UPDATING THE NATIONAL PROFILE FOR THE PREPARATION OF A NATIONAL IMPLEMENTATION PLAN (NIP) FOR THE STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS (POPs)

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ACRONYMS

AOAC Association of Official Analytical Chemists
CILLS Comite Interetat pour la Lutte contre la Sacheresse dans le Sahel
CIPAC Collaborative International Pesticides Analytical Council
CRD Central River Division
EIA Environmental Impact Assessment
FAO Food and Agricultural Organization
FID Flame Ionisation Detector
GBA Greater Banjul Area
GC Gas Chromatography
GLP Good Laboratory Practice
GTTI Gambia Technical Training Institute
HCPCMA Hazardous Chemicals and Pesticides Control and Management Act
IAEA International Atomic Energy Agency
ICCS International Conference on Chemical Safety
IFCS Inter-government Forum on Chemical Safety
ILO International Labour Organization
IOMC InterOrganisation for the Sound Management of Chemicals
IPCS International Program on Chemical Safety
ISIC International Standard Industrial Classification of all Economic Activities
ITC International Trypanotolerance Centre
LRD Lower River Division
DSTIE Department of State for Trade, Industry and Employment
DoSA Department of State for Agriculture
DoSH Department of State for Health
MRC Medical Research Council
NARI National Agricultural Research Institute
NAWEC National Water and Electric Company
NBD North Bank Division
NEA National Environment Agency
NEMA National Environment Management Act
NGO Non-governmental Organization
NSGA Nova Scotia-Gambia Association
PC Personal Computer
PIC Prior Informed Consent
POP Persistent Organic Pollutants
RVTH Royal Victoria Teaching Hospital
TLC Thin Layer Chromatography
UN United Nations
UNDCP United Nations Drug Control Program
UNDP United Nations Development Program
UNEP United Nations Environment Program
UNITAR United Nations Institute for Training and Research
URD Upper River Division
WD Western Division
WHO World Health Organization

Executive Summary

The Gambia is a Party to the Stockholm Convention on Persistent Organic Pollutants. Under this Convention, Parties are required to develop national Implementation Plans (NIPs) that summaries the presence and use of POPs in the country and describe its implementation.

The profile covers Agricultural Chemicals (pesticides and fertilizers), pesticides used for Public Health and in Industrial and Consumer use, Chemicals used in Industrial Processes and in Consumer products (paints, cleansing products, solvents etc.) and Petrochemicals.

Chemicals are imported into the country and are largely used in the agricultural sector to boost annual yields. Industrial and Consumer Chemicals are also registering an increased use. The major priority concerns in The Gambia related to the management of chemicals is:

1. The reluctance by importers to provide accurate and reliable data indicating regular imports of chemicals into the country
2. Chemicals are increasingly used in agricultural production to boost annual yields by being used as fertilizers and pesticides
3. Improper handling and indiscriminate use and sale of chemicals
4. Soil contamination after the misuse or overuse of agrochemical
5. Residues in food which can cause health hazards and which cannot be analyzed
6. Pollution of water bodies

The Gambia is ranked among the least development countries in the world. It has a population of 1,025,867 people with a density of 96-persons/square kilometer. The urban population accounts for 37.1% while the rural 62.29%. It is divided into five Administrative Divisions excluding the urban conurbation of Banjul and Kombo St.Mary. It is characterized by a large agricultural sector, a relatively small industrial sector, and a large service sector dominated by government. Crop and livestock production and fisheries characterize the agricultural sector. The industrial sector is classified into formal and non-formal manufacturing, building and construction and tourism. The mineral resources include ilminite, quartz sand, kaolinite and plastic clay, laterite and cockleshells. In 1999, agricultural, industrial and services sectors contributed 33%, 13% and 54% respectively to the GDP.

The Industries are concentrated in the urban areas, particularly in the Banjul and Kombo areas and decentralization needs to be encouraged. Industrial Agriculture is another area that needs to be enhanced
The Gambia's production of chemicals is very minimal if not negligible. On the other hand, it imports a large quantity of chemicals ranging from agricultural, industrial to consumer chemicals. Petroleum products are

imported and used on a large scale, followed by other consumer chemicals and then agrochemical.
The NEA has a database on the nature, type and quantities of all chemicals imported into the country since 1997. There is the need for the agency to have a website to make such information easily accessible.

The priority concerns related to chemical import and use are varied. In the Greater Banjul and Kombo areas, the concern stems from problems such as pollution of groundwater from hazardous waste (clinical waste, industrial waste, heavy metals) dumped indiscriminately, air pollution from waste dumpsites. Outside these areas, the problem is mainly pesticides and other agrochemicals and heavy metals from batteries. The low level of awareness of potential risks associated to the use of chemicals among users and the general public, inadequate data on specific chemical poisoning coupled with the unavailability of data relating to groundwater and air due to these hazardous chemicals makes it difficult to address such concerns. The lack of resources, both human and financial is another contributing factor. Lack of a residue laboratory and inadequate capacity at existing laboratories contributes to lack of information in chemical pollution in air, soil and water. The NEA should make use of its sub-regional co-operation with Locutox in Senegal for analysis of pesticide residues to generate a baseline data.

A strong national legal regulatory framework has been established in The Gambia for the proper management of chemicals. This framework, the Hazardous Chemicals and Pesticides Management Control Act (HCPMCA) administered by the National Environment Agency enacted in 1994 is the only national legal structure that adequately addresses the control and Management of Chemicals in the Gambia. This regulatory framework replaced the 1983 Pesticides Management Act and made provisions for the establishment of a **Hazardous Chemicals and Pesticide Management Board** (HCPMB), a regulatory body responsible for the registration, licensing and management of all hazardous chemicals & pesticides. It also makes provisions for enforcement.

The National Environment Management Act, to a certain extent does address environmental pollution including pollution from chemicals. This was done through the establishment of Environmental Quality Standard Regulations 1999, the Industrial Registration and Discharge Permit Regulations, the Environmental Impact Assessment Regulations the Waste Management Regulations. Other legal instruments that directly or indirectly address chemical management are: -

The Medicine Act
The Water Resources Act
The Public Health Act
The Local Government Act
The Petroleum Act
The Fisheries Act
The Plant Importation Act
The Prevention of Damage by Pests Act

Other Regulatory Mechanisms: -
The Montreal Protocol. This addresses the control of emissions from Ozone depleting Substances.
The Hazardous Chemicals and Pesticides (Prior Informed Consent Procedure) Regulations, 2002, the Hazardous Chemical and Pesticides (Persistent Organic Pollutants) Regulations, 2002 and The Pesticides Registration and Licensing Regulations, 2002 are in final stage to incorporate the Rotterdam Convention on Prior Informed Consent Procedures, The Stockholm Convention on Persistent Organic Pollutants and CILLS Common Registration into the Laws of the Gambia

Incentive mechanisms have been put in place for government officers assisting the NEA other types of incentives such as tax reduction are also practiced by the Customs Department. The prior Informed Consent Procedure is another tool, which aids in decision-making concerning chemical importation. Most PIC chemicals are on the list of Banned chemicals in the Gambia. Alternatives to these chemicals have been identified.

There is little or no overlapping between any of the above- mentioned Acts and the Hazardous Chemicals and Pesticides Control and Management Act. The enforcement of the latter is not without its constraints. Some of the major setbacks are: -

1. Inadequate and qualified personnel,
2. Low level of awareness of the populace,
3. Difficulty to control the entry of chemicals through the border. This border porosity is due to the unusual geographical position of The Gambia.
4. Impostors (unscrupulous persons posing as NEA inspectors with the intention of collecting registration or licensing fees from dealers).
5. Inability of the NEA to enforce its laws is a major setback in its drive to maintain a pollution free environment. The law is only as effective as the will of the state to enforce the law and ensure that it is obeyed. There is an urgent need for the agency to enforce the environmental impact assessment regulations and its mitigating measures, the implementation of environmental audits and implementation of industrial registration and discharge permitting system. An effective compliance and enforcement program entails:

1. Creating enforceable requirements
2. Promoting compliance through sensitization and awareness creation
3. Monitoring compliance
4. Responding to violations

In the area of pesticide regulation enforcement, notable achievements have been made: -

- Regulations are in place,
- Effective monitoring is carried out by the Inspectors,
- Substantial amounts of banned pesticides have been confiscated,

- The present of banned and illegal; chemicals have been detected in some pesticide samples through analysis,
- Over eight hundred applications for licensing to (import, sell, warehouse or commercially apply) have been received since 1995,
- Twenty pesticides have been declared banned and twenty five are severely restricted,
- About one hundred and thirty pesticides have been registered by the HCPCMB.
- Data base of pesticides imported from 1997 to date available

The Board provides a forum where institutions engaged in the management of chemicals interact frequently. Board meetings are scheduled monthly and as and when the need arises.

Co-operation management' of chemicals is a methodology used in the Gambia. This is done in the form of inter-ministerial commissions and the establishment of co-coordinating mechanisms. These co-coordinating mechanisms exist in the form of Boards (e.g. HCPCMB), Working Groups and Councils as follows:

1. The National Environment Management Council - (formed under the auspices of the National Environment Management Act, NEMA)
2. The Hazardous Chemicals and Pesticides Control & Management Board
3. The Medicines Board
4. The National Agricultural Research Board
5. Combined Joint Industrial Council
6. The Water Resources Commission

The memberships of these are largely drawn from Government departments and the private sector.

Different institutions with specific roles and responsibilities in the management process manage the different classes of Chemicals available in The Gambia. The HCPCMB, by virtue of its mandate, has a responsibility in the management of all types of chemicals (other than Pharmaceuticals).

The National Environment Agency, Department of State for Trade, Industry & Employment, Department of State for Finance & Economic Affairs and the Customs & Excise department, The Department of State for the Interior and the Private Sector carry out management of Petrochemicals. These institutions are responsible for the importation, storage, distribution and marketing of petrochemicals.

Chemicals used in Agricultural production and Public Health are managed by the National Environment Agency; Department of State for Health, Social Welfare and Women's Affairs; Department of State for Agriculture; Department of State for Trade, Industry and Employment; The Gambia Chamber of Commerce; Ministry of Finance & Economic Affairs (particularly the Customs and Excise Department); the Private Sector; Research Institutions and the NGOs. The institutions in one way or the other

are involved in the importation, storage, distribution, marketing and dissemination of information to the public.

Industrial and Consumer Chemicals. The above-mentioned institutions manage these chemicals, but the Private Sector and the NGOs are very much involved in the management and use of these chemicals.

Although the Agency is in contact with the other institutions through its Working Groups, there is room for more consultation and dialogue to avoid a reduplication of effort. The NEA should use its mandate as the lead Agency in Chemicals Management to co-ordinate the activities of all these institutions. The Gambia Environment Action Plan (GEAP II) is geared towards addressing the inadequacies of GEAPI. These are primarily sustainable natural resource management, energy and environmental health. This will include strengthening regulatory framework and enforcement of the regulatory codes among other things.

Voluntary initiatives by industries or research-oriented studies by NGOs have not been undertaken in the country. Although such organizations are involved in community-based activities, they could be used as channels in the education of the public on the dangers of chemical misuse and overuse.

The existence of provisions in The National Environment Management Act to maintain a sound and healthy environment for all Gambia's encourages public awareness building on the proper management of chemicals.

The following communication channels are used in the awareness creation process:

1. Public Information Meetings
2. Public Notices and Posters
3. Focus Group Meetings
4. Production of General Information on the management chemicals
5. Radio & Television educational programs

Several government institutions have established environmental Education Programs within their respective units and carry out various awareness creation activities.

1. The National Environment Agency
2. The Agricultural Communication Unit
3. The Forestry Department - Ministry of Agriculture
4. Dept of Parks & Wildlife Management
5. Ministry of Education - Department of Non formal education

Non Governmental Organizations are actively involved in the sensitization of communities especially on environmental matters. The key institutions involved in this area of work are as follows: -

1. Worldview International

2. Association for the Development of Women & Children (ADWAC)
3. Catholic Relief Services
4. Stay Green Foundation

Awareness creation on the management of chemicals is an important element of risk reduction activities in chemicals' management. Industries involved in the management of chemicals need to be aware of risks involved in the management process and a safe and healthy environment needs to be maintained for its working population. This could be sustainable with ongoing educational programs. More awareness creation needs to be done especially at the community/village level. Although some government departments and NGOs are already involved in the process, sensitization on the issue of chemical management in the Gambia needs to be intensified.

1. In the area of risk reduction, the small number of industries in the Gambia does meet the minimum requirements needed to maintain a safe working environment for its employees.
2. Information Management of chemicals in the Gambia is still in its primary stages, and is carried out by two different categories of people
   a) Information suppliers
   b) Information users

Existing information sources are:

1. The Department of State for Health Social Welfare and women's Affairs
2. National Environment Agency
3. Department of State for Agriculture
4. Department of State for Trade
5. Pesticide Dealers

Information users are mostly institutions in the research field, National Libraries, The Gambia College Non-governmental organizations and consumer organizations.

Types of available local data on chemicals are:

1. Import Statistics
2. Export Statistics
3. Chemical use Statistics
4. Industrial Accident Reports
5. Occupational Health Data
6. Poisoning Statistics
7. Hazardous Waste Data
8. Registration and Licensing of Pesticides
9. Register of Toxic Chemicals
10. Types of Pesticides analyzed
11. Inventory of existing chemicals
12. PIC decisions

Information can also be obtained from local literature.

International Literature on Chemicals exist in the form of manuals, handbooks, guidelines, journals, newsletters, prepared mostly by International Organizations like the World Health Organization, Food and Agricultural Organization and the International Program on chemical Safety (IPCS). Other regional and sub-regional organizations produce literature. International databases like the IRPTC, ILO; OECD is located at the National Environment Agency and other relevant institutions.

However for the establishment of an effective national Information exchange system, a networking system has to be established with a wide range of information sources with data stored in a user-friendly manner available for general public use. The national information exchange system should have the following features to be effective: -

1. Ensure that national capacity exists to support decision-making,
2. Provide a mechanism of Interaction between scientists, decision-makers and users
3. Establish and reinforce networks both with international and national partners,
4. Provide a structural methodology of managing chemical data
5. Maintain a capacity to make relevant information accessible.

Inadequate resources both human and material resources are a major constraint in most environmentally related projects in most third world countries, and the Gambia is no exception. Inadequate funding affects most its projects.

An estimated number of forty professional staff works in the field of chemicals management in the Gambia, from various government Departments of State and State departments. These professional staff in their capacity as chemists, biologists, pharmacists, laboratory technicians, public health inspectors, veterinarians, doctors, entomologists and phytopathologists are housed in the National Environment Agency, Department of State for Health, Department of State for Agriculture, State Department of Water Resources. However, some are on secondment with International Organisation or working for projects within the Gambia.

The same inventory of professional staff has not been carried out for the Private Sector and the NGOs. An inventory of laboratories show that there are quite a few existing laboratories in the private sector although some of the equipments used are not very sophisticated. It is important to note that all the laboratories utilize internationally recognized protocols in their specific areas of work. A number of links have been established with laboratories both within and outside of the region.

In the field of training, there are no established programs related to chemical management training is carried out as part of development projects, both technical and capacity building-oriented and is directed to provide managerial skills relevant to the project. Training is carried out both locally and abroad

and the level of training depends on the requirement. In collaboration with the NEA, the Ministry of Education and other higher educational institutions are gradually incorporating environmental education in their syllabi, including chemical management issues. The university of the Gambia is offering Environmental Science as a major and will fill the gap in the near future.

After a thorough analysis of the findings from the national profile it was collectively agreed that human resources were needed for some activities of chemical management carried out by specific institutions. More funds need to be solicited from donor Agencies. Donor co-ordination should be a critical aspect of the process to avoid funding overlapping functions and activities.

The Gambia has had various chemically related programs funded by the United Nations Development Program (UNDP), United Nations Industrial development Organisation (UNIDO), United Nations Institute for Training and Research (UNITAR), Inter-Organization Program for the sound Management of Chemicals (IOMC), World Bank (WB), International Development Agency (IDA) project, United Nations Environment Program (UNEP) and World Health Organization (WHO).

In the international arena for the strengthening of its programs in the field of Chemicals management, the Gambia is a party to several international agreements.
Agenda 21
UNDP London Guidelines
FAO Code of Conduct
Vienna Convention/Montreal Protocol
ILO Convention
UN Recommendation for the Transport of Dangerous Goods.
Basel Convention/Bamako Convention
WTO Agreement
Chemical Weapons convention
CILS common registration program for pesticides
Convention on Climate Change
Rotterdam Convention on Prior Inform Consent Procedures
Stockholm Convention on Persistent Organic Pollutants

The National Profile would serve as a key document to develop strategies to address already existing problems in the field of chemical management in the Gambia. A National Implementation Plan for management of POPs will follow this exercise. The following priorities should be included in the Implementation Plan: -

1. Establishment of a more reliable system of information gathering and dissemination
2. Establishment of a more effective sensitization mechanism
3. Improvement of control systems (monitoring, enforcement, analysis, border-point checking).
4. Improvement of quality of existing staff through training
5. Availability of adequate human material and financial resources

6. Enhanced regional co-operation and networking.

Introduction

Since the 1980's several international policy instruments have been adopted which addresses specific aspects of chemicals management. These include;

a) The United Nations Environment Program London Guidelines for the exchange of information on chemicals in international trade.
b) The Food and Agricultural Organization International Code of Conduct for the Distribution and Use of Pesticides
c) The International Labour Organization Convention on the Safety of Chemicals at the Workplace.
d) The International Labour Organization Convention Concerning the Prevention of Major Industrial Accidents.
e) The Montreal Protocol on Substances that deplete the Ozone Layer.

These have been followed by other resolutions and conventions adopted by the International community.

