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**UNITED NATIONS INDUSTRIAL DEVELOPMENT
ORGANIZATION**

**VERIFICATION OF NATIONAL CONSUMPTION TARGETS
OF MULTI-YEAR AGREEMENTS FOR CTC AND TCA IN
NIGERIA, 2005**

**UNIDO PROJECT: MP/NIR/05/003
CONTRACT NUMBER: 16001117**

FINAL REPORT

SUBMITTED

BY

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SEPTEMBER 2006



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ABBREVIATIONS AND ACRONYMS

ARNL	ANILA Resources (Nigeria) Limited
ASYCUDA	Automated System of Customs Data
CBO	Community Based Organization
CFC	Chlorofluorocarbon
CP	Country Programme
CRI	Clean Report of Inspection
CTC	Carbon Tetrachloride (Tetrachloromethane)
DNA	Designated National Authority
EIA	Environmental Impact Assessment
ExCom	Executive Committee of the Multilateral Fund
FEPA	Federal Environmental Protection Agency
FMEEnv	Federal Ministry of Environment
GMP	General Manufacturing Procedure
HFC	Hydrofluorocarbon
HCFC	Hydrochlorofluorocarbon
MEA	Multilateral Environmental Agreement
MCF	Methyl Chloroform (1,1,1-Trichloro Ethane)
MLF	Multilateral Fund for the Montreal Protocol
MP	Montreal Protocol
MPU	Montreal Protocol Unit
MSDS	Material Safety Data Sheet
MT	Metric Tonnes
MYA	Multi-Year Agreement
NAFDAC	National Agency for Food and Drug Administration and Control
NAOCom	National Advisory Ozone Committee
NCS	Nigerian Customs Service
NGN	Nigerian Naira
NGO	Non-Governmental Organization

NOO	National Ozone Office
NOU	National Ozone Unit
NPA	Nigerian Ports Authority
ODP	Ozone Depleting Potential
ODS	Ozone Depleting Substance
OND	Ordinary National Diploma Certificate
OPIAMU	Ozone Projects Implementation and Monitoring Unit
O ₃	Ozone
PIC	Prior Informed Consent
POP	Persistent Organic Pollutant
TCA	1,1,1-Trichloro Ethane (Methyl Chloroform)
TOR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization

EXECUTIVE SUMMARY

In the 1950s, researchers found that a class of man-made chemicals was depleting the ozone Layer. These chemicals include chlorofluorocarbons, Halons, carbon tetrachloride and methyl bromide among others, which are collectively referred to as Ozone Depleting Substances. CFCs are used in refrigeration, foam making and as aerosols; Halons are used in fire fighting; CTC as a cleaning and process agent in industries and methyl bromide for preservation of grains and for soil fumigation.

The Vienna Convention on the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer are Multilateral Environmental Agreements designed to protect the ozone layer through the phase-out of ozone depleting substances which include CFCs, HCFCs, CTC, TCA, Halons, Methyl bromide. These substances are grouped under Annexes I, II, III and IV of the Montreal Protocol. The Vienna Convention and the Montreal Protocol entered into force in 1985 and 1987, respectively. Nigeria acceded to both on 31st October 1988, which came into force on January 1st, 1989 and also ratified the London, Copenhagen and Montreal Amendments to the Protocol on 23rd July 2001. The Beijing Amendments was also ratified by the Nigerian government in 2003.

The United Nations Industrial Development Organization, in agreement with the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol and the Government of Nigeria commissioned ANILA Resources (Nigeria) Limited to execute the contract for the Verification of National Consumption Targets of Multi-Year Agreements for CTC and TCA) in Nigeria for the year 2005.

The verification exercise is aimed at determining the consumption targets of CTC and TCA in Nigeria in 2005 focusing on:

- National Consumption Targets for CTC and TCA in year 2005;
- Government Enforcement Structure for CTC/TCA imports and exports;
- Permitting Procedure for CTC/TCA imports and exports; and

- Importers/Exporters/Distributors/End-Users of CTC and TCA.

The Designated National Authority for the implementation of Montreal Protocol's ODS phase out programme is the Federal Ministry of Environment. Other relevant agencies include the National Agency for Food and Drug Administration and Control and the Nigerian Customs Service.

The Federal Ministry of Environment is the statutory institution responsible for the management of hazardous chemicals in Nigeria and it derives its authority, among others, from the defunct Federal Environmental Protection Agency (FEPA) Act. The Act 58 of 30 December 1988 established the Federal Environmental Protection Agency (FEPA), now subsumed by the Federal Ministry of Environment (FMEnv), as the chief regulatory body for environmental protection in Nigeria. The Decree was amended as Decree No. 59 of 02 August 1992.

ODS Import/Export Licensing System was established by the defunct FEPA in March 1998 under the Agency's "Hazardous Chemical Tracking and Toxic Wastes Dump Watch Programme" which provides that importers and exporters of controlled substances, namely; CFC, HCFC, Halon, CTC, TCA, MCF and methyl bromide are required to obtain a permit from the then FEPA before such could be brought into the country. The system was taken over by FMEnv in 1999 and the NOO empowered to monitor the importation, exportation and transformation of chemicals controlled under the Montreal Protocol.

