production training and awareness; • Formulate curricular and training modules • Awareness rising in Cleaner Production.
11) Capacity building on Chemical safety.	UNITAR/IPCS	GCLA	Training and Workshop on chemical safety

Name of Project and duration	International/Bilateral Donor Agency Involved	National Focal Point	Objectives and Relevant Activities.
12) Information Access and Network (2000) *	UNEP	GCLA	• **Installation of wireless link.** • **Training on computer programming (basic training) for GCLA staff**
13) Africa Stock piles programme**	FAO	NEMC	• About 1200 metric ton of absolute Chemicals were Identified (Pesticide 1000 tons and 200 tons Veterinary drugs) • Disposal Initiatives • Waste management Programme

* Still under negotiation.
** Still under negotiation

10.3 Comments and Analysis

- Few national activities related to the implementation of international agreements have been undertaken due to financial constraints, low level of awareness and poor co-ordination amongst decision-makers and participating institutions.
- National Planning Committee is supposed to co-ordinate various national sectors and the activities of international organisations. This exercise needs to be well integrated into practical national programs rather than policy alone.
- The formation of networking amongst the partners involved in chemicals management has allowed exchange of information obtained from various International agencies to be shared more effectively.
- International agencies can increase the effectiveness of their programmes by following the consultative approach by considering National priority in formulation of the programmes.

The chemicals management activities are currently coordinated by the Government Chemist Laboratory Agency, this has enabled to minimize the duplication of activities in implementing international agreements

Chapter 11

Awareness/Understanding of Workers and the Public

This chapter provides an overview of the mechanisms available to disseminate information to workers and the general public concerning the potential risks associated with chemicals production or formulation, importation, exportation, transportation, handling, distribution, use and disposal.

11.1 Government and Non-government institutions Creating and Enhancing Awareness on Chemicals Management:

Governmental institutions involved in promoting awareness are:

a) Division of Environment - Vice Presidents Office in Tanzania Mainland and the Tanzania Islands Division of Environment, under the Commission for Lands and Environment.
b) National Environmental Management Council (NEMC) – Vice President Office.
c) Tropical Pesticide Research Institute (TPRI) and Plant Health Services (PHS) – Ministry of Agriculture and Food Security
d) Occupational Safety and Health Agency (OSHA) – Ministry of Labour and Youth Development.
e) National Radiation Commission (NRC) – Ministry of Science, Technology and Higher Education.
f) The Cleaner Production Centre for Tanzania (CPCT) – Ministry of Industries and Trade.
g) The Government Chemistry Laboratory Agency (GCLA) – Ministry of Health
h) Tanzania Bureau of Standards (TBS) – Ministry of Industries and Trade.
i) Local Government – Ministry of Regional Administration and Local Government, Prime Minister's Office
j) Pharmacy Board – Ministry of Health
k) Tertiary education and research institutions

Non-Governmental institutions involved in promoting awareness are:

a) Trade Union Confederation of Tanzania (TUCTA). It is an apex organisation with several affiliates covering all sectors of economy. TUCTA has directorate with programmes on occupational healthy and safety.
b) Association of Tanzania Employers (ATE), it performs promotional activities conducting training courses, sensitisation/awareness raising, workshops to enlighten employers on health and safety.
c) AGENDA, formed in 1994 with objectives to promote an environmentally responsible, transparent and accountable entrepreneurship in the country. Its activities broadly cover development of network of individuals and organisations mainly in the business sector. AGENDA awareness raising programs is done through newsletters both in Kiswahili and English and newspaper articles.
d) Agrochemical Association of Tanzania (AAT), this in collaboration with international agrochemical traders, aim to raise awareness on the use of agrochemicals for the retailers and distributors of such chemicals. It conducts regular courses to advocate management of Agrochemicals.
e) The Journalists Environmental Association of Tanzania (JET), this association is involved in publicity of environmental issues. It publishes a number of articles related to chemical management in both Kiswahili and English. Also it conducts awareness raising seminars and workshops; exchange opinions and views; for various groups including policy makers, grass root people and journalists. It conducts research and micro studies on environment, women issues and development in general.

f) Tanzania Occupational Health Services (TOHS) provides occupational health services (OHS) both preventive and curative for industries and companies in Dar es Salaam and Morogoro. They have a programme of visiting their members where among other issues of concern is advising on proper handling of chemicals.
g) Moshi – Arusha Occupational Health Service provides occupational health services (OHS) both preventive and curative for industries and companies in Moshi and Arusha. They have a programme of visiting their members where among other issues of concern is advising on proper handling of chemicals.
h) Lawyer Environmental Association of Tanzania (LEAT). It promotes information dissemination and legal advice on environmental issues.
i) Tanzania Media Women Association (TAMWA). It coordinates media women efforts in addressing issues including environmental protection and public health.
j) ENVIROCARE. This is NGO whose main activities include environmental protection and research on impact related to the use and handling of pesticides.

11.2 Information to Workers

Awareness campaigns on chemical safety to workers and farmers are usually made during regular visits made by various officials from government (including inspectors from government institutions) and nongovernmental institutions.

The extension workers of government institutions play a significant role in the awareness raising for rural population on the use and handling of chemicals.

However, the degree of awareness achieved from the above initiatives is low due to the fact that:

i) Inspectors are inadequate, and thus the visits are not frequent.
ii) There is lack or limited resources e.g. fund, transport, stationery.
iii) Some recipients do not regard chemical safety as one of the priorities.
iv) There is inadequate co-ordination between different institutions that deal with chemical management.
v) Poor means of communication between service provider and their clients.