The 1992 United National Conference on Environment and Development was a significant step towards sustainable development. Heads of State of more than one hundred and fifty member states of the UN adopted Agenda 21, a comprehensive document outlining responsibilities of States towards achieving environmentally sustainable development.
Chapter 19 of Agenda 21 outlines six program areas for action to ensure the environmentally sound management of chemicals as follows:

- ✓ Expanding and accelerating international assessment of chemical risks;
- ✓ Harmonization of the classification and labeling of chemicals
- ✓ Information exchange on toxic chemical and chemical risk;
- ✓ Establishment of risk reduction programs
- ✓ Strengthening of national capacities and capabilities for the sound management of chemicals; and
- ✓ Prevention of illegal international traffic in toxic and dangerous products

In response to the invitation of Agenda 21, the Executive Heads of the International Program on Chemical Safety (IPCS) decided to convene an International Conference on Chemical Safety (ICCS) in Stockholm in April 1994. This conference established the Intergovernmental Forum on Chemical Safety (IFCS). IFCS adopted Priorities for Action plan to implement the recommendations of Chapter 19 Agenda 21. One of these priority actions is the preparation of National Profiles for chemical management. The Gambia benefited from the UNITAR/IOMC program and prepared it National Profile in 1998.

The Stockholm convention on Persistent Organic Pollutants (POPs) was opened for signature and adoption at a Conference in Stockholm, Sweden in May 2001. The objective of the convention is to protect human health and the environment from Persistent Organic Pollutants. The Gambia signed and adopted the Convention in May 2001 and ratified it in September 2003. Article 7 of the Convention requires Parties to prepare National Implementation Plan

(NIPs) and assess their capacities to implement the plans. The NIPs will also form the basis for a phase out/reduction program and ultimate elimination of POPs at country and global levels. The action plan will outline all aspects of POP management, including general sensitization mechanisms and strategies for waste disposal.

The objective of NIP development is to have an Implementation Plan that meets the requirements of the Stockholm Convention and contributes to the effective management of POPs in the Gambia.

The National Environment Agency (NEA) is responsible for the implementation of NIP development. The NEA has established a projection coordination mechanism consisting of a National Coordination Committee (NCC) comprising of major stakeholders involved in POPs activities and a Project Coordination Unit (PCU) to carry out the day to day implementation of project activities.

The process of developing a NIP has been divided into five phases:

1. Establishment of Coordinating Mechanism and Process Organization
2. Establishment of POPs inventories and Assessment of National Infrastructure and Capacity
3. Priority Assessment and Objective Setting etc.

Baseline data gathering and generation to give an assessment of the POPs issues requires an updated National Profile for the Gambia (including relevant country background information.)

Although a National Profile to assess the capacity of the country to mange her chemicals was prepared and published in 1998 and the participation was broad-based, there is still low level of awareness of the populace with regards to chemicals in general and POPs in particular. Therefore the need to develop new philosophies through well-planned sensitization campaigns is vital to the success of the Problem. The Profile also needs to be updated to take on board new developments with regards to chemical management both at the national and international level.

It is against background that the PCU assigned a Task Team considered as local consultants to review the National Profile to reflect the new developments with regards to international conventions on chemicals.

The specific assignment of the Team is to:

1. Work in close collaboration with the Project Coordination Unit (PCU), set up under the Project, and using Project Plan as guidance document;
2. Gather current data on chemicals, including POPs production, import, export and use;
3. Gather data and information on POPs especially on POPs related industrial use;
4. Identify and organize the management requirements that are specific to POPs;
5. Specify and incorporate priority concerns related to POPs;

6. Make an overview of the available technical infrastructure for chemicals management;
7. Make an overview of the legal instruments and non-regulatory mechanisms for managing chemicals including POPs;
8. Scrutinize the mandates and programs of various public and private institutions responsible for various aspects of chemical management;
9. Search for and describe the activities of industry, NGOs and research entities relevant to POPs management;
10. Define the necessary instruments for awareness creation of workers and the public with respect to chemicals management;
11. Analyze the mechanism of cooperation and coordination of government and non-government bodies in the areas of chemicals management;
12. Update all relevant sections to include POPs;
13. Update all sections to conform with current situation of chemicals management at the national and international levels;
14. Perform any other work relevant to the assignment

Twelve POPs have been listed by the international community and slated for regulatory action. These include nine pesticides (aldrin, chlordane, DDT, dieldrien, endrin, heptachlor, mirex and toxaphene), two industrial chemicals (polychlorinated bipheyls (PCBs) and hecxachlorobenzene, which is also a pesticide), and unintended by-products of combustion and industrial processes polychlorinated dibenzo-p-dioxins (PCDD) and dibenzofurans (PCDF). The two most familiar POPs in the Gambia are DDT and PCBs, and the control of these POPs has been identified as a priority. In 1997, the NEA in collaboration with other relevant institutions conducted an inventory of obsolete pesticides, including DDT, and in 1999, the stock was shipped to UK for high temperature incineration. Although it is recognized that the Roll Back Malaria Control program contributes to the effort to curb the use of DDT in this country, a national debate to revert to its use as the most effective alternative to fight mosquitoes, has started.

Chapter 1 National Background Information

1.1 Physical and Demographic Context

Located on the West African coast, the Gambia stretches 350-kilometre inland from West to east on either side of the River Gambia. The country varies sin width from approximately 50km near the mouth of the River to about 24 kilometres upstream. The Gambia is bound to the North, South and East by the Republic of Senegal and to the West by the Atlantic Ocean. The river Gambia runs the entire length of the country, thereby dividing its land area of 10,689 square kilometres almost equally into two halves- the South Bank and North Bank.

The Gambia attained internal self-government from British rule in 1963 and full independence on the 18th February 1965. The country became a sovereign Republic within the Commonwealth in 1970. Maintenance of mult-party democracy and the adherence to the rule of law constitute an integral part of the country's political framework, which basically comprises of executive, the Legislature, the Judiciary and the Press. The President, who is elected every five years by universal suffrage, heads the government. Elections are also held every five years for members of the country's National Assembly.

English is the official language of the country on which all government matters are translated. In addition to this, a number of local languages are spoken including, Mankinka, Fula , Wollof, Jola, Sarhule, Serer, Manjago and Mankange.

The population of the Gambia is currently estimated at 1,364,507. With its land area, this makes The Gambia one of the most densely populated countries in Africa with 128 persons per square kilometre. Out of this population, the urban population accounts for 40 % whilst 60 % accounts for the rural population. This distinction between urban and rural is predominantly based on the general occupation of the majority of the population. Thus the rural economy is predominantly agricultural with urban settlements characterised by intense commercial activities as well as formal and informal sector employment.

In terms of gender distribution, there are 687,781 females to 676,726 males as of 15th April 2003. The population is characterised by a youthful population with 44% below the age of 15 years. Average life expectancy is 55 years. Currently, the literacy rate, which is barely 40%, is higher among males (55%) than female (27%). There is an improvement, however, as the current Gross Enrolment Ratio (GER) at the basic education level incorporating Madrassa, is at 83%, of which girls enrolment is faster than that of boys.

1.2-Political /Geographic Structure of the Country

The Gambia is divided into five Administrative Divisions and the Urban Conurbation of Banjul and Kanifing. Each of the divisions is further divided into Districts, which are headed by Chiefs, with a total 42 Districts in the country.

Under the new Local Government reforms and decentralisation, the country is divided into 8 Local Government Areas, two municipal Authorities (Banjul and Kanifing) and six Local Government Authorities (Brikama, MansaKonko, Kerewan, Kuntaur, Janjanbureh and Basse).

An analysis of the population by Local Government Areas (LGAs) shows that, Banjul, Kanifing and Brikama account for 2.6, 23.6 and 28.8 percent of the total national population, respectively. This implies an over concentration of 55% of the population in these three LGAs while the 45% live in the other 5 LGAs.

1.3-Overview of Industrial and Agricultural Sector

In common terms the Gambia is classified as a Least Developed Country (lDC) and is ranked 149 out of 161 in the United Nations Development Program Human Development Index, 2001. Like other countries in this category, it is characterised by a significant large agricultural and natural resources sector, a relatively small industrial sector and a large services sector dominated by government. The agricultural sector is characterised by crop production and livestock production and fisheries contributes 22-23% of GDP while industry and manufacturing sectors account for 12% and 11% GDP respectively. The services sector which is dominated by the hotel industry and a vibrant informal sub-sector, contributes about 67% of GDP and is the main foreign exchange earner. The mineral resources in the Gambia include heavy mineral deposits such as ilmenite, quartz sand, kaolinite claystones, plastic clay, laterite and cockleshells. The potential of the country regarding zircon is being investigated.

Table 1A. Overview of the Industrial and Agricultural Sectors

Sector	Contribution to Gross Domestic Product (%)	Number of employees/ farming population	Major products	Remarks
Industrial /Processing/Manufacturing Sector	23	2862 (1995)	Fish, fruits, beverages, wood, iron and still, cement etc.	
Mining and Extraction	0.09	2500	Sand Clay Gravel	
Agricultural	22 - 23	759,016	✓ Groundnut	Unlike

Sector			✓ Rice ✓ Coarse grains ✓ Millet ✓ Maize ✓ Sorghum	1994/95 cotton has not featured as a major crop in 2002/2003. This may also account for the reduction of the sectors contribution to GDP which stood at 23.8% in 1994/95

1.3.1. Structure of the manufacturing sector

The structure of the industrial sector is shown in table 1B. The Gambia's industrial (manufacturing and fish processing) is dominated by small facilities, 82%. Micro facilities form 14% while medium facilities form 7%.

Table 1B Structure of the Manufacturing /Agricultural Sector

SECTOR	Micro Farms/Facilities	Small Farms /Facilities	Medium Farms /Facilities	Big Farms /Facilities
Industrial/Manufacturing Sector	4	23	2	NA
Agricultural Sector	NA	274,685	766,676	31,549
Total	NA	NA	NA	NA

1.3.2 Agricultural Production by Regions

The agricultural sector is characterised by crop production and livestock production and these are inter-linked with other disciplines in the natural resources sector such as fisheries, water resources, wildlife and forestry sub-sectors. The use of chemicals in these sub-sectors varies in degrees and intensity, with crop production topping the list. In the crop production sub-sector, agricultural chemicals are increasingly being used to boost food production and reduce losses due to pest. It is estimated that 339,936.24 hectare of land was farmed in 2003 by 759,016 men and women. 67.47 percent (229,365 hectares of this area was used for the production of cereals (millet, maize and sorghum). The main staple crop, rice occupies an average of 31040 ha. of upland farms and 8387 ha of lowland farms under rain-fed and improved technologies. Sesame, which is another cash crop, occupies 80576 ha representing about 23.7% of the total area cultivated in 2003. There has been a tremendous increase in both the number of farming population and land area cultivated this year (759,016 people, 339936 ha) compared to 1995

(560,000 people, 180,000 ha). The change in trend was a result of the response to the President's back to the land.

A breakdown of agricultural production by regions for 2002/2003 is shown in table 1C. Data on agricultural production in Greater Banjul Area is not available. There is a correlation between farming population and total tonnages cultivated per crop except in Brikama Local Government Area. This is because most of the land in this area has been used for settlement. The Kerewan Local Government Area, which has the highest farming population, also has the highest total tonnage in 2002/2003. Basse Local Government Area follows Kerewan LGA.

Table 1 C: Agricultural Production by Region in Metric Tons- 2002/2003											
Regions	**Farming population**	**CROP TYPES**									
		Millet		**Maize**	**Sorghum**	**Rice**		**Groundnut**		**Sesame**	**Remarks**
		Early	Late			Swamp/Lowland	Upland	Old	New		
Brikama Local Government Area or WD	226,412	370	3,406	2,657	828	-	1,895	2,142	4678	216	Swamp rice is not cultivated in this area
Mansa Konko Local Government Area or LRD	99,971	10,206	12	1,257	166	1,829	923	609	4,370	111	
Kerewan Local Government Area or NBD	141,559	46,017	-	4,312	586	36	665	5,124	18,704	279	Late millet is not cultivated in this area
Kuntaur Local Government Area or CRD-North	78,845	10,368	30	2,175	2,343	625	64	4,083	4,517	233	
Janjanburay Local Government Area or CRD-South	93,265	6,552	77	1,546	3,270	7	161	2,970	8,653	69	
Basse Local Government Area or URD	118,964	3,828	3,751	6,634	8,015	-	925	4,731	10,949	38	Swamp rice is not cultivated in this area
TOTAL	759,016	77,341	7,277	18,580	15,209	2,498	4,632	19,655	51,871	946	
Value in Dalasis		375,877,260	35,366,220	91,413,600	74,524,100	6,245,000	11,580,000	83,533,750	220,451,750		
Price per Ton		4680	4,680	4,920	4,900	2,500	2,500	4,250	4,250		

Source: DOP- Banjul. August 2003

Table 1D: Size and Number of Farms by Crop Type

Farm Size (Hectares)	Early Millet	Late Millet	Maize	Sorghum	Upland Rice	Swamp Rice	Groundnuts	Sesame	Total
0.25-0.5 ha micro/small farms	44,319	5,286	73,235	9,692	81,450	22,004	13,059	25,640	**274,685**
0.50 - 1.50 ha Medium Farms	49,053	5,582	13,940	10,574	497	136	14,579	40,041	**766,676**
1.5 - 5.0 ha. Large Farms	13,717	2,147	1,035	1,722	-	-	3,412	9,514	**31,549**

Source: DOP- Banjul, August 2003

Table 1 E: Breakdown of Industrial Production by Region

Region	Major Products	Total Value of Production	Number of Industrial Facilities	Number of Employees
Greater Banjul	Beverages, Soap, etc		218	
Brikama Local Government Area or WD	Wood & wood products & fish		3	
Mansakonko Local Government Area or LRD	Wood and Wood products		1	
Kerewan Local Government Area or NBD	None			
Kuntaur Local Government Area or CRD- North	Milk and milk products & Rice mill		1	
Janjanburay Local Government Area or CRD-South	Milk and milk products & Rice mill		3	
Basse Local Government Area or URD	Cotton, wood and wood product		2	
Total				

1.4-Industrial employment by Major Sectors

Table 1F: Industrial Employment by Major Economic Sector

ISIC Code (Revision 3)	Description	Number of Facilities	Total Employment	Output Value (`000` Dalasis/ 1999	POP Releases- Yes/No and Which POPs	Non-POPs Released
151	Processed meat, fish, fruit, vegetables, fat		1392	56,606	No	
171	Spinning, weaving and finishing of textiles		380		No	
2010	Saw milling and planing of wood		534		No	
221	Publishing		36		No	
241	Basic Chemicals		127		No	
35	Chemical/coal/Petro/Plastic products	7	350		No	
36	Non-metallic Products	1	35		No	
37	Basic Metal Industry				No	
38	Fabrication of Machinery and Equipment		11		No	
281	Struct. Metal products, tanks, steam generators		357		No	
291	General Purpose Machinery		14		No	
	Mining and Extraction (sand)		2500	10,561,690	No	
	Electric Generation	7	153		Yes	PCBs
	Dry Cleaning	4			No	

Table 1.E shows industrial employment by major economic sectors in the Gambia. Most of the information contained in this table was obtained from the industry profile and waste situation survey carried out by NEA in 1995.

The formal manufacturing sector of The Gambia is dominated by the food industry, which include beverage facilities, and fish processing plants, abattoir, sweets and milk processing plants. The National Water Electric Company (NAWEC), is solely responsible for electricity production nation-wide, and has seven generating stations. There are four small/micro-mining facilities for sand and gravel mining to serve the building industry. Carnegie Corporation Company used one big facility in the mining sector, to test mining Zircon. Samples were collected and taken to Australia for further testing. If results are positive, the company could engage in large-scale mining of Zircon. Three facilities are involved in the production of timber, also serving the building industry. Two of these facilities are own by the government. They each employ an average of five people and produce between 0.5 and 0.9 cubic meters of timber per day. Two facilities foam manufacturing plant and plastic production plants are in the chemical and plastic plant product category. The foam plant produces mattresses from Freon 11, and the plastic plant produces plastic containers using polyethylene pellets. Two facilities manufacture simple farm implements and garden tools. There is one facility that produces ceramic tiles.

Employment is highest in the food industry followed by: mining and extraction, electric generation, chemical/plastic products etc. Except for the mining and extraction sub-sector whose output value was given as D10, 561,690 for 2002-2003, information on the output value of on the other industrial sub - sectors is not forthcoming.

Estimation of emissions due to fuel combustion during the National Inventory of Green House Gases in 1993, consist of a total of 181,064 tones (t) of CO_2, 2,911 t CH_4, 40 t N_2O, 2,224 t NO**x**, 54,536 t CO and 6,987 t of Non methane Volatile Organic Compounds. The inventory indicates that the bulk of the CO_2 emissions came from road transport, representing 60% while industries emitted 30% of CO_2. The residential sub-sector emitted 99% CH_4. The energy and manufacturing, construction industries emitted 94% and 6% of N_2O respectively. The residential and road transport sub-sectors contribute to 93% of NO**x** emitted while industries emit about 7%. A memorandum of Understanding was signed between the Department of Water Resources (Focal Point for UNFCCC) and key institutions to make data available as and when required for up-date.

CHAPTER 2: Chemical Production, Import, Export and Use

2.1 History of POPs Production, Generation and Use

2.2- Chemical Production, Import and Export

2.2.1 Chemical Production

The Gambia is not producing or manufacturing chemicals such as POP pesticides, and other pesticides used for agriculture, public health, livestock, fertilizers and industrial chemicals used for processing and manufacturing.

2.2.2 Chemical Importation

There was no importation of POPs pesticides from 1997 to 2002. The main types of chemicals imported include petroleum products, fertilizers, and pesticides for agriculture, public health and industrial chemicals used in the manufacturing and processing sectors. However there is a decline in imports for the period 1997 to 2002.

For pesticides, a total of 3,480 tons was imported during the period under review.

2.2.3-Chemical Export

The Gambia does not export any pesticides or chemicals.