The FMEnv's ODS Import/Export Licensing system thrived well at inception till the year 1999, when the officials of the Federal Ministry of Environment operating at the ports had to leave the ports following a government directive.

The National Agency for Food and Drug Administration and Control also has legal mandate over the control of chemicals in Nigeria. The agency, established by

Decree No. 15 of 1993 as amended, is a parastatal of the Federal Ministry of Health with the mandate to regulate and control quality standards for Foods, Drugs, Cosmetics, Medical Devices, Chemicals, Detergents and Packaged Water, imported, manufactured locally and distributed in Nigeria. NAFDAC also an existing and operational permitting system for import/export of chemicals including ODS.

The current situation whereby both the Federal Ministry of Environment and NAFDAC have oversight functions for the control of ODS imports should be streamlined. The situation on ground is that both the FMEEnv and NAFDAC issue permits for the import of ODS but the actual enforcement is being carried out by only NAFDAC, by virtue of their presence at the nation's ports. In the ongoing efforts to ensure that there is no duplication of efforts in the issuance of permits, machinery is being put in place to establish a joint committee comprising NOO, NAFDAC and Customs to handle the permitting and enforcement systems.

The Nigerian Customs Service has oversight functions for the control of the importation and exportation of goods in Nigeria, operating at about sixty entry points to the country. NCS is basically an executing body, controlling the importation and exportation of goods on behalf of other Government Ministries and Agencies. The clean report of inspection system which operated till the end of December 2005 has now been replaced updated with destination inspection involving an automated system of customs data which is still in the process of being fully developed.

Information for this audit was gathered through primary data gathering in the field and secondary data sources involving desktop review of information and materials. The documents obtained were verified for correctness, reviewed and analyzed for presentation of our findings. Our sources of data for the verification exercise are:

- The Federal Ministry of Environment;
- The National Agency for Food and Drug Administration and Control;
- The Nigerian Customs Service;

- The CTC and TCA Importers;
- The CTC and TCA Distributors; and
- The CTC and TCA End-Users

The data presented for verification by UNIDO is shown in the Table below.

Provisional CTC and TCA Import Data

ODS		Provisional Data in 2005		Maximum Amount Allowed in 2005	
Substance	ODP	Metric tons	ODP tons	Metric tons	ODP tons
CTC	1.1	0	0	20.8	22.9
TCA	0.1	0	0	230	23.0

This Table shows that the Nigerian government reported a zero importation of CTC and TCA in the year 2005. Our mandate is therefore to verify whether this was the actual consumption data for CTC and TCA in 2005. As Nigeria is neither a producer nor an exporter of CTC and TCA, we therefore estimated consumption by checking records of importation of CTC and TCA into the country in the year 2005 and ascertain whether or not there were loopholes in the importation and exportation processes. The ExCom's guideline was therefore simplified as:

$$\text{consumption} = \text{import}$$

Visits were made to the offices and operational areas of FMEnv, NAFDAC, NCS and NPA as well as some identified Importers, Distributors and End-Users during the three-week field data acquisition exercise with air/road travels to Abuja, Lagos, Port Harcourt, Aba, Warri, Enugu, Ibadan and Calabar. We were provided with all relevant documents by the various authorities.

Essentially, review of the Nigerian government policy controlling CTC/TCA consumption and production and the division of responsibility between FMEnv, NAFDAC and Customs for enforcing the relevant policies were carried out after evaluating related desktop materials. This was followed by the review of the government statistics on ODS imports and exports against the data from the customs and the amount of quota issues against actual quota applied. Furthermore, the list of government authorized importers against the records of the Nigerian Customs was verified with a representative sampling conducted on the records of some of the importers, distributors and end-users against the Customs' records and the quota issued by FMEnv.

The results of our data verification and analysis show that:

- No CTC/TCA import permit was issued to the licensed importers in 2005;
- Neither CTC nor TCA was imported into Nigeria in 2005;
- CTC and TCA were not exported out of the country in 2005;
- Nigeria does not produce CTC and TCA;
- FMEnv, NAFDAC, NCS and Importers records showed zero importation of CTC and TCA in 2005;
- NOO of the FMEnv performed above the projected CTC and TCA phase out target in 2005;
- Consumption of CTC and TCA in Nigeria were both zero in 2005.

There have been series of consultative meetings between FMEnv, NAFDAC and Customs, which has led to more effective collaboration and better cooperation in the implementation of the permit system for CTC and TCA. The draft Ozone Act has moved a step forward in the approval process as it has been placed before the Federal Ministry of Justice for review and redrafting. The Nigerian Customs are now fully involved in the ODS phase out activities of the Federal Ministry of Environment. An officer has been designated as the ODS phase out schedule officer in the Nigerian Customs. The ODS substitutes are now becoming more

available in the Nigerian markets. The Federal Ministry of Environment has continued its role as the national authority determining the country's compliance with the Montreal Protocol.