11.3 Awareness Raising

There are different ways of disseminating information to the public, these include:

a) Legal Instruments

Currently, there are various legal instruments with a regular mechanism to raise awareness/understanding of chemical safety and risks to health and environment to the public.

b) Newspapers / Newsletter

i) Various entities publish chemical management issues in local newspapers (Kiswahili and English).
ii) Feature articles, coverage of workshops / seminars/training, deliberations/recommendations in newspapers during sessions.
iii) Various newsletters publish by different organisations covers issues on chemicals management.

c) Leaflets and brochure

d) Radio/TV programmes

Various radio and TV programmes are produced regularly in the area of chemical safety, agriculture, environment and technology.

11.4 Education

In terms of education, Chemical safety issues are included in the curriculum of the higher learning institutions. For example;

i) TPRI – Best Management Training: conducted for pesticide fumigators / pest controllers and retailers two times a year addressing, legislation, safe use and handling of pesticides.
ii) Muhimbili School of Hygiene (MSH) offers courses on chemical safety.
iii) The Department of Chemical and Process engineering at the University of Dar es Salaam is offering a course on Work Environment and Chemical Safety. It also runs continuing education courses in the same. But this has not succeeded because industries are not able to sponsor their employees.
iv) All students/researchers working in laboratories are given some knowledge on chemical safety before performing any tests.
v) MUCHS – Environmental Health Science started in 2001. It incorporates chemical safety in its second and third year.
vi) Environmental engineering course at UCLAS contains substantial hours of lectures on chemical safety.
vii) Environmental issues have been incorporated primary, secondary and tertiary education levels.

Chapter 12

Resources Available and Needed for Chemical Management

12.1 Resources Available and Needed in Government Ministries/Institutions

This chapter provide an overview of the resources available within Government related to various aspects of Chemicals Management including human and financial resources. It further gives analysis of resource needs.

In Government Ministries/Institutions

Table 12 provides an overview of the available and needed resources for Management of Chemicals within Government ministries/Institutions/agencies and other institutions.

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

Ministry/institution concerned	No/ professional staff involved	Type of expertise available	Financial resources available (per year)	Training requirement
1) Environment-Vice President's Office-National Environment Management Council	50	Ecologists, engineers, chemists, environmental technologists, lawyers, biologists, public officers	Regular budget available + donor funds	
2) Environment-Vice President's Office - Division of environment	10	Environmental technologists, engineers, chemists, lawyers	Regular budget available + donor funds	
3) Ministry of Health - Chief Government Chemist	56	Chemists, laboratory technologists, food technologists, microbiologists, pharmacist, environmental technologist.	Regular budget available + donor funds	
4) Medical Stores Department	260	Pharmacists, Chemical Stores Experts, Pharmaceutical Assistants, Chemists	Regular budget available	
5) Tanzania Food and Nutrition Centre	25	Food technologists, chemists, microbiologist, nutritionist laboratory technologists,	Regular budget available	
6) Pharmacy Board	52	Pharmacists, pharmaceutical technologists, microbiologists, veterinary and medical doctors	funded by central government, and Registrants	

7) Ministry of Agriculture-TPRI	42	Toxicologists, environmental technologists, agricultural officers, chemists, research offices, biologists	Regular budget available	
8) Ministry of Agriculture and Food Security - Plant Protection Department	95	Entomologists, environmentalists, agricultural officers, sprayers, biologist, crop inspectors	Regular budget available	
9) Ministry of Labour and Youth Development - OSHA	24	Engineers, factory inspectors, occupational health officers, hygienists, chemists, ergonomics	Regular budget available	
10) Ministry of Science and Technology and higher Education	37	Engineers, chemists, technologists, chemical laboratory technician, geologist	Regular budget available	
11) Ministry of Industries and Trade	3	Engineers	Regular budget available	
12)Ministry of Home Affairs - Anti Drug Unit	40	Engineers, lawyers, Policemen, chemists	Regular budget available	
13) Ministry of Home Affairs - Fire and Rescue Services	89	Rescue and safety Experts, fire fighters	Regular budget available	
14) Ministry of Science, Technology and Higher Education - National Radiation Commission (NRC)	15	Physicists, engineers, chemists, radiologists	Regular budget available	
15) Ministry of Industries and Trade-Tanzania Bureau of Standards	60	Chemists, agriculturalists, food technologists, biologists, physicists, laboratory technologists, engineers	Regular budget available	
16) Tanzania Harbours Authority- Fire and safety Department	25	Fire and safety experts, fire fighters	Regular budget available	
17)Ministry of Water and Livestock Development	20	Water engineers, chemists, microbiologists, hydrologists, biochemists, veterinary doctors	Regular budget available	

12.2 Resources Needed by Government Institutions for Management of Chemicals

Regular specialized training on Chemicals Management is required to update knowledge of experts.

12.3 Comments/Analysis

- Most of the key institutions which deal with Chemicals Management are under-funded and as a result, Chemicals Management activities are not given due priority.
- The mandate of Chemicals Management is with the Ministry of Health and in this respect the Government Chemist Laboratory Agency is the coordinating body. In view of the sectoral development approach in effect in the country, this coordinating function is of vital importance in rationalising resources. Process to institutionalise the coordinating arrangement need to be improved or even legalised.
- More effort is needed to enhance awareness programmes in Chemicals Management.
- Resources required for effective Management of Chemicals are insufficient, consolidated efforts are needed to give Chemicals Management its due priority.