Table 2.A: chemical Production and Trade: 1997-2002 (metric tons)

Chemical Type	Production / Manufacturing (Tons/year & value)	Imports' (tons/year & Value)	Formulation/Package In (tons/year & Value)	Exports' (tons/year & Value)
PoPs pesticides	N/A	N/A	N/A	N/A
Pesticides (agricultural, public health & consumer	N/A	3,480	N/A	N/A
Fertilizers	N/A	5,556	N/A	N/A
Petroleum Products		410,840	N/A	N/A
Industrial (used in manufacturing/processing facilities		372.7	N/A	N/A
Consumer Chemicals			N/A	N/A
Other Chemical (Unknown/mixed use)			N/A	N/A
TOTAL				

Table 2.A.1- Estimated POPs Production and Trade

POP Categories	Production/Manufacturing (kg per year and value)	Imports (kg per year and value)	Formulation/ Packaging (kg per year)	Exports (kg per year and value)
Industrial Chemicals (Polychlorinated biphenyls PCBs and hexachlorobenzene)	NONE	NONE	NONE	N/A
Pesticides (Aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex and toxaphene)	N/A	N/A	N/A	

2.3- Chemical Use by Categories

Table 2.B: Chemical Use by Categories

Type	NUMBER OF TONS USED IN THE COUNTRY		
	1993-96	1997-2002	Remarks
Pesticides - agricultural	648	66.4	Pesticides for agriculture, public health & livestock are combined.
Pesticides- public health	N/A		
Pesticides - consumer use	23,480	595.82	
Fertilizers	20,556	5,565	
Petroleum Products	265,490	410,840	
Industrial chemicals used in manufacturing/processing	N/A	372.7	
Consumer chemicals	104,709	N/A	
Other Chemicals unknown/mixed use		23,575 Cartons, weight not known	
TOTAL			

The review of imports through questionnaires to relevant stakeholders showed a general decline.
The total amount of agro-pesticides used for the period 1993-96 was 684 tons against 66.4 for the period 1997-2002. This showed an 89.7 % decline in use.

Pesticides for consumer use have declined by 97.5% from 23,480 metric tons for the period 1993-96 to 595 metric tons during 1997-2002. There were 23,575 cartons (weight of cartons unknown) recorded during the period under review.

Fertilizers also showed decline from 20,556 tons from 1993-96 to 5,565 in 1997-2002, representing 72.9%.
Data on Industrial chemicals not available before but during the period under review, 327.7 tons were recorded.
Petroleum products on the other hand, showed an increase from 265,490 tons from 1993-96 to 410,840 for the period 1997-2002 representing 154.7%.
Pesticides for public health purposes are mainly pyrethroids for mosquito net impregnation. A total amount of 27.7 tons was consumed during the period under review.
The NEA database recorded 3,480 tons involving 20 trade names of insecticides, herbicides and fungicides while data received through questionnaires from stakeholders shows a record of 562 tons for the same period, involving 28 trade names. See Annexes for reference.

2.4- Chemical Waste

There is a Task Team responsible for gathering data on waste generation, hence we are not going to preempt their finding.
No official data exists regarding the amount of chemical waste but large quantities of inorganic pollutants such as arsenic, mercury, cyanide and oxides of sulfur and Nitrogen are generated as waste. The insecticides used for net impregnation are usually consumed before the following year, hence no need for disposal. Liquid effluents are generally discharged into water bodies without pre-treatment. Disposal of chemical waste generated by the industry, laboratories, schools and research institutions is a problem. In most cases such wastes end up in the sewer system or onsite septic tank system, which are likely to pollute water resources.

2.5 Unintentionally Generated POPs

There is a task team assigned this work.

2.6 Constraints and Recommendations

The constraints encountered during this exercise was late submission of questionnaires by respondents, incomplete information given in some cases and under reporting of quantities imported including value of imports (Cost, Insurance and Freight.)
In light of the observations made relative to importation of pesticides and the vast difference between data collected from respondents and NEA database, there is need to adopt the NEA importation data as the most accurate. There is also need to sensitize stakeholders to co-operate in providing accurate data during such exercises. The NEA and HCPMB should consider strengthening the enforcement unit and consider sanctions and hard punishment to importers who do not comply with the decision of the Board.

CHAPTER 3: Priority concerns Relate to Chemical Import, Production and Use

3.1 Priority Concerns related to chemical Import, Production, and use

Table 3.A: Description of Problem Areas

Nature of Problem	City Region	Brief Description of Problem	Chemical(s) Pollutant(s)
Air Pollution	National	Emission of toxic gases from open burning of waste (especially plastic, used tires etc), dust from roads, harmattan industry	Lead, NOx, PM10 PAHs, CO, CO_2
Marine Pollution	Greater Banjul Area	Untreated waste from industry, dumping of raw sewage, waste oil from NAWEC, run-off from sold-waste dump sites, liquid waste from artisan workshops	Dye, engine oil, Crude oil, heavy metals and organic compounds
Pollution of Groundwater	Greater Banjul Area	Leaching of domestic and industrial waste, laboratory waste, waste oil from construction, road	Heavy metals and pesticides, PCBs, chlorinated solvents,

		transport, PCBs from transformers	

Table 3.B: Priority Concerns Related to 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	Medium	Low	Low	Limited data available	Carbon Monoxide, lead, POPs produced unintentionally through combustion	3
Pollution of Inland Waterways	High	Medium	Low	No data Available	-	4
Marine Pollution	Medium	Low	Low	Limited data	Waste oil	2
Groundwater Pollution	Medium	Medium	Medium	Data available	Industrial Wastes, heavy metals	1
Soil Contamination	Medium	Medium	Low	Insufficient	Pesticide residues, heavy metals	2
Chemical Residues in Food	Low	Low	Low	No data Available	Pesticides and heavy metals	2
Drinking water Contamination	Medium	Low	Low	Data available	Pesticides and heavy metals	1
Hazardous	Low	Low	Low	No data	Organic	2

water Treatment/Disposal				Available	compounds	
Occupational Health: Agriculture	Medium	Medium	Low	Insufficient	Pesticides	3
Occupational Health Industrial	Low	Medium	Low	Insufficient	Insecticide Pesticides	2
Public Health	Medium	High	Medium	Insufficient	Pesticides	2
Chemical Accidents: Industry	Low	Low	Medium	Sufficient		4
Chemical Accidents: Transports	Low	Low	Medium	Sufficient	-	4
Unknown Chemical Imports	High	Low	Low	Data Available	Pesticides	3
Storage/ Disposal of Obsolete Chemicals	High	Low	Medium	Data available	-	5
Chemical Poisoning/ Suicides	Low	Low	Low	Insufficient and not specific	-	1
Persistent Organic Pollutants	Low	Medium	Medium	Limited data available	PCBs in transformers	2
Others						

3.2- Comments/ Analysis

Table 3B relates to problems, and Gambia's ability to control them. It is quite clear that there has been improvement in the availability of data on air and water quality thanks to the collaborative efforts of the National Environment Agency and Department of Water Resources under the Environmental Quality Monitoring and Enforcement Program.

In an effort to implement the Environmental Quality Monitoring and Enforcement strategy, the NEA adopted the regulations establishing the Environmental Quality Standards Board, Environmental Quality Standards, Environmental monitoring and industrial Registration and Discharge Permitting System.

Air pollution through the burning of waste, soil contamination, pesticides and heavy metal residues in the soil and water, waste oil sludge from NAWEC are major priority areas of concern related to chemical management in the Gambia.

Though the capability exists with regards to quality control of pesticide products and monitoring of toxic chemicals in the water and PCBs in soil, there is no laboratory capability for pesticide residue analysis in country. As part of NIP implementation, soil samples from sites contaminated with PCBs will be collected for analysis at the water quality Laboratory.

Even though the National Environment Agency has a database on the nature, type and quantities of pesticides and chemicals imported into the country, importers have been very reluctant to provide consultants with accurate import data.

The National Environment Agency and Department of State for Health and Department of State for Trade Industry and Employment should work together to ensure proper records of all chemicals brought in and used in the country. These institutions should develop web sites have all relevant information posted there for easy access and information sharing. There should be continuous public sensitization on chemical and chemical related problems.

Chapter 4 Legal Instruments and Non-Regulatory Mechanisms for (or Relevant) Managing Chemicals, including POPs.

4.1. Overview of Nation Legal Instruments Which Address the Management of chemicals

4.2- Summary Description of Key Legal Instruments Relating to Chemicals

4.2.1 The National Environment Management Act (1994)

The Act provides both regulatory and legislative framework for environmental management in the Gambia. It is not specific to hazardous chemical or pesticides but covers all environmentally related issues.

4.2.2 The Hazardous Chemicals and Pesticides Control and Management act 1994

In 1994 the Hazardous Chemicals and Pesticides Control and Management Act was enacted to regulate the indiscriminate sale and misuse of chemicals particularly pesticides. The Act calls for the mandatory registration of all

hazardous chemicals and provides a wide and comprehensive framework for the control and management of the manufacture, distribution and use of hazardous chemical and pesticides. The NEA is administering the Hazardous Chemicals and Pesticides Control and Management Act of 1994. The Act covers pesticides and all other hazardous chemicals from consumer, industrial, to agricultural chemicals.

The Act provides for:

1. The establishment of a multi-sectoral Board with final authority to register and control all hazardous chemicals in the country (from importation to disposal).
2. The position of a Registrar to implement the decisions of the Board.
3. Technical committees to advise the Board when required.
4. System of registration of pesticides and chemicals- provisional clearance, restriction and banning of pesticides.
5. Labelling, advertising and packaging of pesticides.
6. Licensing of dealers and the payment of fees for Licenses and Certificates
7. Enforcement- designation of inspectors and analyst
8. Penalties for infringement- Fines for offences against the Act
9. For powers to make regulations.

The Act uses language and concepts consistent with international laws (such as the FAO Code of Conduct and the PIC Procedure) and provides for international notification procedures. It has three sets of Regulations.

a) The Pesticide Registration Regulations 1994
b) The Pesticide Licensing regulations 1994
c) The Hazardous Chemicals Regulations 2001

4.3-Existing Legislation Addressing Various Stages of Chemicals

The Hazardous Chemicals and Pesticides Control and Management Act is the only one that addresses the various stages of the lifecycle of the chemical (from importation to disposal).

The Hazardous chemicals and Pesticides Control and Management Act is the only national legal structure at the moment that amply and sufficiently

addresses the control and management of chemicals other than pharmaceuticals. It does not conflict with the Medicines Act, which addresses Pharmaceuticals, or with the Water Resources Act, nor the Plant Protection Act.

4.3.1-The Local Government Act and Amendments 1963 - 1984

This Act provided for the proper administration and management of other parts of the country other than Banjul.

4.3.2-The Local Government (City of Banjul) Act 1946

This Act did not directly deal with chemicals, but intended to provide for the general management and maintenance of the city of Banjul.

The above two Acts were repealed in 2002 by the Local Government Act 2002

4.3.3-Local Government Act 2002

This Act establishes under Schedule 1, Part 1 seven Local Government Areas (Central River Division, Lower River Division, North Bank Division, Upper River Division, Western Division, City of Banjul and Kanifing Municipality) each with Area Council or Councils with designated jurisdictions, which have very wide powers of regulation, supervision, inspection and management. The Act still establishes the Banjul City Council as the authority for the administration of the city of Banjul.

For the purposes of the National Profile, Paragraphs 1 and 3 and 18 (m), of Schedule II, Part II of the Act are the most relevant. These three paragraphs respectively provide for Local Governments to:

1) Control pests of all sorts, including tsetse flies, mosquitoes, and weeds,

2) Prohibit, restrict and control the planting, harvesting and possession of noxious or poisonous plants

3) Prohibit, restrict, regulate or license the burning of rubbish or grassland.

4) Area Councils are primarily involved in the use of chemicals. Noxious or poisonous plants may also contain some chemical elements whose control is generally vested on the Area Council. Likewise, the regulation of consumable taken care of by sub-paragraph (iii) in effect, the area councils are indirectly involved in the management of chemicals albeit in a limited capacity.

The wide powers of inspection granted to the Councils in the former Act (powers to provide for the inspection of all other food stuff of whatever nature, and of liquids intended for human consumption, whether exposed for sale or not, and to seize, destroy or otherwise deal with all such foodstuff or liquids as are found to be unfit for human consumption and to supervise and control all manufacturers and foodstuff of whatever kind or nature and of liquids intended for human consumption) are not provided for in the new Act.

4.3.4-The Petroleum (Exploration and Production Act 1986)

This Act Contains provisions dealing with exploring for and producing petroleum generally. It does not deal specifically with the production of petro-chemicals. The only relevant provision is section 20 (a), which gives the Secretary of State For Energy power to make regulation controlling the flow and prevention of the escape of petroleum, water or gasses (other than petroleum) or other noxious or deleterious matter. This Act is under review and The Petroleum Exploration and Production Act 2003 is being drafted.

4.3.5-The Fisheries Act

The only section relevant to chemicals is Section 3a which prohibits the use explosives, poison or other noxious substances for the purpose of killing, stunning, disabling or catching fish or in any way rendering fish to be more easily caught. The penalty is severe (minimum of 5 years).

4.3.6-Waste Bill

A draft Waste Act is currently being finalised by a legal consultant. The Act will take into account Gambia waste management strategy of 1997 and international conventions namely the Basel and Bamako Conventions on the Trans-boundary Movement of Hazardous Wastes and their disposal. The hazardous wastes identified in that Strategy, includes PIC chemicals, and is industrial and agricultural wastes. The Gambia does not manufacture any PIC chemical.

Section 4.7 of the Strategy recommends the Hazardous Chemicals and Pesticides Unit of the National Environment Agency to continue recording all pesticides that become waste and investigate suitable disposal methods for each type. It further recommends individual farmers and suppliers who own the pesticides when they became waste to shoulder the financial burden of disposal. Further, it recommends that the Department of Agriculture make arrangements with incinerator and landfill operators, for environmentally friendly disposal.

Hazardous Waste is covered under Article 29 of the Act and included in Special Waste.

Special Waste will be adequately defined to cover waste of PIC and POP chemicals. Provision is made in Article 29 giving powers to the Secretary of State to make Regulations dealing with Special Waste.

4.3.7- The Medicines Act

This Act addresses Drugs and Pharmaceuticals

4.3.8 - The Water Resources Act.

This Act has an overall object of promoting good management of water resources and the abatement of harmful effects through the formulation of water policies.

4.3.9 -The Public Health Act.

This Act makes provision for public and environmental health. It addresses the designation of health areas, the establishment of health services institutions, safe food and beverage, infection, offences and penalties

4.3.10 - Plant Importation Act

This Act makes provision for the importation of plants with a view to the prevention of the introduction and spread of pests and disease affecting vegetation.

4.3.11 - Prevention Damage of Pests Act.

This Act makes provision for preventing loss of food by infestation.

4.3.12 - Environmental Impact Assessment

This is another legal instrument that indirectly controls chemicals. It ensures that all new projects undergo impact assessment.

4.3.13 - Montreal Protocol

This instrument controls the emission of Ozone Depleting Substances (ODS) into the atmosphere. An Ozone depleting substance study was completed indicating the types and quantities that were used, sold or stored in the Gambia for the period 1995 to 1997. Training programs were organized for mechanics and repairers on retrofitting refrigerating and air conditioning equipment. Custom inspectors were trained in setting up and enforcing a system for the identification, monitoring and control of imported ODS. Assistance was provided to the Karan foam manufacturing plant in Banjul to convert its block foaming machine to a non-CFC consumption plant. This has resulted in a reduction in the annual consumption of between 8 to tons of CFC at the plant.

4.3.14 - The Rotterdam Convention on Prior Informed Consent (PIC)

The PIC Procedure is based on the principle of prior informed consent, that international shipment of a chemical that is banned or severely restricted to protect human health or the environment should not proceed without the agreement, or contrary to the decision of the Designated National Authority (DNA) in the participating importing country. The DNA is the government authority responsible for the administration of the PIC Procedure in the country. In Gambia, the National Environment Agency is the DNA for PIC.
The objective of the Convention is to foster a shared responsibility to protect human health and the environment, between exporting and importing countries.
It enables the world to monitor and control the trade in certain hazardous chemicals. It gives importing countries the power to decide which of these chemicals they want to receive and to exclude those they cannot manage safely. If trade does take place requirements for labelling and provision of information on potential health and environmental effects will promote the safe use of these chemicals.

The Convention covers pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by participating Parties. Severely hazardous pesticide formulations that present a hazard under the conditions of use in developing country Parties or Parties with economies in transition may also be included. Twenty-seven chemicals including severely hazardous pesticide formulations are on the PIC List.

The Convention, which was ratified in November 2001 principally provides for:

a) Procedures for banned, severely restricted chemicals and severely hazardous pesticide formulations
b) Designated National Authorities (DNA)
c) Listing of chemicals
d) Chemicals already listed
e) Removal of chemicals
f) Obligation in relation to exports and imports
g) Export notifications
h) Information exchange
i) Implementation of the Convention
j) Technical assistance
k) Non compliance and settlement of disputes

Obligations of Parties

The Convention obliges Parties to obtain and disseminate information and decisions taken regarding those chemicals and pesticides on the list.

Countries participating in the interim PIC procedure must designate one or more national authorities (DNAs) to act on its behalf in the performance of the administrative functions required by the Convention.

Parties must notify all regulatory actions taken on chemicals including pesticides.

Exporting Parties must notify and obtain consent from importing Parties.

4.3.14 -The Stockholm Convention on Persistent Organic Pollutants (POPs)

POPs are a group of chemicals that pose a serious risk to human health and the environment. They persist for long periods and often travel long distances from their source of production. They accumulate in living species, becoming more concentrated in fatty tissues as they move up the food chain. These toxic contaminants can be passed on to future generations for example through breast milk.