Our recommendations are:

- The provisional data for CTC and TCA consumption in Nigeria in 2005 should be adopted as the actual consumption for 2005 by UNIDO;
- ODS import/export control should be exclusively handled by the Federal Ministry of Environment;
- Designated officers of the Nigerian Customs should be properly trained and be up to date in ODS issues;
- The Nigerian government ban on the importation of ODS-based equipment and appliances should be sustained;
- Ongoing efforts by the FMEnv to make the licensing system more effective should be sustained and continued;
- The momentum in the implementation of the Montreal Protocol phase out programme should be maintained;
- The production of the ODS substitutes and their importation into Nigeria should be geared up;
- Workshops and seminars should be organized for dissemination of information on ODS;
- Trained FMEnv officials should be present at all the entry points to the country;
- NAFDAC's authorities should be restricted to issuance of license for consumable and pharmaceutical chemicals only
- CTC and TCA verification should be properly timed to ensure adequate coverage;
- The Nigerian government should be encouraged to offer import concessions and tax incentives to CTC and TCA alternatives;

CHAPTER ONE

INTRODUCTION

1.1 Background

Ozone (O₃) is a molecule made up of three oxygen atoms. Through natural processes in the atmosphere, ozone molecules are created and destroyed on a continuous basis. Ultraviolet radiation from the sun breaks up oxygen molecules into atoms, which then combine with other oxygen molecules to form ozone. Ozone is quite unstable and could easily be destroyed by natural compounds containing nitrogen, hydrogen and chlorine. In the troposphere, ozone is a pollutant while in the stratosphere it is a life-giving gas. Life on earth is sustained by the existence of a thin layer of ozone in the stratosphere. This is known as the Ozone Layer, which is about forty-five kilometers above the surface of the earth. The ozone layer sustains life on earth by filtering from the earth, dangerous ultra violet rays from the sun.

Excessive ultra violet rays passing through to the earth can cause skin cancer, cataract, eye blindness, retard the growth of vegetation thereby leading to food shortage/famine, destroy small micro-organisms in the sea that fish feed on which can lead to shortage of seafood and also lead to suppression of the human immune system.

In the 1950s, researchers found that a class of man-made chemicals was depleting the ozone Layer. These chemicals include chlorofluorocarbons (CFCs), Halons, carbon tetrachloride (CTC) and methyl bromide among others, which are collectively referred to as Ozone Depleting Substances (ODS). CFCs are used in refrigeration, foam making and as aerosols; Halons are used in fire fighting; CTC as a cleaning and process agent in industries and methyl bromide for preservation of grains and for soil fumigation.

Recognizing the danger posed by the continued depletion of the ozone layer, countries of the world got together in 1985 to sign "the Vienna Convention for the

Protection of the Ozone Layer". The main thrust of this convention is co-operation between nations for scientific research and observation to help understand more atmospheric processes. The convention provided for future protocols. In 1987, the "Montreal Protocol on Substances that Deplete the Ozone Layer" was signed as a binding instrument on the parties to phase-out the use of ozone depleting substances (ODS) in their respective countries. The protocol initially stipulated a 50% reduction in the production and consumption of specific CFCs by the year 1999 and a freeze on the consumption of Halons. Article 5 (developing) countries were given a grace period of 10 years.

1.2 The Montreal Protocol

The Vienna Convention on the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer are Multilateral Environmental Agreements (MEAs) designed to protect the ozone layer through the phase-out of ozone depleting substances which include CFCs, HCFCs, CTC, TCA, Halons, Methyl bromide. These substances are grouped under Annexes I, II, III and IV of the Montreal Protocol. The Vienna Convention and the Montreal Protocol entered into force in 1985 and 1987, respectively.

In the light of new scientific findings, the Montreal Protocol was amended in London in 1990, in Copenhagen in 1992 and in Montreal in 1997. In the London amendments, five CFCs and three Halons initially included in the Protocol were to be phased out by year 2000 while other CFCs, carbon tetrachloride (CTC) and methyl chloroform (MCF) were placed under control. Hydrochlorofluorocarbons (HCFCs), which were the initial substitutes for CFCs, were also placed under control in a separate annex as transitional substances. The London Amendment also set up an interim financial mechanism (Multilateral Fund of the Montreal Protocol) to address the special needs of the Developing Countries (Article 5 Countries) under the Protocol. The Executive Committee (ExCom) of the Protocol was set up to manage the disbursement of this Fund. Provision was also made for transfer of technology to the developing world. Nigeria played a pivotal role in the negotiation of the Protocol and co-sponsored the motion for the establishment of

the Multilateral Fund for the implementation of the Montreal Protocol to take care of the special needs of the developing countries. By definition, developing countries are countries whose per capita ODS consumption is less than 0.3 kg. Other parties (developed countries) are categorized as Article 2 parties.

The Copenhagen Amendments imposed stricter control measures. CFCs, CTC and Methyl Chloroform (MCF) were to be phased out in 1996, Halons in 1994, HCFCs in 2030 and a freeze placed on Methyl Bromide in 1995. The Multilateral Fund was also confirmed with its implementing Agencies as UNEP, UNDP, UNIDO and the World Bank.