Initially 12 POPs are targeted for international action. These include pesticides and industrial chemicals such as DDT and PCBs, which were or are being used in The Gambia. DDT is an insecticide both for agricultural and public health use, and PCBs are found in some transformer oils in the country.

The Convention, which was ratified by the Gambia in June 2003 provides principally for:

a) Measures to reduce/ eliminate releases from intentionally and unintentionally produced POPs
b) Registration of specific exemptions
c) Measures to reduce or eliminate releases from stockpiles and wastes
d) Implementation Plans
e) Information exchange and awareness and education
f) Research and monitoring
g) Technical and financial arrangements
h) Reporting and evaluation
i) Non compliance and settlement of disputes

Obligation of Parties:

a) Measures should be taken to eliminate or reduce releases from unintentionally produced POPs

b) Parties should develop implementation plans for the implementation of their obligations under the convention.

c) Parties should establish mechanisms and schemes for awareness raising and information.

d) Parties should encourage the undertaking of research geared towards the elimination of POPs and the finding of alternatives

4.3.15 - The Common Regulations for Pesticide Registration in the CILSS member States

1992 the Ministers of the countries belonging to the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), comprising of such states as The Gambia, Senegal, Cape Verde, Burkina Faso, Guinea Bissau, Mali, Mauritania, Niger and Chad met in Ouagadougou, Burkina Faso, to adopt common regulations for the registration of pesticides, for the CILSS member states. The decision was prompted by the fact that large quantities of agro-chemicals, especially pesticides were being used by member countries to prevent food losses and ensure food security for our people, since the Sahel ecosystem is very fragile and vulnerable to these hazardous substances. A common registration system is feasible because of the similarity in our ecosystems and populations.

Consequently, a Sahelian Pesticide Committee (SPC) or CSP **(French Acronym)**, was established. This Committee is mandated to prohibit or permit the entry of pesticides into the sub-region.

The Common CILSS regulations provide among other things for:-

- Registration conditions and procedure for pesticide
- protection of confidential data
- information provision
- labelling and packaging
- field trials
- emergency situations
- post registration control by member states
- composition and functions of the CSP
- appeals

The Gambia ratified the Common Regulations in July 1997 and its amendments in 2003.
The Gambia has entered into bilateral co-operation program with Senegal in the area of chemicals, especially pesticides management. Under the program, NEA's Pesticide Formulation Laboratory undertakes the analysis of pesticide formulation for both countries, while Locustox laboratory in Senegal conducts analyses in pesticide residues

4.4- Key Approaches and Procedures for Control of Chemicals

4.4.1 - Existing Monitoring Programs

Control is carried out through monitoring, enforcement of the law, sensitisation and education programs. Due to the geographical position of The Gambia, the entry of goods from the neighbouring countries is very easy. Chemicals, especially pesticides, enter the country through illegal channels. The Sunday

markets commonly known as “lumos”, are regularly monitored to ensure that pesticides vendors are registered and that no banned or unregistered pesticide are sold.

Pesticides pass through a registration process, which involves the completion of forms where the applicant is required to supply information on him, the manufacturer and on the efficacy, toxicity (to human and to the environment) of the products and on safety measures. A Certificate is issued after a satisfactory assessment. In addition Licenses are issued to dealers and permits to importers. The control of chemicals is also effected through training of applicators and sensitisation of the general public and through the confiscation of banned and unregistered pesticides and through sanction of defaulters. The Divisional Co-ordinating Committees (DCCs) have identified campaign teams that are responsible for the registration and management of pesticides within the divisions.

4.4.1- The Inspectorate

The role of the inspector is clearly defined in the Hazardous chemicals and Pesticides control and management Act. The inspector is empowered to enter any premise where it is suspected that the Act is not being complied with or that the products on sale or in use are non-conforming and seize them. The inspectors work in close collaboration with the Customs and the Police. The levying of fines on defaulters is also provided for in the Act.
. Since the NEA is faced with a manpower constraint, an agreement has been reached with other government departments (agriculture, health, customs) to form a network of inspectors with NEA, for the effective monitoring and control of pesticides countrywide. Their appointment was sanctioned by a ministerial decree.

Since 1995, the NEA has recorded numerous cases of violation. These range from the sale of banned pesticides, failure to register to non-possession of a valid licence to operate.

Analyses have revealed that many manufacturers do not adhere to the FAO Code of Conduct and active ingredients not mentioned on the label have been found to be present in some products. Hence in 1995, mosquito coils from a foreign country were found to contain about 10% 0f DDT, and this information was not mentioned on the label.

4.4.2 - The Pesticide Formulation Laboratory

A Pesticide Formulation Laboratory situated at Abuko, about 13km from Banjul is responsible for the analyses of pesticides. There is no residue laboratory. Internationally accepted methods of analyses are being employed. Results are occasionally sent to GTZ for cross checking and they normally fall within acceptable tolerance limits.

The laboratory staff participates in sampling, and sensitisation activities.

Studies are underway to institute a more coherent payment of fees for analyses to cater for the sustainability of the laboratory. A training seminar on pesticide quality control and the use of GC was organised for the staff of the laboratory and other external laboratories, in 1997. The Chemist was sent for various long and short term training between the 1997 and 2003.
There are still plans to upgrade the laboratory into a sub regional reference laboratory.

The major constraints are the lack of adequate staff, lack of regular supply of reference standards and the absence of a High Pressure Liquid Chromatography for the analyses of certain active ingredients.

4.4.3- Discharge Permitting System

The National Environment Agency (NEA) has since 1999 put into place a Discharge Permitting System, for all companies, operators and processes that have a potential of polluting the environment, the release and production of chemicals included.

The Permit contains the following elements:

- The conditions stating the requirements that the permit holder, his employees and site should meet
- Record keeping and reporting
- Notifications to the NEA in case of any unusual release
- The treatment of wastes, releases or effluents
- An agreed improvement program
- Monitoring and sampling of releases
- Validity of permit

4.4.5- Other Monitoring Schemes

Other monitoring tools in place include licenses, permits, confiscation forms etc.

4.4.6 - Problems arising from Control Measures: -

I. Impostors (unscrupulous persons posing as NEA inspectors with the intention of collecting registration or licensing fees from dealers).
II. Inadequate supply of standards at the Pesticide Formulation Laboratory
III. The illegal and easy entry of pesticides into the country (due to the geographical situation of the country) is another major problem.
IV. The level of awareness regarding POPs management.

4.5- Non-regulatory Mechanisms for Management of Chemicals

At the moment no voluntary actions by industry exist, the NIP Action plan will take this factor into consideration.

4.5.1-Incentives

As regards economic incentives, the Customs Department has in place a mechanism to encourage the use of some chemicals especially agrochemicals. For instance only a sales tax and no duty is levied on pesticides. Fire extinguishers are duty free and only a sale tax is levied on them (Some fire retardants and extinguishers contain PBBs). However, the Fire Service in the Gambia uses CO_2 and foam. Other products containing chemicals with reduced duty or duty-free are graphite, activated and paste carbon, residual lyes, turpentine and resin acids and their derivatives.

The National Environment Agency (NEA) through its Environment Award Scheme competition promotes popular participation in Environmental Management including the judicious use of chemicals. Winners of this competition are rewarded in kind and in cash.

The NEA faced with a manpower constraint has to use the services of other government officers in its monitoring of pesticide sale, use and application in the provinces. The chemicals involved here are all those pesticides that have been banned in the Gambia, all those without proper labelling and those that have not been registered. The government officers whose services are utilised by the NEA are provided with incentives in the form of badges, money, protective clothing, milk and fuel. The Divisional Commissioners and the Environmental Task Forces at the divisional levels are responsible for the implementation of this mechanism. The cost of the Environmental Award Scheme competition is difficult to estimate, as the activities do not only cover chemical issues

4.6 Comments and Analysis

Although considerable gains have been made through the enactment of legislation, the weak regulatory framework and the lack of action in enforcing the relevant regulatory provisions poses a serious challenge for the NEA. The law is only as effective as the will of the state to enforce the law and ensure that it is obeyed. There is an urgent need for the agency to enforce the environmental impact assessment regulations, the enforcement of mitigating measures, the implementation of environmental audits and implementation of industrial registration and discharge permitting system. An effective compliance and enforcement program entails:
Creating enforceable requirements
Promoting compliance through sensitisation and awareness creation

Monitoring compliance
Responding to violations

There was difficulty in trying to mainstream issues related to the environment into the macro-economic framework of the country, particularly the policy and regulatory aspects. For example, the fiscal policies to control importation of environmentally un-friendly product (such as inferior quality batteries, plastics, etc.) are not enforced as required.

Financial mechanisms should be in place for NEA to retain funds to be raised through the enforcement of regulatory provisions. This will enable the agency to support national environmental management and planning.

The HCPCMA need to take on board international conventions and regional instruments ratified by The Gambia for effective chemicals control and management.

4.6.1 - Gaps with regard to international conventions

A study carried out by a legal expert shows that since the conventions are duly ratified by The Gambia, there was a need to incorporate them into the Laws of The Gambia for effective implementation.

i) Rotterdam Convention

A review of the Hazardous Chemicals and Pesticides Control and Management Act, 1994 revealed that there was a provision for a very wide and comprehensive framework for the control and management of the manufacture, distribution and use of hazardous chemicals and pesticides, which was in line with the objectives of the Rotterdam Conventions. Furthermore the Principal Legislation (NEMA) gives the Secretary of State, in consultation with the Board, wide powers to make Regulations, which are more easily updated to further give effect to the Act.

The above provision also enables the incorporation of the Convention by means of Regulations.

This Convention provides for detailed Regulations containing matters such as, notification procedures and registrations procedures, and other administrative procedures as provided for in the Act.

It is therefore justified to incorporate the Convention by means of Regulations as opposed to an amendment or review of the principal Act.

The legal Consultant therefore proposed the incorporation the Convention into the Laws of The Gambia as **THE HAZARDOUS CHEMICALS AND PESTICIDES (PRIOR INFORMED CONSENT PROCEDURE) REGULATIONS, 2002.**

The Regulations provide for the application of the Convention in The Gambia, and the study endorsed the National Environment Agency as the Designated National Authority (DNA) for the Rotterdam Convention, in The Gambia.

ii) Stockholm Convention

A study undertaken by a legal expert concludes that since the main objective of the Convention is to protect human health and the environment from the harmful effects of POPs, the spirit and intent of this Convention is therefore synonymous with that of the Principal Act (HCPCMA). The Stockholm Convention can therefore be incorporated under the general powers conferred on the Secretary of State, in consultation with the Board, to make regulations for the effective carrying out of the objectives of the Act. The Regulations will be called:

THE HAZARDOUS CHEMICALS AND PESTICIDES (PERSISTENT ORGANIC POLLUTANTS PROTECTION) REGULATIONS, 2002.

The Regulations make the Stockholm Convention applicable to The Gambia.

The relevant provisions detailed in The Schedule prohibit the production, use, import and export of the chemicals listed in the annexes of the Convention, unless it is done in accordance with the Convention.

iii) The Common CILSS Regulations for Pesticide Registration

The principal advantage of this common registration system is the sharing of resources (both human and material) in the form of experts and laboratory facilities.
Since the adherence of The Gambia to the Common Regulations regime in 1997, the responsibility of registration is relegated to the central SPC. However, the national Boards still endowed with the tasks of post registration control (licensing etc).

To incorporate the Common Regulations, into the Laws of The Gambia, a set of Regulations entitled **"THE PESTICIDES REGISTRATION AND LICENSING REGULATIONS"** are drafted by a legal consultant. These Regulations seek to adopt the Common Regulation procedure and make them applicable in The Gambia. The Common Regulation is provided as a Schedule to the Regulations. Furthermore, the import, manufacture, sale and use of pesticide is prohibited unless it is done in accordance with the said Common Regulations. This in effect clearly ensures the effective implementation of the Common Regulations in the Gambia.

The Regulatory regime for post registration matters relating to Pesticides has been reserved for the National Authorities. As a result Chapters II of the Regulations provides for a licensing mechanism for the various users of Pesticides in the Gambia. It is important to note that this part merely adopts the present licensing regime being used by the Agency.

Recommendations for further amendment of Act for effective implementation

The following factors need to be taken into consideration:

a) The Rotterdam, Stockholm and CILSS Regulations need to be incorporated in the national laws. (HCPCMA)

b) The “Return to Sender” principle should be taken into account in Tender Procedures.

c) Integrated Pest and Vector Management policies should be well developed and the practices promoted, if the objectives of sustainable good pesticide management are to be attained. For this reason the law has to provide for the inclusion of the principle.

d) Provision be made in the Act for the establishment of Poison Control centers in the same way as provisions are made for Analysis and Tests.

Chapter 5 Ministries, Agencies and other Institutions Managing Chemicals

5.1-Responsibilities of Different Government Ministries, Agencies and Other Institutions

The following Institutions have been identified as dealing or being responsible for chemical management at the national level:

5.1.1- National Environment Agency (NEA)

The NEA is operating under the Department of State for Fisheries, Natural Resources and the Environment. The Hazardous Chemicals and Pesticide Control and Management Act (1994), mandates it to control the use of chemicals and pesticides in the Gambia. This Act established the Hazardous Chemicals and Pesticide Management Board and appointed a Registrar of Pesticides and Chemicals. The Board has representatives from the following Institutions:

I NEA (Chairperson and Secretariat of Board)

II Department of Agricultural Services (DAS)

III Department of Livestock Services (DLS)

IV National Agricultural Research Institute (NARI)

V Department of Health Services

VI Attorney General's Chambers

VII Gambia Chamber of Commerce

VIII Customs and Excise Department

A quality Control Laboratory for the testing of quality in pesticide formulations has been established at Abuko. The National strategies for Environmental Quality Monitoring and Enforcement (EQME) and Solid Waste Management were developed under the guidance of the Environmental Quality Working Group. In collaboration with the Department of Water Resources, the Gambia Police Force and the Deportment of Health Services, NEA commenced implementation of the EQME strategy. The team focused on ambient air quality, vehicle emissions, water quality and solid waste management. The institutions were proved with training and equipment for the implementation of the strategy. Systems for air and water quality monitoring were designed.

Twelve months of data for NO_2 and Pb were obtained and the values are within the provisional standard set.

5.1.2 - The Department of State for Agriculture (DOSA)

This is the major importer of agro-chemical used in agriculture for pest control, in livestock production & health and also fertilizers for the improvement of crop yields.

5.1.3- The Department of State for Trade, Industry and Employment

This is the Ministry responsible for industrial development and promotion. It monitors the effective/proper usage of investment incentives (such as duty waiver concessions, expatriate quotas, etc) to companies and organizations. Companies/enterprises that utilize chemicals as raw materials in their production processes are requested to provide detail information (on toxicity levels, residual effects etc) about such materials. The West African Examinations Councils (WAEC) is responsible to a certain extent for the management of school chemicals. The Department of State for Justice is involved in preparing the legal framework for the control and management of chemicals in the Gambia.

Table 5.A.I. Responsibilities of Government Ministries, Agencies and other Institutions: Chemical Class: Petrochemicals

Stage of Life-Cycle/ Ministry Concerned	**Importation**	**Storage**	**Transport**	**Distribution/Marketing**	**Use/Handling**	**Disposal**
Environment	X	X			X	X
Health						
Agriculture						X
Labour						
Trade & Industry	X			X		
Finance	X			X		
Transport						
Interior		X	X	X		X
Customs	X					
Foreign Affairs	X					
Other						

Table 5.A (ii) Responsibilities of Government Ministries, Agencies and Other Institutions
Chemical class: Agricultural

Stage of Life-	**Importati**	**Stora**	**Transp**	**Distributi**	**Use/**	**Dispo**

Cycle/ Ministry Concerned	**on**	**ge**	**ort**	**on/ Marketing**	**Handling**	**sal**
Environment	X	X		X	X	
Health				X	X	
Agriculture	X	X			X	
Labour						
Trade/Industry	X	X				
Finance	X					
Transport						
Interior/Civil Defense				X		
Customs	X					
Foreign Affairs	X					
Other						

Table 5 A (iii): Responsibilities of Government Ministries, Agencies and Other Institutions. Chemical Class: Domestic (Detergents, cleansing agents, plastics & Household pesticides)

Stage of Life-Cycle/ Ministry Concerned	**Importation**	**Storage**	**Transport**	**Distribution/ Marketing**	**Use/ Handling**	**Disposal**
Environment	X	X		X	X	X
Health	X	X		X	X	X
Agriculture						
Labour		X			X	
Trade/Industry						
Finance	X					
Transport						
Interior/Civil Defense						
Customs	X					
Foreign Affairs						
Other						

Table 5 A (iv): Responsibilities of Government Ministries, Agencies and Other Institutions.
Chemical class: Industrial

Stage of Life-Cycle/ Ministry Concerned	Importation	Storage	Transport	Distribution/ Marketing	Use/ Handling	Disposal
Environment	X	X		X	X	X
Health		X		X		X
Agriculture						
Labour		X			X	
Trade/Industry	X	X			X	
Finance	X					
Transport						X
Interior/Civil Defense						
Customs	X					
Foreign Affairs						
Other						

5.2 Comments and analysis on Responsibilities of Ministries, Agencies and Other Institutions Managing Chemicals.

As illustrated in Tables 5.A, various Government Ministries, Agencies and other institutions are directly involved in the usage and management of chemicals at one stage or the other. Prior to the enactment of the Hazardous Chemicals and Pesticides Control Management Act of 1994, the use and management of chemicals (mainly pesticides) were regulated through two main Acts; the 1935 Public Health Act and the Pesticides Control and Management Act of 1983. These were the only legal instruments provided to safeguard against negative effects of toxic and hazardous chemicals to humans and the environment. However, the growth in agricultural production and industries has had a reciprocal increase in the quantity and types of pesticides and industrial chemicals imported into the Gambia. This trend has created and brought to light the inadequacies within the existing legal framework thus necessitating the enactment of the Hazardous Chemicals and Pesticide Control and Management Act (1994).

The Act provides the framework for the establishment of a Board and the appointment of a Registrar of Pesticides at the NEA, Office of the President. The NEA, through the Office of Registrar of Pesticides and Chemicals is exclusively responsible for sound monitoring of environmental measures during importation, handling, storage, use and disposal of all pesticides and chemicals.

The Department of State for Agriculture, which is the major importer of pesticides, has established structures through the Agricultural Pest Management Unit (APMU) of DAS and DLS to monitor the sound management of agro-chemicals used in crop production and livestock production and health respectively.

The Hazardous Chemicals and Pesticides Control and Management Board is the national regulating body for the licensing and management of all hazardous chemicals and pesticides. The Board, within the provisions of the Act, defines mandates and roles of the different agencies engaged in the management of chemicals.

Chapter 6 Relevant Activities of Industry, Public Interest Groups and the Research Sector

6.1- Description of Organization/ Programs

Non-governmental Organizations (NGOs) and Entities in the Gambia play a very important role in the management of Chemicals. The Private Sector, Industrial Organizations and Entities are mainly involved in the importation, formulation, sales/marketing, use, export, transport, storage or disposal of chemicals. There are also several organizations such as Gambia College, Private Research Institutes, Laboratories, Libraries and quasi-governmental institutions that have access to relevant scientific/technical information and/or are conducting related research and development on chemical management. In addition, some other NGOs including community-based organizations that are members of the Association of Non-Governmental Organizations (TANGO) also have interest in the sound management of chemicals.

The range of chemicals handled by these NGOs and Entities include:

i) Agricultural Chemicals

ii) Pesticides of Public Health Importance

iii) Industrial chemicals

iv) Petrochemicals

v) Consumer/Household Chemicals.

The Gambia, being predominantly an agricultural country requires agro-chemicals to control pest infestation, increase production and improve the quality of crops. The Agro-chemicals (pesticides/fertilizers) are used in agriculture and horticulture. However, it is well known that such if not properly managed can result in serious health and environmental problems. Similarly the high prevalence of malaria and other vector borne diseases in the Gambia

warrants the use of pesticides for the control and destruction of carriers such as mosquitoes, termites (and other insects) rodents and other vermin.

Industrial Chemicals, including solvents, acids, hydrocarbons, methylene chloride, Toluene Di isocyanate Polyol, and other chemicals are also used in industrial activities. Petrochemicals including refined petroleum products and butane cooking gas are very important in the Gambian economy. Chemicals in consumer products such as cleaning products, paints, etc also widely used in the country.

Although these chemicals are very important for the advancement of the Gambian economy, it is prudent to have a good balance between the use of chemicals and environmental/public health protection through the sound management of these chemicals. This end, development can proceed in a safe and sustainable environment.

Table 6: The relevant NGOs and Entities involved in the management of chemicals are as follows.

Name of Organization	Address	Status/Interests
Gambia Horticultural Enterprise	P.O.Box 2425 Serrekunda Tel. 39-48-19; Fax 39-48-20	Largest private Distributor of Agro-chemicals in the Gambia. Grows and export fresh fruits and vegetables to Europe.
Radville/Agrotech Farms	Nemakunku Tel. 39-42-32; Fax 39-42-33	Dominates horticultural industry. Grows and exports fresh fruits and vegetables and use lots of agro-chemicals
Siffoe Farms Ltd	Mouktara Road, Kanifing Tel. 39-25-74; Fax. 39-30-85	A leading horticultural enterprise exporting fruits and vegetables. Also imports large quantities of agro-chemicals
Sangol Farms		A leading horticultural enterprise exporting fruits and vegetables. Also imports large quantities of agro-chemicals
Gambia groundnut Corporation	P.O.Box 284, Banjul Tel. 22-77-60; Fax 22-42-63	Buying and processing groundnuts and exporting groundnut products. Import and utilizes large quantities of agro-chemicals as industrial chemicals
Gamcot Ltd	Basse, URD Tel. 66-82-24; Fax 66-83-62	Buying, processing of cotton. Imports and distributes large quantities of agro-chemicals, mainly fertilizer and pesticide.
National Women Farmers Association	3E Marina Parade Tel. 202504; Fax 202501	Used to supply agro-chemicals (NPK & Urea) to farmer. Now adopting organic farming systems

(NAWFA)		Involve in chemical management through training on organic waste management and integrated Pest Management (IPM) practices.
Bus-Stop Shop Ltd	Kanifing Industrial Estate Tel. 39-40-31	Importer, Bottler and distributor of pesticides of public health importance
MHF Group	Independence Drive, Banjul Tel. 22-74-76; Fax. 22-95-10	Large scale importation and distribution of industrial chemicals and pesticides for public health
TK Motors		Large scale importation and distribution of industrial chemicals and pesticides for public health
H.T. Enterprise		Large scale importation and distribution of industrial chemicals and pesticides for public health
Atson Supermarket		
EM-KAY STORE		
Bai Bamba Pest Control Services	1 Rev. J.C Faye Street Serrekunda. Tel. 39-11-68	Registered commercial pesticides applicator
Shell Marketing Gambia ltd	Independence Drive, Banjul Tel.22-99-87; Fax 22-79-92	Imports, stores and distributes refined petroleum products.
Total Fena ELF Gambia Ltd	Kairaba Avenue, Kanifing Tel. 37-13-38; Fax. 22-79-92	Imports, stores and distributes refined petroleum products. Also imports and bottles and distributes butane gas.
National Water and Electricity Company	Independence Drive, Banjul Tel.22-71-76; Fax. 49-67-51	Imports and utilizes large quantities of petrochemicals like heavy oil for electricity generation. Uses chemicals such as chlorine for water treatment
M&C Gas Co. Ltd	Kombo Sillah Drive Tel. 39-11-07; Fax. 22-64-13	Importation, bottling and sale of butane gas
Gam Gas	P.O.Box 702, Kanifing Industrial Estate Tel. 37-06-33; Fax. 39-33-75	Importation, bottling and sale of butane gas

Gambia Oxygen Ltd	Mamadi Manjang Highway, Kanifing. Tel. 39-20-67	Imports and distributes oxygen-acetylene gas
Foam Manufacturing (Gambia Ltd)	Bund Road Layout, Banjul Tel. 22-34-27; Fax. 22-34-28	Manufacturing of foam mattresses using polyurethane as blowing agent. Importation and sale of feon gases.
Alh S.S Sillah & Sons	Kanifing Industrial Estate Tel. 39-27-21; Fax. 39-26-66	Imports and utilizes large quantities of industrial chemical and petrochemicals in the manufacture of soap and plastic products
Gambega Ltd	Kanifing Industrial Estate Tel. 39-22-15; Fax. 39-22-37	Agent of the Coca Cola company, Imports and uses large quantities of chemical food additives in bottling soft drinks
Banjul Breweries Ltd	Kanifing Industrial Estate Tel. 39-18-64/ 39-25-66	Imports an uses consumer chemicals in the bottling of drinks
SPMSS Ltd	P.O.Box 588 Banjul Tel. 39-44-04/99-04-42 Fax. 39-28-66	Construction and maintenance of swimming pools Imports chemicals
Medical Research Council	Atlantic Boulevard, Fajara Tel. 49-54-42/49-54-46 Fax. 49-62-21	Private have well equipped laboratories and provide useful scientific information on chemical management. Collect, store and analyze data. Involved in risk assessment and reduction,
Gambia College	Brikama Tel. 48-47-48; Fax. 48-48-12	Training college for nurses, public health inspectors, agriculture and livestock assistants. Provide information on sound chemical management
Gambia Technical Training Institute	Old Jeshwang Tel. 22-76-89; Fax. 48-48-12	Use source of information on chemicals used in industrial processes
National Library	Reg. Pye Lane, Banjul Tel.22-64-91; Fax. 22-37-76	Valuable collection of publications of chemical management.
National Agricultural Research Institute	Yundum Agric Station Tel. 47-28-74; Fax. 47-28-75	Provides information, research and training on agro-chemicals
The Association of	Garba Jahumpha Road, Bakau	Umbrella organization of over 100 NGOs.

Non-governmental Organisations		
Sunu Kerr Ltd	Sayerr Jobe Avenue Sereekunda. Tel 39-49-54	Importation and sale of household/consumer items like cleaning substances, paints, etc. Importation and sale of Pesticides
Jimpex	Jimpex Road, Kanifing Tel. 39-27-39; Fax 39-27-03	Importation, formulation and sale of consumer chemicals such as paint

6.2- Summary of Expertise Available Outside of Government

Chemical management expertise outside of the government is limited primarily in the private entities involved in the retail and application of chemicals and pesticides. However in research Institutions such as the state owned National Agricultural Research Institute and other non-state owned research institutions like the MRC and the ITC expertise is available (table 6.A). Charity organisations and the offices international organisations in the Gambia have qualified staff involved in chemical management. However those areas of intervention are not as wide as that of research institutions. Professional Organisations like the Gambia Medical and Dental Association is involved in policy formulation and analysis.

Table 6.A Summary of Expertise Available Outside of government

Field of Expertise	Research	Industry	University	Environment/Consumer Groups	Labour Unions	Professional Organization	Charity
Data collection	X	X					
Testing Chemicals	X						
Risk Assessment	X	X	X				X
Risk Reduction	X		X				X
Policy Analysis						X	
Training and Education	X	X	X				X

Research Alternative							
Monitoring	X	X					X
Enforcement		X					
Information of Workers	X	X	X			X	X
Information to Public						X	
Other (Specify)							

6.2- Comments and Analysis

A wide range of chemicals is imported into the country for a variety of uses. A small number of these chemicals are toxic to the environment if misused or disposed of inadequately. In addition, improper handling and storage of chemicals can constitute a danger to public health.

The National Environment Agency is mandated to regulate the management of chemicals and pesticides in the Gambia. The Agency therefore formulates government policies related to the control and management of these substances. It is apparent that the Agency works closely with the private sector and NGOs. This is achieved through various working groups and task forces. Although there is no clause specifying the role of NGOs in (government) decision-making concerning chemical management, there is no embargo on such organizations providing relevant information and advice.

The Gambia Environmental Action Plan (GEAP provides the policy framework for environmental management in the Gambia. While considerable progress has been made, GEAP II will try to address some of the shortfalls of GEAP phase I implementation.
The multi-sectoral nature of the GEAP implementation program meant that all collaborating agencies at the decentralized level should be involved.

Non-governmental Organizations are instrumental in sensitizing the farming community in environmental management issues in general and chemical management such as organic waste management and integrated pest management in particular.

Under GEAP Phase II, industry and agencies will be provided with assistance to eliminate specific, priority impediments to the adoption of sound environmental practices in resource-based private sector firms.

Chapter 7: Inter-ministerial Commissions and Co-coordinating Mechanisms

Chemicals management is cross sectoral in nature and requires the participation of all concerned parties. Government, non-government, private sector and even interest groups should be involved in the management of chemicals. Although law to exercise this function has mandated certain sectors, nevertheless the role of other sectors should not be minimized.

The establishment of multi sectoral mechanisms to administer legislation in some cases is a very healthy approach in chemical management.

7.1- Inter-ministerial Commissions and Co-coordinating Mechanisms

Several inter-ministerial commissions and co-coordinating mechanisms exist in the form of Councils, Boards, Working Groups (table 7A)

Table 7A: Overview of Inter-ministerial Commissions and Co-coordinating Mechanisms

Name of Mechanism	Responsibility	Secretariat	Members	Legislative Mandate/ Objective	Information Provided in 7.2 (Yes/No)	Effectiveness
NEMC	Policy making organ on Environmental Management	NEA	Head of State; DosH; DSFNRE; DSFEA; DSLGL;DSTIE & NEA	NEMA	Yes	Effective
HCPCMB	Highest authority responsible for registration hazardous	NEA	DHS; DAS; DLS; NARI, AGC; GCCI; DCE; & NEA	HCPCMA	Yes	Very Effective

	chemicals & pesticides					
MB	Control & Management of Drugs & Pharmaceuticals it as policy making & organ	MHSWWA	DHS; The Chief Pharmacist; The Association of Pharmacies; MRC; GMDA; A Medical Doctor	The Medicine Act	Yes	Effective
NARB	Carries out research work on agricultural products	NARI	TANGO; DSFNRE; DOSA; GCCI	An Act	Yes	Effective
CJIC	Advisory role to DSTIE especially on worker injury & compensation. Serves as link between government & ILO	DoL	DSTIE; Trade Unions, GHA; GCC Industries, Representative of Employers	The Labour Act	Yes	A Labour Advisory Board needed
WRC	To promote good management of water resources	DWR	DoSH; DSLGL; DSFEA; GPA; NAWEC	The Water Resources Act	Yes	Effective

7.2- Description of inter-ministerial commissions and co-coordinating mechanisms

The following co-coordinating mechanisms in areas related to chemicals management exist

1. National Environment Management Council (NEMC)
2. Hazardous Chemicals and Pesticides Control and Management Board (HCPCMB)
3. Medicines Board (MB)
4. National Agricultural Research Board (NARB)
5. Combined Joined Industrial council (CJIC)
6. The Water Resources Commission (WRC)

7.2.1- National Environment Management Council

It is the highest authority on Environmental Management. It is a policy-making organ. It is inter-ministerial. The issues covered among other environmental matters are pesticides and chemicals. Parties represented are the Head of State, the Ministries of Health, Agriculture, Finance and Economic Affairs, Local Government and Lands, Trade, Industry and Employment and the National Environment Agency. The latter assumes the secretariat. The legislative mandate is an Act. The council should meet at least once in every three months Meetings of the Council are not so frequent.

7.2.2- Hazardous Chemicals Pesticides Control and Management Board

Interdepartmental/inter-institutional Board. It is the highest authority on pesticide and hazardous chemical management and control and is responsible for registration and awareness raising. It is a decision-making body and majority voting arrives at decisions. Issues covered are pesticides and other hazardous chemicals. Parties represented on the Board are the Departments of Health, Agriculture, Livestock Services, the National Agricultural Research Institute, the Attorney General's Chambers, the Gambia Chamber of Commerce and Industries (Private Sector), the Customs and Excise Department and the National Environment Agency. The latter is the Secretariat. The board has been established by an Act. It meets once every two months but the Secretary can call an emergency meeting.

7.2.3-The Medicines Board

The members of the Board are: Department of Health Services, The Chief Pharmacist, The Association of Pharmacies, The Medical Research Council (private), Gambia Medicinal and Dental Board Association, A Medical Doctor. The Board is responsible for the Control and Management of Drugs and Medicine it is a policy-making organ mandated by the Medicine Act. Chemicals dealt with are generally pharmaceuticals.

7.2.4- National Agricultural Research Board

The members on this Board are: The Association of Non Governmental Organization (TANGO), The Department of State for Agriculture and Natural Resources, The Department of state for Education, The Gambia Chamber of Commerce and Industries (private). Law to carry out research work on agricultural products mandates the Board. The Institute uses pesticides in some of its research work.

7.2.5-Combined Joint Industrial Council

The members are: Ministry of Trade, Industries and Employment (Labour Department), Trade Unions, Hotels, Gambia Chamber of Commerce and Industries (Private), representatives of employers. Responsibility: Advisory role to the Department of State especially on worker injury and compensation. Attends International Labour Meetings and serves as link between government and ILO. Administer the Labour Act. Workers include those dealing with all sorts of chemicals. Government is being advised on the establishment of a Labour Advisory Board in the near future.

7.2.6- The Water Resources Commission

Members of this commission are: Department of state for Health, Department of State for Local Government and Lands, Department of State for Economic Affairs, Gambia Ports Authority, The Utility Holding Co-operation, Department of State for Agriculture and Department of State for Fisheries, Natural Resources and the Environment. The commission is charged with the responsibility to promote the good management of water resources and the abatement of harmful effects. To establish a licensing system for water users and to promote preparation of sectoral water plans mandated by the Water Resources Act. Chemicals of concern here are those added to water (Hypochlorites etc) and chemicals leading to contamination.

7.3- Description of Mechanisms for Obtaining Input from Non -governmental Bodies

Information from non-governmental bodies is generally obtained by writing official letters to the Head of the Institution. Meetings and workshops are also other channels for information exchange between government and non-governmental bodies. NGOs participate in decision-making programs during meetings and workshops. Information can also be obtained from NGOs through their publications and radio programs. Such NGOs include FORUT, Stay Green Foundation, NAWFA, Action Aid the Gambia, the Medical Research Council, Private hospitals, women Kaffos (cultural groups), the Methodist Agricultural Mission, School Environmental Groups.

7.4- Comments and Analysis

The HCPMB is the only existing co-coordinating mechanism for the sound management of chemicals, which cuts across all Departments of states. It has a representation from all Departments of State concerned with chemical management. Representatives are government officials (apart from the representative of the Gambia Chamber of Commerce and Industries) who are well implicated in the routine management or control of chemicals.

The functions of the HCPMB are statutory in the same way as its establishment. The HCPCMB is responsible for the control, management and registration of all hazardous chemicals including pesticides. It monitors and controls the import, sale, manufacture, distribution, storage and disposal of chemicals. It prepares guidelines and conducts campaigns on the environmentally sound handling and use of chemicals and pesticides. The National Environment Agency is the Secretariat of the HCPMB with the Registrar of Pesticides and Chemicals of the same Agency charged with implementing its decisions. The Board relies on the Agency for its implementation work.

Other commissions mentioned in 7.2 are not as directly concerned with the management of chemicals as the HCPCMB. The Medicines Board is generally concerned with drugs and pharmaceuticals. Except for the NEMC and the HCPCMB there are no other linkages between the different commissions and bodies mentioned in 7.2. They work separately.

The HCPCMB has provided for the invitation of other persons to attend and participate in any of its meetings although that person may have no rights to vote. The representation of the ministries concerned with chemicals management permits the easy flow of information from one ministry to another.