The Montreal Amendments placed a ban on trade in ODS between Parties to the Montreal Protocol and countries that are not party to the Protocol. In addition, countries are expected to establish and implement a system for licensing the import and export of ODS between Parties to the Protocol. As at August 2001, 181 countries had ratified the Montreal Protocol, which sets out the time schedule to "freeze" and reduce consumption of ozone depleting substances (ODS). In the industrialized countries (non-Article 5 Parties), Halon consumption has been eliminated as of January 1994 and CFC consumption as of 1st January 1996, except for essential uses. They have additional phase out schedule for other ODS chemicals. Developing countries (Article 5 Parties) have agreed to freeze most CFC consumption as of July 1999 based on 1995–97 averages, to reduce this consumption by 50% in January 2005 and to fully eliminate the CFCs on 1st January 2010.

Nigeria, an Article 5 country, acceded to both the Convention and the Protocol on 31 October 1988, which came into force on 01 January 1989 and then ratified the London, Copenhagen and Montreal Amendments to the Protocol on 23rd July, 2001. The Beijing Amendment was ratified by the Nigerian Government in 2003. Mandatory structures for the implementation of the Protocol in Nigeria were set up and include the preparation of the Country Programme for the phase out of Ozone Depleting Substances (ODS), setting up of the National Ozone Office (NOO) and

the National Advisory Ozone Committee (NAOCom). As a party to the Montreal Protocol, Nigeria is entitled to both financial and technical assistance to phase-out the use of ODS.

Since 1999, multi-year agreements have become a predominant funding modality of the Multilateral Fund to assist Article 5 countries in achieving the ODS phase out targets under the Montreal Protocol. Under these agreements, the responsible implementing agencies are required to submit a verification report on the achievement of the ODS reduction targets specified in the agreements as a prerequisite for the release of the next tranche of funds. In light of this, the United Nations Industrial Development Organization (UNIDO), in agreement with the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol and the Government of Nigeria commissioned ANILA Resources (Nigeria) Limited to execute the contract for the Verification of National Consumption Targets of Multi-Year Agreements for carbon tetrachloride (CTC) and 1,1,1-trichloroethane (TCA) in Nigeria for the year 2005. This report is therefore the outcome of our verification exercise.

1.3 Aims and Objectives of the Verification Exercise

The main objective of this audit study is to verify national consumption targets for CTC and TCA in Nigeria for the year 2005. This is intended to cover all aspects of national legislation, policies and procedures designed to ensure achievement of the consumption targets in the multi-year agreement and also provide detailed data demonstrating and confirming that the consumption target was achieved in 2005. The verification exercise is aimed at determining the consumption targets of CTC/TCA in Nigeria in 2005 focusing on:

- National Consumption Targets for CTC and TCA in year 2005;
- Government Enforcement Structure for CTC/TCA imports and exports;
- Permitting Procedure for CTC/TCA imports and exports; and
- Importers/Exporters/Distributors/End-Users of CTC and TCA.

1.4 Scope of Work

The services to be delivered in order to achieve the aims and objectives of this verification exercise include:

- Review of government policy controlling CTC/TCA consumption and production as well as the division of responsibility between national institutions, that is, the Federal Ministry of Environment (FMEnv), National Agency for Food and Drug Administration and Control (NAFDAC), Nigerian Customs Service (NCS), Nigerian Ports Authority (NPA) and others for enforcing the relevant policies;
- Review of government statistics on CTC/TCA imports and exports against the data from the customs and the amount of quota issues against actual quota applied;
- Review of the list of government authorized importers and exporters against the records of the customs with a representative sampling conducted on the records of importers/exporters against the customs records and the quota issued;
- Review of the plan of action proposed by the government to implement the recommendations from the auditors provided in the 2004 report;
- Discussion of inferences on the achievement of the annual CTC/TCA reduction target as well as recommendations for improving performance; and
- Production of verification report to be submitted to UNIDO in Vienna.

1.5 Terms of Reference for the Verification Exercise

The Terms of Reference together with the Guidelines that emanated from UNIDO for this audit exercise is presented as Appendix 1.1. Extracts of the coverage of this study are as follows:

- Nigerian government policies for controlling ODS stating nature of the legislation, date of enactment and scope of coverage;
- Institutional enforcement structure for the policies and Montreal Protocol implementation of ODS import control through FMEnv/NAFDAC permitting systems and the responsibility of the Nigerian Customs;
- CTC and TCA importers authorized by the Nigerian government;

- CTC and TCA distributors authorized by the government;
- Government statistics of imports of CTC and TCA in year 2005;
- CTC and TCA import quota issued in 2005;
- CTC and TCA import quota used in 2005; and
- Actual imports of CTC and TCA by the authorized importers.

Imports and exports for CTC and TCA in Nigeria in 2005 will therefore be verified by reviewing:

- National legislation, policies and procedures on CTC and TCA imports/exports;
- Official statistics on imports/exports by comparing quotas issued versus actual quotas used with a representative sample of reports from importers/exporters as well as distributors;
- Government follow-up on the recommendations from the 2004 verification.

The following pertinent issues will also be addressed and assessed during the course of the verification exercise:

- Extent of knowledge of ODS issues in the Nigerian Customs organization; and
- Systems put in place to control potential illegal imports of ODS and potential unofficial imports not going through regulated channel.

1.6 Guidelines for Verification of National Consumption Targets

The Executive Committee of the Multilateral Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer approved the following guidelines for carrying out verification of national consumption targets of multi-year agreements (MYAs) in order to achieve consistency and uniformity in methodology, bearing in mind the specific reporting requirements in each of these agreements.