Chapter 8: Data Access and use

8.1- Availability of Data on National Chemical Management

The National Environment Agency recently installed an Environmental Information System. There is substantial information on chemicals in the form of literature and database on chemicals imported into the country.

Table 8.A – **Quality and Quantity of Available Information**

Data Needed for	Pesticides (Agricultural Public Health & Consumer Use)	Industrial Chemicals	Consumer Chemicals	Chemicals Waste
Priority Setting	Fair	Fair	Fair	Fair
Assess Chemicals impact under local conditions	Little	Little	Little	Little
Risk Assessment (Environment & Health)	Fair	Fair	Fair	Fair
Classification/ Labeling	Poor	Poor	Poor	Poor
Registration	Good	Good	Good	Poor
Licensing	Good	Good	Good	Poor
Permitting	Good	Good	Good	Poor
Risk Reduction Decisions	Good	Good	Good	Fair
Accident preparedness/response	Poor	Poor	Poor	Poor
Poisoning Control	Fair	Fair	Fair	Fair
Inspection its (Environment/ Health)	Good	Good	Good	Fair
Information to workers	Fair	Fair	Fair	Fair
Information to the public	Good	Good	Good	Good
Environmental Protection	Fair	Fair	Fair	Fair

8.2- Location National data

The Central Statistics Department of the Ministry of Finance and Economic Affairs is the source for all national statistics including chemical imports statistics. The information is however very generic. The department has a newly developed web-site (www.CSD.gm) but does not have specific information on chemical yet. More specific information on chemicals is obtainable from the concerned departments (table 8B). The Department of

State for Health also has a web-site (www.dosh.gm) containing chemical related health issues.

Table 8B – Location of National Data

Type of Data	Location(s)	Data Source	Who has Access	How to Gain Access	Format
Production Statistics	None				
Export Statistics	D.S.T.I.E		Public	By Request	Records
Chemical use statistics	NEA and Statistics Dept.	Department of State for Agriculture & private Dealers	Public	By Request	Register
Industrial Accident Reports	RVH and Labour Dept.	Factories	Public	By Request	
Occupational Health Data (Agricultural)	Labour Dept. D.S.T.I.E.		Public	By Request	
Poising Statistics	RVH	Department of State for Health	Public, Government	By Request	Records
Pollutant Release and transfer register	None				
Hazardous Waste Data	NEA	NEA	The Public	Through RPC and P.O. Env. Quality	Files
Registration of Pesticides	NEA	NEA	The Public	Through RPC	Files
Register of Toxic Chemicals	NEA	NEA	The Public	Documentation-Centre, NEA	Files
Register of Imports	NEA	NEA	The Public	Through RPC	Data Base
Inventory of existing Chemicals	NEA	NEA	The Public	Through RPC	Files
Register of producers	None	None			N/A
PIC Decisions	NEA	NEA	Importers	Through	Files

				RPC	
Transport Accident	Hospitals/ Police	Hospital/ Police	Insurance Companies/Law courts	“Written Request	Report
Other					

8.3- Procedures for collecting and Disseminating National/Local Data

The collection and dissemination of local data on chemicals concern three government agencies and Departments of State (NEA, Department of State for Health and Department of State for Agriculture) and some NGOs. Data is generally collected through questionnaire, field visits, registration forms, etc. The Department of State for Agriculture is responsible for farmer education including promoting the judicious use of agrochemicals. It also collects and disseminates information on chemicals. The Department of State for Health collects data such as pesticides residue limits in food within the "Framework" of Codex Alimentarius Principles. The National Environment Agency, through the HCPCMB is responsible for the registration of chemicals. The registration of industrial chemicals falls under the auspices of the NEA, whereas that of pesticides is under the CILSS common registration system. However, post registration surveillance of pesticides falls under the auspices of the Board.

An application for the registration of a Hazardous Chemical shall be made by any person desiring to import, manufacture, sell or use any chemical. The information can be obtained from the manufactures or from international literature. The application is submitted to the Registrar at the NEA.

For pesticides, the application is submitted to the Permanent Secretariat of the common CILSS regulations.

Developers proposing to establish large commercial farms, industries etc. are required to commission environmental impact studies, the reports of which must specify chemicals to be used, produced or generated as by-product and their management strategies.

8.4 Availability of International Literature

National information on chemicals is generally scanty and thus international literature plays a crucial role in informed decision making. International literature is available in the form of guidelines, journals, reports, booklets, etc.

Table 8.C: Availability of International Literature

Literature	Location(s)	Who has access?	How to gain access
Environmental Health Criteria Documents (WHO)	WHO Library Kotu, NEA Banjul	Anybody interested	Through Information Officer Through Documentalist
Health and Safety Guides (WHO)	WHO Library Kotu, NEA Banjul Gambia College	Anybody interested	Through Decumentalist

	Laboratory	Students Researchers	
International Chemical Safety Data Cards (IPCSE/EC)	NEA	Researchers, Public	Register
Decision Guidance documents for PIC Chemicals (FAO/UNEP)	Banjul FAO Library ECOWAS Avenue, NEA Banjul	Anybody interested	Request through Librarian
FAO/WHO Pesticides Safety Data Sheets	Banjul, FAO Library ECOWAS Avenue	Any body interested	Request through Documentalist
Documents from the FAO/WHO Joint Meeting on Pesticide Residues	Banjul FAO Library ECOWAS Avenue NEA Documentation Centre, Fitzgerald Street Banjul. Department of state for Health, Banjul	Anybody Interested	Request through Documentalist
Material Safety Data Sheets (industry)	Manufacturing Industries e.g. Sankung Sillah & Sons	D.S.T.I.E, Public	On the Job
OECD Guidelines for the Testing of Chemicals	NEA Laboratory	Public	Technicians
Good Laboratory Practice Principles	MRC Laboratories Fajara, NEA Laboratory	MRC, Staff Anybody interested	Written request through the administrator
Good Manufacturing Price Principles	Not Applicable	Not applicable	Not applicable
WHO/UNEP Global Env. Library Network	NEA Documentation Center	Public, Researchers	Documentalist
Others			

8.5- Availability of International Databases

Despite the limited availability of international databases in the country, the internet is a useful resource for accessing data on environmental or chemical management issues.

Table 8.D: Availability of International Databases

Literature	Location(s)	Who has access?	How to gain access
IRPTC	NEA/internet	The Public	By Request
ILO CIS	DOSTIE	The Public	By Request
IPCS INTOX	Not Available		
Chemical Abstract Services Database	internet		
Relevant Databases from Other Countries	NEA	Public	Public
Other			

8.6 National Information Exchange Systems

It is clear that various channels of communication exist for the flow of information between the government represented by NEA, and NGOs. It is up to both parties to maximize usage of these establishment linkages to formulate plans that can be translated into effective actions for the sound management of chemicals in the Gambia. GEAP phase II is meant to address future collaboration between the NEA and NGOs and the private sector through training and provision of limited office level equipment and supplies to strengthen information exchanges between firms.

In general terms, the national information exchange systems of any nature should aim at bridging the gap between and within nations. The following features must constitute the indispensable composite attributes of an effective national information exchange systems.

- Ensuring that national capacity exists to support decision making
- Provision of interaction mechanism between scientists and decision-makers, and chemical (material) users
- Establishment and re-enforcement of networks both with international as well as national partners
- Provision of sources of response to questions such as " who has" and "where is" the information
- Provision of a structural methodology of gathering, storing, processing and distribution of chemical related information.

- Maintain a capacity to make relevant information accessible in the form and at the tune required as well as strengthening the capacity to use the information provided by partners.

8.6.1- National activities that allow information flow take the following forms:

I. Educational Campaigns – competitions, talks, debates.
II. Theatre groups – participatory dramas, plays, etc.
III. Workshops, Seminars, organized discussions on radio, video, clips, etc.

Inter-ministerial co-coordinating committees do exist within some ministries such as the committee for Malaria Control within the Ministry if Health, Information can be acquired from government Ministries, Departments and NGOs through formal reports. At times data can only be obtained through indirect channels. Confidential information is retrieved often with restricting conditions. In 2003, a Chemical Information Exchange Network (CIEN) organized by UNEP in collaboration with EPA, took place under the auspices of the NEA. It brought together key institutions concerned with chemicals management in this country. The training recommended the establishment of an information system, including a web site.

8.7- Comments and Analysis

Information on chemicals is available in the form of reports, literature (national and international databases). The information however is still considered very limited and disorganized; information sources being scattered in different institutions. A networking among the information sources, as proposed by the CIEN, would be very beneficial to chemical management and would go a long way in facilitating information dissemination.

The GEAP M&A strategy established a statistical system for collecting and analyzing data for the State of the Environment Report of the Gambia (SER). The system which is to be implemented and coordinated by the NEA depends largely on multi-sectoral support, in terms of the provision of data, collected through administrative records, surveys and censuses, to the NEA by the collaborating institutions, in particular, the data centers.

A study of Information Sysytems under the NIP for POPs has revealed that quantitative data on chemical pollutants, in particular, the twelve POPs is virtually not available. The UNICEF-Department of Water Resources Survey on water quality in selected schools was ad hoc and did not cover any of the POPs and was limited in geographic scope.

There are no satisfactory, organized, and sustainable statistical system for collecting relevant data that could be used for reporting the management of POPs.

The use of databases is very limited and some of the existing databases need to be improved upon. Not all the databases are automated and much needs to be done to improve them. The existing information mechanism could be strengthened through networking amongst suppliers and through the provision of a structural methodology of collecting, storing and disseminating data.

The NEA inspectorate is currently developing a better database in Microsoft Access. The database may be ready in two to three months time. The database has a number of folders covering a number of items. One of the folder labeled Data, has a sub-directory labeled Importation of pesticides. The spreadsheet of this sub-directory has the following information: date of import, importer, trade name, active ingredient, chemical composition of product, given concentration, quantity imported, and total active ingredient. The complete database in Access would be useful for preparing sampling frames of major importers and dealers of pesticides and other hazardous chemicals. It would be useful if the same set of information is provided for re-export pesticides. However, for the purpose of data entry and generating reports relevant to the management of the 12 POPs, a separate and independent database has to be developed.

The recommendation of the study on Information systems under the NIP for POPs should be adopted.

The organisational chart of the proposed information system shows that the proposed POPs section for the NEA will receive data from seven main sources as indicated by the direction of the arrows to the POP's section. The section should be responsible for soliciting the required information from the sources through prescribed multi-sectoral questionnaires

Chapter 9: Technical Infrastructure

9.1- Overview of Laboratory Infrastructure

Table 9.1: Overview of Laboratory Infrastructure for Regulatory Chemical Analysis

Name	Location	Equipment/Capabilities	Purpose
1- National Drug Control Laboratory, Ministry of Health	Banjul	GC, UV – Spectrometry, TLC, pH	Drug Control Program and quality Control of Pharmaceuticals
2 – Water Quality Laboratory,	Abuko	Flame Photometry, pH,	Water quality monitoring and

Department of Water Resources		titration, conductivity, Spectrophometry, Bacteriological analysis	management, PCBs in soil, PM10 in air,
3 – Pesticides Analysis Laboratory, NEA	Abuko	GC/FID, wet chemistry, determination of flash point, melting point and density of substances	Quality Control of Pesticides
4 – Veterinary Laboratory, Department of Livestock Services	Abuko	Hematological, Parasitological and bacteriological analysis, ELISA	Monitoring of pathogenic bacteria in foodstuff and veterinary analysis
5 – Aflatoxin Laboratory, National Agricultural Research Institute	Brikama	TLC for determination of Aflatoxin	Monitoring of aflatoxin levels in groundnut
6- Soil Analysis Laboratory, NARI	Brikama	Flame photometry, titration, micro-kjeldahl, pH, conductivity meter	Soil analysis for research and services
7- Medical Research Council, Medical Research	Fajara	Flame photometer, spectrophotometer, bacteriological analysis	Medical Research in tropical diseases
8- NAWEC Laboratory	Serrekunda	Chemical and bacteriological analysis of water	Water quality monitoring
9- University of the Gmabia Chemistry Laboratory	Kanifing	Computerized analytical programs to measure dissolved oxygen, pH, colour, conductivity, temperature, pressure and humidity	Teaching
Royal Victoria Teaching	Banjul	Blood parasite idenfication	

Hospital Laboratory			
10 – Food and Nutrition Unit	Cape Point	Bacteriological analysis	Food quality control

Government laboratories are all accredited by the respective Departments of State or Agencies under which they operate (table 9.1). The National Drug Control Laboratory has accreditation from the United Nations Drug Control Program. Additionally, the MRC clinical laboratory, a non-governmental institution, is accredited by the Medical and Health Department.

All laboratories utilize internationally recognized protocols in their specific areas of work (American Public Health Association, Water Pollution Control Federation, IAEA, FAO, AOAC, CIPAC etc).

9.2- Overview of Government Information Systems/Computer Capabilities

Table 9.B: Computer Capabilities

Computer System/Database	Location	Equipment Available	Compatible	E-Mail	Current Uses
EIS/Land Use Database	National Environment Agency (NEA)	1 Pentium PC	Yes	Yes	- Land use planning- Mapping
Agro-meteorological Information System	Department of Water Resources (DWR)	2 Pentium PCs, 5 other PCs.	Yes	Yes	_ Analysis and storage of agro-meteorological information
Water and Air Quality information	Department of Water Resources	3 Pentium PC	Yes		Water quality and air quality database.
Ministry of Trade Network	Dept. of Trade	3PCs, networked	Yes	No	- Trade Statistics
Gambian Port Authority (GPA)	GPA	Various PCs	Yes	Yes	- Database, - Accounting
Customs and Excise Database	Customs and Excise	10 PCs Asycuda System	No	No	- Customs Revenue Collection
Central Statistics Database	Central Statistics	14 PCs INTE IPMS System	Yes	Yes	- Census and statistical data
Gambia Technical Training institute (GTTI)	GTTI	5 Pentium PCs 60 Terminals	Yes	Yes	Administration and Education
Epidemiology and Statistics Unit (ESU) Database	ESU, Dept of Health	9 PCs	Yes	yes	- Data base - Statistical analysis - Report Writing

The systems mentioned above are the databases in use, but most Government Departments have PCs that can accommodate data management programs.

In respect to co-operation programs with other countries, a number of links have been established both with laboratories in the region and with international organizations. The National Drug Control Laboratory participates in the UNDCP International Proficiency Test, a process that would lead to GLP Certification. The Pesticides Analysis Laboratory has an agreement with the GTZ Pesticide Formulation Control Laboratory, Germany, to compare analysis results. Additionally, it tends to be one of the designated regional laboratories for the CILLS Common Registration Program. Research laboratories (MRC, ITC) collaborate closely with international organizations through projects and exchange of research personnel. The Water Quality Control Laboratory is participating in GEMS/Water quality control test. A process that usually leads to GLP certification.

The soil Analysis Laboratory has done collaborative work with institutions abroad, but these programs were project-oriented and were interrupted on completion of the project. It continues to collaborate with the University of Wisconsin, US.

9.3- Overview of Technical Training and Education Programs

At present there are no established programs related to chemical management. Training is carried out as part of development projects, both technical and capacity building-oriented, and is directed to provide technical or managerial skills relevant to the project (ozone depletion substances, pesticides, hazardous waste, etc). Training is carried out both in country or in institutions abroad. The level of training varies from technical courses to university education overseas.

In collaboration with the National Environment Agency, the Gambia Technical Training Institute (GTTI) has incorporated Environmental Education in its existing courses, and is also responsible to implement the training component of the Ozone Depleting Substances Country Program. Additionally, GTTI participates with the University of the Gambia program; Environmental Studies is one of the degrees offered by the program.

The Hazardous Chemicals and Pesticides Program, and the Environmental quality Program, both of the NEA, with funding from projects, conduct training for target groups and various government departments.

The School of Public Health, operated under Gambia College, includes in its curriculum subjects related to chemical management, especially waste disposal.

The Department of Agricultural Services through their Farmer Field Schools offer training to farmers including the judicious use of pesticides.

9.4- Comments and Analysis

The first 9 laboratories included in table 9.1 have analytical capacities and personnel to conduct work in various areas of chemical analysis. The capacity of these laboratories varies but all of them are operational. The other laboratories included have capacity only for a limited scope of analysis that fulfills their specific needs.

The major deficiencies observed, especially in Government Laboratories are:

i) Laboratories built through projects are difficult to sustain at the end of the project. There is difficulty in obtaining laboratory supplies, as all chemicals have to be imported, usually from Europe or the US. The pesticide Formulation Laboratory has only 1 GC equipped with packed columns hence limiting its capacity to analyze products since many pesticide formulations can only be analyzed using HPLC. The closure of the technical assistance program of GTZ, has impaired the analysis of pesticide formulation with multiple active ingredients and supply of analytical standards.

ii) Human Resources. There is high attrition rate in government institutions and lack of enough qualified technical staff at the higher level has worsen the situation. Lack of career prospects and recognition, especially for the lower cadres, results in movement of trained people to other positions with higher wages or better prospects, leaving a technical deficiency behind. Additionally, a Government freezes on the creation of a new post limit the capacity of expansion of laboratories in government departments.

iii) Disposal of chemicals is done through normal drainage system posing a threat to the groundwater.

The number of laboratories is sufficient to cover the present needs of the country if they are strengthened in terms of material and human resources. However, there are no laboratories for food and chemical residue analysis (industrial chemicals and waste) or for food quality control for public health laboratory. Continuous training of staff on new techniques is important to be in line with scientific community.

The only mechanism for the control of chemicals in the country is the Pesticide and Hazardous Chemicals Board and the Pesticides Unit at the NEA, which conducted inspections and registration of dealers/applicators. Additionally, two working groups, the Hazardous Chemicals working Group and the Environmental Quality working Group deal with the establishment of functional structures for the management of hazardous chemicals and environmental monitoring. The membership of these groups is cross-sectoral, but the number of experts in chemical management is still limited.

University Laboratory is fully computerized and certain projects, especially research oriented, could be channeled for assistance.

Chapter 10: International Linkages

10.1- Co-operation and Involvement with International Organizations, Bodies and Agreements

Table 10.A: Membership in International Organizations, Programs and Bodies

International Organizations/Activity	**National Focal Point**	**Other Ministries/ Agencies Involved**	**Related National Activities**
Intergovernmental Forum on Chemical Safety (IFCS)	National Environment Agency (NEA)	Department of State for of Agriculture, Department of State for Health	CIEN training, other training sessions on chemical management, bilateral cooperation with Senegal to prevent illegal entry of chemicals
UNEP IRPTC – National Correspondent IE/PAC- Cleaner Production Centre	NEA		Participation in international meetings and programs, implementation of recommendations (IR)
IPCS	NEA		Assessment of priority chemicals and risk reduction strategies for permethrin and deltamethrin
WHO	DHS, DOSH	DOSE, DWR (DSFNRE)	Water and Sanitation Education Programs
FAO	The Permanent Secretary DSFNRE		Food Security Programs
UNIDO	DSTIE		Preparation of National Industrial Policy Document, Implementation of recommendations
ILO	DOSTIE	Dept. of Labour	Participate in International Meetings
World Bank	DOSFEA	All other Departments of State and some government	Provision of Health for all Institutional Capacity Building, Improve Education Services,

		Agencies	Increase Agricultural Production and improve Extension Services, Infrastructure and farming practices, Port Development and Highway Maintenance, Water Supplies Systems
African Development Bank	DOSFEA		Co-finance of WB Projects
ECOWAS	DOSTIE; DOSE	DOSFEA; DCE; DWR and DOSH	Sensitization of Gambian population on ECOWAS Protocols, Implementation of ECOWAS Agenda of 1996 (includes free movement of people and trade)

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

International Agreements	Primary responsible Agency	Relevant National Implementation Activities
Agenda 21-commission for Sustainable Development	National Environment Agency (NEA), Department of Water Resources, Parks and Wild Life Management, Department of Fisheries, department of Forestry.	Implementation of national Capacity Self Assessment Project, implementation of other Agenda 21 Programs in the area of environment, climate change, forestry and bio diversity, sensitization programs on sustainable development.
FAO Code of Conduct	NEA, DOSA	Implementation of the protocol & the PIC Procedure
Vienna Convention/Montreal Protocol	NEA	Implementation nof Refrigeration Management Program, training of technicians and Custom Officers in ODS management
ILO Convention 170	Department of State for Trade, Industry and Employment	Implementation of worker safety codes
Basel Convention/Bamako Convention	NEA	Clean up and disposal operation of 13 tons of obsolete pesticides, training in clinical waste management,

		development of a Waste Management Act
WTO Agreement	Department of State for Trade, Industry and Employment	Co-ordination of trade related intellectual property (TRID) and other WTO recommendations
Stockholm Convention	NEA	Preparation of National Implementation Plan for POPs
CILLS Common Registration Program for Pesticides	NEA	Post registration surveillance of pesticides.
Convention on Climate Change	Dept. of Water Resources	Inventory of greenhouse gases

10.1 Participation in Relevant Technical Assistance Projects

Table 10.C: Participate as Recipient in Relevant Assistance Projects

Name of Project	**International / Bilateral Donor Agency Involved**	**Nations Contact Point**	**Objectives**	**Relevant Activities**	**Participating National Organizations**	**Duration**
Gambia Environmental Action Plan 2 (GEAPII)	UNDP	National Environment Agency (NEA)	Implementation of the Gambia Environmental Action Plan	Sensitization and public awareness, advocacy, improved natural resources management, coastal protection, decentralization and governance	Various Government Agencies, Private Sector and NGOs	2001-2005
Climate Change enabling activity	UNDP	NEA, DWR				
Regional Capacity Building for Improving the Quality of Greenhouse Gas Inventories (West and Francophone Central Africa)	UNDP	DWR	Build national capacity for improving the quality of data inputs to national greenhouse gas inventories.	Reducing uncertainties and improving activity data and emission factors in land-use change and forestry (LUCF) sector.	Various Government agencies and one NGO	2002-2005
Water Supply and Sanitation Study	ADB	National Water and Electricity Company (NAWEC)	Assess long and medium term water and sanitation requirements over a 25- year period	Provide strategic development plan, design a project for the immediate requirements to meet growth centers of the country		2003-2004
Participatory Health, Population and	IBRD/IDA		Improve quality in reproductive health services, in infant and child health	Improve maternity health services, integrate vertical programs to combat		1998-2003

Nutrition Project			services, in nutrition services for women of childbearing age, infants and children and in management and implementation a family health program	childhood diseases, support nutrition formulation and institutional strengthening, implementation of family health program by capacity building and policy development, upgrading and maintaining health infrastructure, establishment of blood supply system, procurement of equipment. Capacity building in the area of cost recovery, information, education, communication, monitoring and evaluation and research application		
Third Education Sector Project	IBRD/IDA	Dept. State for Education	Implementation of Government's Education Sector Policy Framework	Expansion of basic education program, Girls education program, improving the quality and relevance of basic education, develop early childhood development and care (EDCD) strategy. Construct new secondary schools, train teachers and introduce computer education programs		1998-2004
Poverty Alleviation and Capacity Building Project	IBRD/IDA	GAMWORKS	Improve the living condition of the urban population and the poor in particular	Provision of adequate infrastructure and services (i.e. establishment of an area wide, solid waste collection and disposal system), development of a lasting and enabling environment for municipal investment financing and for employment creation and income generation.		1999-2003
HIV/AIDs Rapid Response Project	IBRD/IDA	Office of the President	Assist the Gambia government to stem a rapid growth of HIV/AIDs	Capacity building and policy development will support the development of national strategy and action plan, advocacy, training monitoring evaluation, and technical support activities, increase access to prevention		2001-2005

				services as well as care and support for those infected and affected.		
Enabling activities for the Stockholm Convention on Persistent Organic Pollutants (POPs): National Implementation Plan for the Gambia	UNEP	NEA	Protect human health and the environment from POPs	Prepare ground for implementation of the convention in the Gambia, Assist the Gambia in meeting its reporting and other obligations under the convention, Strengthen Gambia's national capacity to manage POPs and chemicals generally		
National Capacity Needs Self-Assessment for Global Environmental Management (NCSA)	UNEP		Determine the capacity needs for the Gambia in the areas of biodiversity conservation, climate change and desertification /land degradation			2003-2005
Community Skills Improvement Project	ADB	DCD	Literacy, micro-credit and income generation	Provide functional literacy and income generation skills training and micro-credit facility to 40,000 target beneficiaries		2003-2005
Gateway project	IBRD/IDA	DOSTIE	Establish the Gambia as a globally competitive export and processing center	Establish physical infrastructure needed for an operational Free Zone at the airport, establish Gambia Investment Promotion and Free zone Agency (GIPFZA), training public and private sectors in quality management and control processes, ISO certification concept, environmental studies and mitigation measures		2002-2007
Support for Poverty Eradication in The Gambia	Japan/UNDESA	DWR	Managing Water and Energy Services	Provision of sustainable water and energy services, creation of economic assets by promoting productive application and income generation activities, strengthening local capacities involved in water and energy services and income generation activities		
Lowlands Agricultural	ADB/IFAD					

Developme nt Program						
Rural Finance and community initiatives Project	IFAD	DSFNRE	Increase agricultural productivity and sustained growth of the income of small farmers	Training Material Supply Strengthen Agricultural Research Systems, Pilot Projects to promote self-reliance	DSFNRE NEA	1995
National Environmen t youth Corps Project	UNDP	NEA	Provide income generating activities for youths	Waste management, bee-keeping, horticultural activities	NEA, Departme nt of Youths, National Youth Council Commun ities	2002-2004
Highly Indebted Poor Countries Projects(Tu mani Tenda Project)	World Bank and other funding agencies	DOSFEA (NEA for the Tumani Tenda Project)	Enhancement of capacity of rural community of Tumani Tenda (comprising of 300 people)	Ecotourism, community forestry and horticultural activities	NEA, Departme nt of Communit y Developm ent, Departme nt of State for Tourism and Culture, Associatio n of Small Scale Enterprise s, communit y of TT	2002-2004
Capacity 21 Project	UNDP	NEA	Promotion of sustainable development through the development of effective and financially self sustainable systems in natural resources and environmental management	Capacity building and sustainable development activities, sensitization programs	Private sector, NEA, Departme nts dealing with other natural resource managem ent, Strategy for Poverty Alleviation Office, Communiti es.	2002-2004

10.2- Comments/Analysis

The National Environment Agency co-ordinates national programs with respect to international activities and agreements in the area of chemical

management, e.g. FAO Code of Conduct for pesticides, Montreal Protocol, Rotterdam Convention on PIC, Stockholm Convention on POPs. Various working groups have been formed to implement national activities of international agreements.
International organizations have little contact with the working groups, and deal directly with the implementing government departments for all matters related to assistance programs. Often, due to lack of communication between government departments, working groups can only assess new projects after they have started, and this seriously restricts the effectiveness of the working groups. Field Offices of International Organizations should be more acquainted with the role of the NEA and working groups in order to seek advice on possible conflicting components of new projects and to ensure that these are fully compliant with the existing laws. Government departments should have the same responsibility.

Two serious obstacles to the implementation of international agreements are in the area of policymaking and law enforcement. Lack of personnel slows down judicial procedures, which finally delay adoption of international agreements in the legislation.
There is a need to increase the number of Lawyers in the Department of state for Justice or create a unit responsible for environmental law.

Follow up of agreements is sometimes a problem due to lack of activities related to it or displacement of personnel. When this happens, there is a danger of the agreement being ignored during the planning of new policies and programs. The NEA should ensure that all interested parties are aware of the contents of the agreements and that government policies adhere to their principles.

Also, the public is by large unaware of the participation of the country in international agreements, due to inadequate funds to sensitize the population and promote related activities

The mass media should be used to enlighten the public on the contents of international agreements and environmental issues so as to facilitate their implementation.

There is no effective mechanism for disseminating data in the country. It is necessary that interested parties adopt a system to access data related to chemical management for use. Improvements in the accessibility to E-Mail and World Wide Web have greatly facilitated communication with international bodies and the access to information. Inter-departmental networking or development of websites will go a long way in improving access to information
.

Chapter 11: Awareness of the Public and Workers

11.1 Introduction

The Gambia's concern with environmental issues dates as far back as 1977, when the Banjul Declaration was issued in favor of the protection of the country's bio diversity. However, the main environmental activities were aimed at increased agricultural activity, income generation, literacy, credit and savings and improved health nutrition. In a subsequent attempt the government created an institutional framework for addressing environmental issues that resulted in the creation of the Environment Unit under the Ministry of Natural Resources in 1983. This was followed in 1994, by the enactment of the National Environment Management Act (NEMA), which provided legislative measures for environmental protect. To reinforce the NEMA the Gambia Environmental Action Plan (GEAP) was prepared with a broad cross-sectional involvement of government agencies and NGOs, under the auspices of the National Environmental Management Council (NEMC). The NEMA provides the basis for the establishment of the NEMS. The council supervises the implementation of the GEAP.

According to the report of the study carried out under the NIP for POPs, on awareness creation, we have substantial technical and scientific know-how and expertise in the area of the legislative and material surveillance and control of hazardous chemicals including POPs substances, but this material and equipment and this know-how is primarily limited to those institutions which, by nature of their work and responsibilities, are directly or indirectly in contact with the subject matter. The study further indicates that the knowledge, skills and expertise required for the safe control, management, disposal and restrictions of hazardous substances has yet to reach all the necessary instances that could take a firm stance for the elimination and sustainable control of the infiltration of hazardous chemicals including POPs in the country.

However, action that educators/communicators should take should be coordinated and well dovetailed into the overall national strategy for chemicals especially the NIP for POPs. The role that education and information should play in the phasing out of POPs is amply preponderant. Through the systematic, judicious and effective use of the potentials of our media institutions, the general populace and all other essential stakeholders can be brought into the centre stage of action, to collaborate and assist for the country meet its obligations. This is really possible given the traditional contributions that the stakeholders exerted in the overall development of the country to date.

11.2- Mechanisms Available to Educate and Provide Information to Workers and the Public At Large pertaining to the Potential Risks Associated with Chemical Management

11.2.1-Legal Instruments

1. **The National Environment Management Act**

This constitutes and serves as the basis for all environmental policy and law in the Gambia. It provides the legal framework for environmental matters. It is the main legal instrument for environmental legislation and gives direction to maintain a desirable environment. This includes educating and giving information as to encourage Gambian people to participate effectively in protecting the environment.

2. The Hazardous Chemical and Pesticides Control and Management Act, 1994

It gives the foundation for establishment of national chemical and pesticides management board.
The Registrar of Chemicals and Pesticides NEA reinforce the functions of the board in the following ways:

I. Manage, monitor and control the importation, manufacturing, sale, storage, and disposal of hazardous chemicals and pesticides through the issuance of certificates, licenses and permits.
II. Publish list of banned chemicals and pesticides in the government gazette and newspapers and delegate NEA Environmental Inspectors or designated public officer (s) to monitor the use.
III. Ensure that labels on chemicals are not misleading and comply with the provision of the act
IV. Prepare guidelines so that the chemicals and pesticides do not pose serious danger to human or animal health and the environment when applied according to the instructions

V. Ensure that the use of the chemical or pesticide has not been restricted or banned in other countries.
VI. Conducts public awareness campaigns on the safe use of chemicals and pesticides

The Registrar of Pesticides and Chemicals keeps a record of imported chemicals and pesticides, issues licenses and certificates and execute the day-to-day administration off chemicals and pesticides with the help of environment inspectors. The registrar also implements international notification schemes including the PIC procedures.

11.3- General Communications Channels used for Information Dissemination

I Public Information Meetings
II Public notices at strategic positions such as village centers (Bantaba), market places, shopping centers, and schools
III Focus group meetings
IV Production of general information packet (leaflets, posters, brochures, stickers) for distribution
V Radio and Television educational programs (Panel discussion, Phone-in programs, interviews, documentary)
VI Publicity using all the available newspapers and newsletters in the country

11.4- Information Providers and Related Activities

Most of the following agencies disseminate information that indirectly deals with chemical management issues.

1. National Environment Agency: NEA is implementing a national awareness activity called the National Environmental Award Scheme. This is in line with one of the policy objectives of the Gambia Environmental Action Plan (GEAP), which advocates environmental awareness through popular participation. This is one of the activities of the Environmental Education and Communication Program of the GEAP. The main objectives of the award are to:

I Increase awareness of the environment
II Promote and encourage public participation in environmental management
III Promote the use of environmental friendly technologies
IV Demonstrate government\s recognition of individual and community efforts in environmental management
V Reward individuals or groups that participate in viable natural resources management practices as an incentive.

2. Health Education Unit-Ministry of Health: The Unit produces health education messages using a multimedia approach. The unit's environmental awareness and education activities include extension service by public health inspectors, community health nurses, state enrolment nurses and doctors through film/video and material production, mass media, home visits and traditional media.

3. Agricultural Communication Unit: Has a mobile informal education section that mainly targets the rural population. They travel around the country to provide on the spot educational programs through the use of audio visual aids on agriculture and natural resources management including sound agricultural input management. In 2003, the Unit produced, under the auspices of the NEA, and with funding from GTZ, video and audio cassettes on awareness raising in chemicals management issues.

4. Forestry Department of the Ministry of Agriculture and Natural Resources: Carries its environmental education and awareness programs through several units. The Forest Plantation Unit is responsible for developing tree nurseries for the national forests, which covers 34000 hectares in 66 different areas. The Forest Protection Unit is responsible for forest conservation education, licensing and control of exploitation. It comprises of a 1-2-man extension unit which facilities the production of educational materials.

5. Department of Wildlife: Ministry of Agriculture and Natural Resources conducts education and extension with five education and extension units with an average of five staff to a unit. The unit works with communities surrounding the national parks and sensitizes them on issues such as poaching, bushfires, deforestation as well as to help them utilize and renew resources for their benefit and for conservation purposes.

6. Department of Non-formal Education: Department of State for Education conducts and uses literacy classes to disseminate development messages to initiate community activities. Currently, there are plans for conducting a research project on people's environmental perception in Serrekunda to contrast with other areas, such as Kiang West.

7. Non-government Organizations (NGOs)

I. Worldview International Foundation: This organization sensitizes and trains communities on environmental issues. A media center was established to documentation, training and development of awareness programs on the environment, health, population and environmental sanitation at community level.

II. Association for the Development of Women and Children (ADWAC): This organization, which succeeds Safe the Children (USA), carries its activities primarily in the North Bank Division under several sectors. It is active in the food security programs and environmental management. Involve in agro-forestry, horticulture and health. Has been working with seed multiplication for rice and millet, horticultural gardens, three nurseries for schools, soil erosion and salt intrusion control.

III. Catholic Relief Services (CRS): Agriculture and natural resources management, using a participatory approach are amongst the areas of intervention of this organization. Farmers are acquainted with environmentally sound agricultural practices.

IV. Stay Green Foundation: this organization mobilizes, sensitize and trains communities on environmental management, agro-forestry, horticulture, composting and environmental health and sanitation. It provides environmental education programs and facilitates the formation of school-based environmental clubs. It also facilitates the establishment of community gardens-cum-orchard

V. Action Aid-The Gambia (AATG): Active in poverty reduction and food security programs. In the area of environment, Action Aid helps communities with tree planting form nurseries to woodlots, life fencing and agro-forestry. Trains communities on environmental management and creates awareness through functional literacy publications in local languages. Various approaches are used to reach the communities; the emphasis however is on interpersonal communication.