The guidelines are intended for the verification of national consumption targets of multi-year agreements for CFCs, Halons, CTC, TCA and methyl bromide. They do not apply to ODS production sector phase out agreements which are governed by

guidelines approved by the Executive Committee in the year 2000.

Since the MYAs define the achievement targets in annual national maximum allowable consumption of an ODS, the verification of the national consumption targets for CTC and TCA utilizes the following Montreal Protocol definition of consumption:

$$\text{consumption} = \text{production} + \text{imports} - \text{exports}$$

Consumption for Nigeria, an Article 5 country which does not produce CTC/TCA, is therefore defined as imports minus exports. Hence, the formula is simplified to:

$$\text{consumption} = \text{imports} - \text{exports}$$

However, for countries producing CTC and TCA, consumption includes verification of production following guidelines approved at the ExCom's thirty-second meeting.

1.7 Structure of this Report

Chapter one of this report is an introduction to the verification work providing background information on the Vienna Convention and the Montreal Protocol, objectives, scope of work and guidelines for evaluating consumption of CTC and TCA. Chapter two presents the national legislation, policy and administrative framework for ODS. Chapter three is devoted to the methodology employed in gathering data for the study. Chapter four discusses the results of the data analysis/information obtained from the field, conclusions and recommendation including general remarks.

Acknowledgement, table of contents, abbreviations/acronyms and executive summary are presented before chapter one while the Appendices of this report are contained after chapter four.

CHAPTER TWO

NATIONAL LEGISLATION, POLICY AND ADMINISTRATIVE FRAMEWORK

2.1 Nigerian Policy and Regulatory Institutions on ODS

The Designated National Authority (DNA) for the implementation of Montreal Protocol's ODS phase out programme is the Federal Ministry of Environment (FMEnv). Other relevant agencies include the National Agency for Food and Drug Administration and Control (NAFDAC) and the Nigerian Customs Service (NCS).

2.2 Federal Ministry of Environment

The Federal Ministry of Environment is the statutory institution responsible for the management of hazardous chemicals in Nigeria and it derives its authority, among others, from the defunct Federal Environmental Protection Agency (FEPA) Act. The Act 58 of 30 December 1988 established the Federal Environmental Protection Agency (FEPA), now subsumed by the Federal Ministry of Environment (FMEnv), as the chief regulatory body for environmental protection in Nigeria. The Decree was amended as Decree No. 59 of 02 August 1992.

Most of the Nigerian national laws on environment are derived from international environmental laws. The Vienna Convention and the Montreal Protocol are actually environmental protection instruments geared towards the phase out of ozone depleting substances. FMEnv has oversight functions over the implementation of the Montreal Protocol as the FEPA Act had earlier put in place some legal instruments that have relevance to the protection of Ozone Layer and control of Ozone Depleting Substances (ODS).

In 1989, the "National Policy on Environment" was formulated which has the overall goal of achieving sustainable development in the country.

In 1991, the "Guidelines and Standards for Environmental Pollution Control in Nigeria" was published. Most of the controlled substances which includes CFCs, HCFCs and other ODS that are listed in the "Acutely Hazardous (Dangerous)

Chemical Product List" can only be imported into the country or produced locally after clearance with FEPA (now FMEnv) and other relevant agencies. FMEnv may exclude from these lists any categories or items, which it determines do not represent potential hazards to human health or the environment when properly treated, stored, transported, disposed of, or otherwise managed. Other chemicals could be added to these lists based on new knowledge. These exclusive lists form the basis of FMEnv's tracking programme to monitor and control the management of these substances from "cradle to grave". For new chemicals to be added to the list, FMEnv has to review the list. However, with the ODS Control Act already submitted to the government for approval and the follow up activity of developing ODS regulations; CTC and TCA are already included in the regulations.

In 1999, just before the creation of the Federal Ministry of Environment, the National Policy on Environment was revised. Under the Section on Cross-Sectoral Issues: Toxic Hazardous and Radioactive Substances Management, the revised policy states, "necessary administrative rules and legislation will be operated to govern the monitoring, introduction, manufacture, import, sales, transportation, use and disposal of toxic, hazardous and radioactive substances in Nigeria. Toxic, hazardous and radioactive substances include all categories of potentially toxic or hazardous industrial chemicals, pesticides, ODS and toxic/radioactive wastes.

Highlights of the policy and regulatory instruments of the Federal Ministry of Environment guiding consumption and use of ODS in Nigeria are presented below.

FEPA Act No. 58 of 1988

Act No. 58 of 1988 established the Federal Environment Protection Agency with the overall responsibility of protecting the Nigerian environment. Through this Decree, FEPA was empowered, amongst others, to make recommendations, develop and carry out programmes for the control of any substance, practice, process or activity which may reasonably be anticipated to affect the stratosphere, especially ozone in the stratosphere. The agency was subsumed by FMEnv and continued with the associated responsibilities and functions.