VI. FORUT Gambia: This is a Norwegian International Development Agency that has been implementing an integrated rural development program in the North Bank Divisions of the Gambia since 1993. A key component of that program is forest regeneration through tree planting. Raising awareness and building local institutional capacity are two other components of the program. Community forestry, vegetable gardening and the promotion of improved cooking stoves are amongst the activities carried out by FORUT in North Bank Division.

VII. ST. Joseph's Family Farm: it is involve in farming systems, agro-forestry and horticulture. Provides training on environmental management to farmers.

VIII. Women In Service, Development, Organization and Management: Active in mobilization, sensitization, training and awareness creation at community level. Involve in environmental management, agro-forestry and horticulture.

IX. Wuli and Sandu Development Association: This is a community Based Organisation (CBO) active in agro-forestry and environmental management. Provides training on capacity building and awareness creation at community level.

X. Village Aid The Gambia: Active in agro-forestry, horticulture and environmental management. Facilitate training and awareness creation at community level.

XI. National Women Farmers Association. The umbrella organization of women farmers countrywide. Active in agriculture, sesame production and marketing. It used to supply agro-chemicals to farmers but now turned into organic farming. it offers training programs to farmers and facilitates awareness campaigns.

XII. Njawara Agricultural Training Center: the center mobilizes, sensitizes and develops training programs on environmental management and farming system for youths. Active in agro-forestry, horticulture, animal husbandry & management and poultry keeping.

Chapter 12: Resources Available and Needed for Chemicals (including POPs) Management

12.1- Resources Available and Needed in Government Ministries/Institutions

There are quite a few numbers of professionals (Officer Cadre) in government institutions that are involved in the management of chemicals. The survey, using the Estimates of Recurrent Revenue and Expenditure 1996/97) of the Government of the Gambia, and interviewing the Key Officer (s) at government department, revealed that less than 40 professional staff at various government ministries and departments are involved in the management of chemicals.

(Table 12.A). Professional staff was defined for the purposes of the survey to mean those officers working at government departments who were at or above the Government Salary Grade 8 or over. That grade happens to be the Officer entry point into the service of persons with a minimum qualification of a Bachelors Degree. Thus Technicians, Inspectors, etc. who may be involved in the management of chemicals are excluded.

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

Ministry/Agency Concerned	**Number of Professional Staff involved**	**Types of Expertise Available**	**Financial Resources Available Salaries & Purchase of Chemicals/equipment in Dalasis (**
National		Chemists, Geographer,	

Environment Agency		Biologists, etc	
Health	N/A	Pharmacists, Laboratory Technologists, Public Health Inspectors	
Agriculture	N/A	Veterinary Doctors, Entomologist, Phytopathologist etc	
Fire Service	N/A	Fire Fighters	
Water Resources	2	Chemists and Biologist ++	

To be updated

12.2Resources Needed by Government Institutions to fulfill Responsibilities Related to Chemical Management.

Table 12.B: Resources Needed by Government Institutions to fulfill Responsibilities Related to Chemicals Management

Ministry/Department	**Number/Type of Professional Staff Needed**	**Training/Qualifications Requirements**
National Environment Agency	2 Chemists	Minimum a Bachelors Degree
Health	3 Pharmacists	Same as above
Agriculture	N/A	Same as above
Water Resources	2 Chemists	Same as above

12.3- Comments/Diagnosis

With the exception of the National Environment Agency, the professional and non- professional staff alike of other government departments is involved in the use of chemicals as in their laboratory tests and analysis or drug administration. In contrast, the professional staff working at the National Environment Agency concerned with environmental assessment, monitoring, etc, ensure the safe keeping and utilization of chemicals, proper disposal of waste, for environmental, public health benefits.

Annex 1: Glossary of Terms

Agricultural Chemical means all chemical compounds intended for agricultural purposes including pesticides and fertilizers.

Consumer Chemical means a chemical or chemical product, which is destined, for direct public use; such chemicals include paints, varnishes and other household items

Industrial Chemical means a chemical used in industrial processes or one that issues from an industrial process excluding agricultural chemicals and medicines.

School Chemicals means any chemical, which is used in schools especially for experimental purposes.

Environmental Impact Assessment means studies or examination done on a proposed project or a modified existing project to assess the positive and negative impacts of the project on the environment.

License means an official document issued by the licensing authorities of the NEA to permit a dealer in chemicals to operate (sell, warehouse, apply or research)

Certificate means an official document issued by the registration authorities to certify that a chemical can be allowed entry and used in the Gambia

Pollution Prevention means the strategy put in place by the NEA to prevent, or minimize all types of environmental pollution in the Gambia

Pesticides means any substances or mixture of substances destined to prevent, destroy and/or control pests whether animal or plant pests

Rural means a population generally situated away from the Greater Banjul Area (GBA) and whose occupation is predominantly agricultural.

Urban means a settlement of high density, having a commercial and institutional importance and of which the majority of the population is non-agricultural in occupation.

Trade means the exercise of buying and selling products, both locally and abroad.

Annex 2: Available National Papers Addressing Various Aspects of Chemical Management

1. The Hazardous Chemicals and Pesticides Control and Management Act of 1994 (and its Regulations)
2. The National Environmental Management Act of 1994
3. Environmental Quality Monitoring and Enforcement Strategy
4. Draft EIA Procedures and Guidelines
5. Gambia Agriculture and Natural Resources Sector Assessments
6. The Horticultural Sector Review Document
7. Training for Pesticide Applicators-Training Manual
8. Pesticide Availability and Management in the Gambia (status report prepared jointly by APMU and NEA)

9. Recommendations for Donor Assistance in the Gambia, with Specific Reference to Environmental Monitoring and the Effect of Pesticides on the Environment.
10. The Gambia Women's Development Journal-Horticultural Development
11. Other Workshop Papers and Reports
12. Stockholm Convention
13. Rotterdam Convention
14. Common Regulations for Pesticide Registration in the CILSS member states
15. Work on Comparative Study of the Legal Texts for Pesticide Management in the nine CILSS member states
16. National Implementation Plan for the Rotterdam Convention in The Gambia
17. Study on the incorporation of the international conventions into the national law
18. Draft Waste Act
19. Local Government Act 2002
20. Public Health Act
21. Plant Importation Act
22. Prevention of Damage by Pests Act
23. Water Resources Act
24. Fisheries Act
25. Petroleum Act
26. Montreal Protocol.

Annex 3: Names and Addresses of Key Organisations and Institution

The National Environment Agency
5 JR Forster (Fitzgerald) St, P.M.B. 48, Banjul
Tel: 224867/228056 Fax: 229701 e-mail: nea@gamtel.gm

Department of State for Fisheries, Natural Resources and the Environment
State House
Banjul,
Tel: 223001/227548

The Department of State for Justice
Marina Parade, Banjul
Tel: 228181

The Department of State for Finance and Economic Affairs
The Quadrangle, Banjul
Tel: 228696 Fax: 228943

The Department of State for Trade, Industry and Employment
Independence Drive, Banjul
Tel: 223441 Fax: 227756

The Department of State for Agriculture
The Quadrangle, Banjul
Tel: 472758

The Department of State for Health, Social Welfare and women's Affairs
The Quadrangle, Banjul
Tel: 225510

The Gambia Chamber of commerce and Industries
Buckle St. Banjul
Tel: 394819 Fax: 394820

Banjul Pharmacies
Independence Drive, Banjul
Tel: 227476

Swimming Pool Management and Supervisory Services
Kanifing. P.O. Box 588, Banjul
Tel: 394404 Fax: 392866

Radiville Farms
Nemakunku
Tel: 371606 Fax: 394820

Pest Control Services

P.O. Box 2043, Banjul
Tel: 392104

The Gambia Groundnut Co-operation
Denton Bridge
Tel; 225108 Fax: 224263

The Medical Research Council
Fajara
Tel: 495442

The Gambia college
Brikama
Tel: 484812

The Gambia Technical Training Institute
Old Jeshwang
Tel: 227689 Fax: 390578

The Association of Non-Governmental Organizations
(FORUT) Garba Jahumpa Road, Bakau
Tel: 495622 Fax: 496316

Annex 4: Pesticides and Other Chemicals banned in the Gambia

Chemical	Status	Pic decision
Aldicarb	Banned	No international Notification on import decision
Aldrin	Banned	Fd – ip
Bhc/hch	Banned	Fd – ip
Lindance	Banned	Fd – ip
Camphechlor	Banned	Fd – ip
Ddt	Banned	Fd – ip
Chlordane	Banned	Fd – ip
Dibrimochlord propane		
Endrin	Banned	No international Notification of Import decision
Dieldrin	Banned	Fd – ip
Ethylene dibromide	Banned	Fd – ip
Paraquat	Banned	No international Notification of import decision
Methyl parathion	Banned	No international Notification of Import decision
Pentachlorophenol	Banned	Fd – ip
2,4,5,t	Banned	Fd – ip
Aphox	Banned	No international Notification of import decision
Dinoseb + Salts	Banned	Fd – ip
Fluoroacetamide	Banned	Fd – ip
Chlordimeform	Banned	Fd – ip
Cyhexatin	Banned	Fd – ip
Heptachlor	Banned	Fd – ip
Mercury compounds	Banned	Fd – ip
Crocidlite	Severely restricted	Id – ip
Pbbs		Id – ia
Pcbs	No Status	Id – ia
Pcts	No Status	Id – ia

Chemical	Status
Tris (2,3, Dibromopropyl)	No Status
Captafol	Banned
Chlorbenzilate	Banned
Hexachlorobenzene	Banned

Fd = Final Decision

Ip = Import Prohibited

Id = Interim Decision

Ia = Import allowed

Annex 5: Response on Questionnaires Distributed During this Study

No	Name of Institution	Type of stakeholder	Response	Remarks
1	Department of State for Agriculture	Importer & User	Yes	
2	Plant Protection Unit	User	Yes	
3	National Agricultural Research Institute	Research/User	Yes	
4	Gambia Horticultural Enterprise	Importer	Yes	
5	Sangol Farms Ltd	Importer	Yes	
6	Radville Farms	Importer & User	No	
7	Malaria Control Program	Importer & User	Yes	
8	Department of Health	Importer & User	Yes	
9	Agro-Veterinary	Importer	Yes	
10	International Trypanosomiasis Centre	Research/User	No	

11	Gambia College	User	No	
12	Gam-Veterinary	Importer &User	No	
13	Premier Agro-Oil	Importer & User	Yes	
14	Gambia Groundnut Council	Importer & User	No	
15	Banjuludning Horticultural Garden	User	Yes	
16	M.F.Group	Importer	No	
17	Garden Seeds Technism	Retailer	Yes	
18	National Environment Agency	Controller	Yes	
19	Cotton Development Project	Importer & User	Yes	
20	Bai Bamba Pest Control Services	User	Yes	
21	Yundum Agric. Station	User	Yes	
22	Jenoi Agricultural Station	User	No	
23	Kuntaur Agricultural Station	User	Yes	
24	Basse Agricultural Station	User	No	
25	Sapu Agricultural Station	User	No	
26	Kerewan Agricultural Station	User	Yes	
27	Banjul Seaports	Controller	Yes	
28	Banjul International Airport	Controller	Yes	
29	Soma Customs Post	Controller	Yes	
30	Basse Customs Post	Controller	Yes	
31	Farafenni Customs Post	Controller	Yes	
32	Amdalie Customs Post	Controller	Yes	
33	Jiboroh Customs Post	Controller	Yes	
34	Yams Agricultural Farm	User	Yes	
35	New Choice Shop	Importer & User	Yes	
		Totals Respondents	**26**	

Annex 6: Chemical Imports (Pesticides for Agriculture, Public health and Livestock)

1997-2002

No	Trade Name	Active Ingredient	Quantity	Importers & Remarks
1	Carbosulfan 10% G. (I+ N)	Carbosulfan	17,300 Kgs	1) DOSA 2) G.H.E 3) M.C.P 4) Agro-Vet. 5) Sangol Farms. 6) Premier Agro-Oils
2	Stomp 50% EC (I)	Pendimethalin	3,220 L.	
3	Propoxpur 2% D. (I)	Propoxpur	7,000 Kgs	
4	Elsan 50% EC (I)	Phenthoate	4,200 L.	
5	Benlate 50% WP (F)	Benomyl	1,410 Kgs	
6	Fenithrothine + Fenvalarate 3%D. (I)	Fenithrothine + Fenvalarate	3,900 Kgs	
7	Fenithrothine + Fenvalarate 30% EC (I)	"	1,200 L.	
8	Dursban 4 EC (I)	Chloropyrifos ethyl	4,153 L.	
9	Isoprothiolane 40EC (F)	Isoprothiolane	3,000 L.	
10	Tralomethrin 16% EC (F)	Tralomethrin	200 L.	
11	Malathion 4% D (I)	Malathion	4,500 Kgs	
12	Permethrine 2% D (I)	Permethrine	500 Kgs	
13	Permethrine EC (I)		3,125 L.	Public Health
14	Deltamethrine EC. (I)	Deltamethrine	1,960 L.	Public Health
15	Sumithion D (I)	Fenvalarate	3,000 Kgs	
16	Primex 2.5% D. (I)	Cypermethrine + Malathion	4,900 Kgs	
17	Dursban T.C /EC	Chloropyrifos	2,100 L.	
18	Cabryal WP (I)	Cabryal	14 Kgs	Agro-Vet
19	Triatrix 25% D (I)	Amitraz	20 Kgs	"
20	Triatrix 12.5% EC		510 L.	"
21	Decatrix 5% EC	Cypermethrine	2 L	"

		Totals = Granules-17,300 kg Dust-25,244 Kgs EC-23,670 Litres		

Annex 7: Importation of Fertilisers 1997 - 2002

No	Name	Quantity	Importers
1	N.P.K	55,067 Bags x 50kg/bag = 2,753,350 Kgs	D0SA Sangol Farms
2	Urea	43,369 Bags x 50kg/bag = 2,168,450Kgs	
3	T.S.P	12,865 Bags x 50kg/bag = 643,250 Kgs	
	Totals =	**111, 381 Bags 5,565,050 Kgs**	

Annex 8: Consumer Chemical Imported (Aerosols and Coils) 1997-2002

No	Type of chemical	Quantity	Importers	Remarks
1	BOB Insecticide Spray	182,592 L	T.K. Motors	Imports recorded at the Banjul Seaports
2	Elf Insecticide Spray " " Coils	180, 000 L. 8,125 Cartons	ELF	
3	Yotox Insecticide Spray	24,000 L	K. Chellarams	
4	Baygon Insecticide Spray	116, 400 L	M.F.Group	
5	Super Cox Insecticide Spray	15,450 Cartons	M.F.Group	

6	Spritex Insecticide Spray	81,619 L	Emkau	
7	Ray Insecticide Spray	11, 213 L	LERR	
	Totals =	**595,824 L. 23,575 Cartons**		

Annex 9: Chemical Use (Pesticides for Agriculture, Public health and Livestock)

1999-2002

No	Name & active ingredient	Quantities	Importers	Remarks
1	Primex 2.5% DP. (I) (Cypermethrine + Malathion)	4,900 Kgs	1)Dept. of agricultural services, 2)Dept. of medical & health, 3)National agricultural research institute, 1) Banjuludning Garden.	Agriculture use
2	Sumicombi 50% EC (I) (Fenithrothine)	20 L		" "
3	Sumicombi 2% D (I)	298 Kgs		" "
4	Fenithrothine 2% D (I)	25 Kgs		" "
5	Dursban 4 EC (I) (Chloropyrifos)	17, 009 L		Agriculture & public health use
6	Stomp 50%EC (H) (Pendimethalin)	30 L.		Agriculture use
7	Elsan 50% EC (I) (Phenthoate)	89 L		"
8	Cypermethrine 2%D. (I)	11,350 Kgs		"
9	Spinox CBC, DP (F)	79.6 Kgs		"
10	Granox CBC, DP (F)	75 Kgs		"
11	K-Othrine 2% DP (I) (Deltamethine)	738 Kgs		"
12	Propoxpur 2% D. (I)	2,430 Kgs		"
13	Actellic 2% D. (Primiphos methyl)	1,000 Kgs		"
14	Sumithion 50%EC (I) (Fenithrothine)	99 L.		"
15	Carbosulfan 10 G. (I+N)	80 Kgs		"
16	Decis EC (I) (Deltamethrine)	10 L		"
17	Permethrine EC (I)	28,145 L		Agriculture & public health use
18	Marshall 25% EC (I) (Carbosulfan)	10 L		Agriculture use
19	Dimethoate EC (I)	5 L		" "

20	Cypermethrine EC (I)	5 L		" "
21	Dicofol EC (I)	1 L.		" "
22	Phostoxin gas (Aluminium Phosphide)	3 Tubes		" "
	Totals **EC =45,546.6 Litre** **DUST= 20.852 Kgs** **GAS= 3 Tubes**			

Give meanings of I,F,H

Annex 10: Comparative Analysis of Chemicals used by categories from 1993-96 and

1997 to 2002

Type of Chemicals	Number of Tons Used		Remarks
	1993-1996	**1997-2002**	
1. POPs pesticides	N/A	N/A	
2. Pesticides-agriculture	648	Dust- **20. 852Tons** EC- 45, 546 Litres / **45. 546 Ton** Gas- 3 Tubes	Pesticide for agriculture, public health & livestock are combined. The compared amount is bigger in 1993-1996
3 Pesticides-public health	N/A		
4.Pesticides-Agrovet.	N/A		
5.Pesticides-consumer	23,480 Tons	595,824 Litres / **595.824 Tons** 23,575 Cartons	Consumer pesticides refer to Aerosols and Coils. The compared amount used is bigger in 1993-96
6. Fertiliser	**20, 556 Tons**	**5, 565, 050 Kgs / 5, 565. 05 Tons**	Use is bigger in 1993-96
7.Industrial chemicals used in manufacturing	N/A		
8.Consumer Chemicals	104,709		
9. Chemical waste	N/A	13 tons	Shipped to UK for high temperature incineration in 1999

The Gambia: Administrative Divisions