National Effluent Limitation Regulation

The National Effluent Limitation Regulation, S.1.8 of 1991 (No. 42, Vol. 78, August, 1991) makes it mandatory for industries, with waste generating facilities, to install anti-pollution and pollution abatement equipment on site. The regulation is specific for each category of waste generating facility with respect to limitations of solid and liquid discharges or gaseous emissions into the environment. Appropriate penalties for contravention are also prescribed.

Pollution Abatement in Industries Generating Wastes Regulation

The Pollution Abatement Regulation, S.1.9 of 1991 (No. 42, Vol. 78, August 1991) imposes restrictions on the release of toxic substances and stipulates requirements for pollution monitoring units, machinery for combating pollution and contingency plan by industries; submission of lists and details of chemicals used by industries to FMEnv; requirement of permit by industries for storage and transportation of harmful or toxic waste; the generator's liability; strategies for waste reduction; permissible limit of discharge into public drains; protection of workers and safety requirements; environmental audit (or environmental impact assessment for new industries) and penalty for contravention.

Management of Hazardous and Solid Wastes Regulation

The Management of Hazardous and Solid Waste Regulation, S.1.15 of 1991 (No. 102, Vol. 78, August 1991) defines the requirements for groundwater protection, surface impoundment, land treatment, waste piles, landfills, incinerators etc. It also describes the hazardous substances ranking programme with a comprehensive list of acutely hazardous chemical products and dangerous waste constituent. It also states the requirements and procedure for inspection, enforcement and penalty.

Environmental Impact Assessment (EIA) Decree 56 of 1992

The EIA decree and its related procedural guidelines makes it mandatory for all categories of developmental projects that have the likelihood of impacting on the environment to undertake EIA study and obtain an Environmental Impact Statement from FMEnv prior to the commencement of such development project.

National Policy on Environment (1989)

There is a National Policy on Environment which was formulated in 1989. The Policy, with the overall goal of achieving sustainable development has the following objectives;

- Securing for all Nigerians a quality of environment adequate to their health and well-being;
- Conserving and using the natural resources for the benefit of present and future generations;
- Restoring, maintaining and enhancing the ecosystem and ecological processes essential for the preservation of biological diversity;
- Raising public awareness and promoting understanding of the essential linkages between environment and development; and
- Cooperating with other countries and international organizations/agencies in order to achieve the above objectives.

ODS Control Act (2003)

A draft Act to control the import, export and use of ODS has been prepared and is in the process of becoming Law. The draft Act has been reviewed at two stakeholders' workshops. The first workshop involved private sector practitioners (importers, wholesalers, retailers and ODS users including corporate users such as the oil companies) while the second workshop involved representatives of government institutions such as the Nigerian Customs Service, members of the National Assembly, Academia and the Nigerian Bar Association, amongst others. The final draft has been forwarded to the Federal Executive Council for consideration and submission to the National Assembly for subsequent passage into law. The objectives of the Act are to:

- Protect the ozone layer from depletion so as to avoid the adverse environmental consequences and danger to health;
- Provide a system of data collection that will facilitate compliance with the relevant reporting requirements under the protocol;
- Promote the use of ozone friendly substances, products, equipment and technology;

- Meet the deadline set for the phase out or elimination for ozone depleting substances in Nigeria in accordance with the phase out schedule of the Montreal Protocol;
- Regulate the production, trade and use of ozone depleting substances or product that contain or depend on ozone depleting substances for their functioning

The National Ozone Office has developed a set of specific regulations for the various sectors, namely: Solvents, Refrigeration, Foam, Halon, Methyl bromide and Aerosols in order to implement the Act by the time it becomes Law. Actually, the draft Act has been passed to the Federal Ministry of Justice for review and redrafting. It is envisaged that the issue of the adoption of the Ozone Act by the Nigerian will be a thing of the past within the next few months.

2.2.1 FMEEnv's Enforcement System for ODS Control

The Federal Ministry of Environment is the lead organization for the implementation of the National Policy on Environment and enforcement of all environmental regulations. The Ministry has four zonal and six field offices through which it carries out its activities across the country. The National Ozone Office in the Department of Pollution Control of FMEEnv implements the ODS-Phase out programme. There is also a National Ozone Advisory Committee (NAOCom) which has the Minister for Environment as Chairman with membership drawn from the public and private sectors, academia, non-governmental organizations (NGOs) and community-based organizations (CBOs). The National Ozone Advisory Committee advises the National Ozone Office on ozone matters. Although there is presently no specific legislation for the solvent sector, ODS phase out and Montreal Protocol implementation activities are governed by existing regulatory framework and instruments that have been presented above.

FMEEnv has an existing Permitting and Licensing System to control the importation of ODS and other substances that are listed in other chemicals-related Multilateral Environmental Agreements (MEAs) such as the Stockholm Convention on

Persistent Organic Pollutants (POPs), Basel Convention on Transboundary Movement of Hazardous Wastes and Toxic substances and the Rotterdam Convention on Prior Informed Consent (PIC) procedure. Until 1999, when the FMEnv officials were withdrawn from the nation's seaports in response to government directive, trained scientists of the Federal Ministry of Environment were stationed at the ports to physically inspect consignments for controlled chemicals and substances. Through this mechanism, transboundary movement and illegal trafficking of controlled chemicals were effectively monitored.

The importation of used refrigerators, air-conditioners and compressors has already been banned in Nigeria through a circular issued by the Minister of Finance and dated July 19, 2001. Also a ban has been placed on importation of cars older than eight years. Both of these have direct bearing on the implementation of the Montreal Protocol in Nigeria since these have direct impact on the use of ODS.

With the progress being made in the process of enacting an ODS Legislation, action has also commenced and a memorandum has been prepared and presented to government to approve the return of the Federal Ministry of Environment officials to the Nigerian Ports. This is intended to make the implementation of the ODS legislation more effective. Some of the key provisions in the draft Act, to be implemented by the National Ozone Office include;

- Restriction on trade in ozone depleting substances;
- Prohibition of import of refrigerators, air conditioners, etc with CFC;
- Prohibition of the Importation, refill and use of fire extinguishers with Halon;
- Prohibition of imports of controlled substances after a certain date;
- Prohibition of CFC-11 and CFC-12 as blowing agent and refrigerant;
- Prohibition of CFC and TCA solvents;
- Forfeiture of imported or exported substances and products;
- Application for permits and issuance;
- Provision of storage facility and disposal of controlled substances;
- Prohibition of venting of controlled substances

FME_{env} working in collaboration with other appropriate governmental agencies shall therefore:

- Maintain an up-to-date register of toxic, hazardous and radioactive substances;
- Determine the categories of toxic, hazardous and radioactive chemicals, pesticides and ODS to be allowed into or banned from Nigeria in line with internationally binding instruments to which Nigeria is party;
- Control the generation/production of toxic, hazardous and radioactive chemicals and wastes and ensure that banned chemicals shall be stringently controlled;
- Determine, monitor, control and update the list of green wastes (recyclable wastes) for economic purposes;
- Establish a permitting and sanction system for the importation of toxic and hazardous chemicals and green wastes;
- Monitor the effects of and control all phases of the life-cycle of all substances likely to have an adverse impact on human health and environment;
- Set up appropriate handling, transportation and storage codes for toxic, hazardous chemicals and green wastes;
- Minimize the generation of toxic hazardous wastes through the adoption of clean technologies;
- Determine and use environmentally safe and technologically sound techniques for disposal of toxic, hazardous and radioactive chemicals and wastes;
- Develop and implement guidelines for the sound management of toxic, hazardous and radioactive substances;
- Set up regional framework and standards for "dump watch" against transboundary movement of toxic, hazardous and radioactive wastes and for the achievement of the environmentally sound management of hazardous substances;

- Adopt appropriate mix of the above permitting, monitoring and control strategies of toxic, hazardous and radioactive substances for the enforcement of industrial compliance with pollution control standards; and
- Establish legal and other mechanisms for the environmentally sound management of accidental release of toxic, hazardous and radioactive substances.”

NOO will, in addition, monitor implementation and control measures such as:

- Ban on new installations and equipment using ODS.
- Monitor imports of ODS to ensure freeze and phase-out conditions are being met.
- Implement and enforce reducing quotas.
- Study the possibility of import concessions and tax incentives to promote use of substitutes and alternative technologies.

2.2.2 FMEEnv's Import/Export Licensing System

In order to “control the export and import of products and equipment containing ODS”, the Parties to the Montreal Protocol, at its seventh meeting held in December 1995, recommended under decision VII/32, that Parties should adopt legislative and administrative measures to regulate the import and export of ODS containing equipment. Also in 1997, the Montreal amendment to the Protocol, placed a ban on trade in ODS between Parties to the Protocol and Non-Parties. The same amendment directed that all Parties should establish and implement a system for licensing the import and export of ODS between Parties to the Protocol.

ODS Import/Export Licensing System was therefore established by FEPA in March 1998 under the Agency's “Hazardous Chemical Tracking and Toxic Wastes Dump Watch Programme” which provides that importers and exporters of controlled substances, namely; CFC, HCFC, Halon, CTC, TCA and methyl bromide are required to obtain a permit from the then FEPA before such could be brought into the country. The system was taken over by FMEEnv in 1999 and the NOO empowered to monitor the importation, exportation and transformation of chemicals

controlled under the Montreal Protocol. It was also to assist in the collection of relevant information to facilitate Nigeria's compliance with the annual reporting requirement stipulated under Article 7 of the Montreal Protocol. The system also requires that all ODS-using industrial enterprises submit a report on ODS consumption on an annual basis.

The procedure involved in the system when FMENV was operating at the nation's port is as follows with the stepwise schematic diagram shown in Appendix 2.1:

- Importers/exporters obtain, fill and submit application form to FMEnv;
- Inspection of warehouse by FMEnv;
- Processing of application;
- Issuance of permit;
- Importation by importer;
- Inspection at the port of entry by both NCS and FMEnv officials;
- Release of chemical from port; and
- Submission of report by importer to FMEnv.

The FMEnv's ODS Import/Export Licensing system thrived well at inception till the year 1999, when the officials of the Federal Ministry of Environment operating at the ports had to leave the ports following a government directive.

2.3 National Agency for Food and Drug Administration and Control

The National Agency for Food and Drug Administration and Control (NAFDAC) also has legal mandate over the control of chemicals in Nigeria. The agency, established by Decree No. 15 of 1993 as amended, is a parastatal of the Federal Ministry of Health with the mandate to regulate and control quality standards for Foods, Drugs, Cosmetics, Medical Devices, Chemicals, Detergents and Packaged Water, imported, manufactured locally and distributed in Nigeria. NAFDAC has legal mandate over the control of importation of many industrial chemicals.

2.3.1 NAFDAC's Enforcement Activities for Chemicals Control

In order to achieve this mandate for which it was established, NAFDAC embarks on various activities including:

- Inspection of Facilities of manufacturers of such products in Nigeria and abroad to ascertain their current GMP status;
- Laboratory evaluation of these regulated products;
- Registration;
- Drafting regulations that guide the manufacture, importation, advertisement, distribution, sale and the use of regulated products;
- Enforcement of the regulations and laws; and
- Inspection of regulated products at ports of entry and land borders.

Available records have so far shown that NAFDAC has been performing creditably well in this regard through the following directorates of the agency:

- Administration and Finance;
- Establishment and Inspectorate;
- Ports Inspectorate;
- Enforcement;
- Laboratory Services;
- Registration and Regulatory Affairs;
- Narcotics and Controlled Substances; and
- Planning, Research and Statistics.

2.3.2 NAFDAC's Chemicals Import Permitting System

The procedure involved in the system is as follows:

- Importers submit letter of application to NAFDAC which will state chemicals to be imported and quantity and is to be submitted with the Company registration document, Tax clearance Certificate, Evidence of engagement of a technical officer with at least OND in any of the sciences, Form CO7 showing the Directors of the Company, Material and Safety data sheet (MSDS) from the chemical supplier and an electronic diskette copy of the

types and quantities of chemicals for which application is being made, prepared in Excel.

- Inspection of warehouse by the staff of NAFDAC along with the requesting company's Technical Officer;
- Payment of required fees;
- Processing of application;
- Issuance of permit;
- Importation by importer;
- First stamping which takes place with the presentation of the certificate of Analysis of Chemicals from the supplier to NAFDAC;
- Verification of chemicals by NAFDAC;
- Second stamping by NAFDAC which comes with the payment of required fees; and
- Release of chemicals from port.

This is schematically depicted in Appendix 2.2.

2.4 The Nigerian Customs Service

The Nigerian Customs Service (NCS) has oversight functions for the control of the importation and exportation of goods in Nigeria, operating at about sixty entry points to the country. NCS is basically an executing body, controlling the importation and exportation of goods on behalf of other Government Ministries and Agencies. The chemicals listed in the Montreal Protocol are currently controlled in Nigeria under Chapter 29 of the "Customs, Excise Tariff, etc. (Consolidation) of 1988".

The Nigerian Customs Service does not have a national system of harmonized custom codes for identification of ODS and ODS mixtures. It operates the International H. S. Codes system of only six digits. Plans have been concluded to extend the system to ten digits which would enable substances listed in the Montreal Protocol to be precisely identified.

Extremely hazardous chemicals require that permits be obtained before import and

after import, 100% inspected and clearance obtained to remove them from the port. Implementation of the system has been difficult since Customs has difficulty in identifying the chemicals in question. Regular training of Customs personnel would go a long way in making the permit system implementable for ODS.

The clean report of inspection (CRI) system which operated till the end of December 2005 has now been replaced with destination inspection involving an automated system of customs data (ASYCUDA) which is still in the process of being fully developed.

CHAPTER THREE

MATERIALS AND METHODS OF VERIFICATION

3.1 Audit Process

Based on the objectives of the study, the terms of reference and the prevailing situation in Nigeria, information for this verification study was gathered through primary data gathering in the field and secondary data sources involving desktop review of information and materials. The documents obtained were verified for correctness, reviewed and analyzed for presentation of our findings. The simplified diagram of the verification study is presented in Appendix 3.1.

3.2 Materials

National legislation, policies and procedures on CTC and TCA imports/exports were reviewed by the study team. Some of the issues include, but not limited to:

- Channel of communication between government licensing authorities (FMEnv and NAFDAC) and Nigerian Customs;
- Authorized list of importers, exporters and distributors;
- Conditions of issuing licenses;
- Administrative procedures and documentation;
- System of monitoring and reporting on exports of CTC/TCA;
- Sanctions or penalties to be imposed on violation of legal regulation;
- Mechanisms and capacity for prosecution and enforcement;
- National system of harmonized custom codes in order to identify CTC/TCA;
- Procedures to be applied in case of suspicious shipments;

The following materials and information were obtained from government agencies and used for the verification:

- List of authorized importers/exporters and distributors;
- CTC/TCA imports quotas and exports license issued;
- Actual CTC/TCA imports and exports;
- National policies and procedures on CTC/TCA imports and exports;

- Government enforcement structure for CTC/TCA imports and exports; and
- Documents such as licenses, trade names, code numbers and labeling which are presented to customs by importers and exporters of CTC/TCA.

3.3 Sources of Data

The sources of data for verification of CTC/TCA consumption are:

- The Federal Ministry of Environment;
- The National Agency for Food and Drug Administration and Control;
- The Nigerian Customs Service;
- The ODS Importers;
- The ODS Distributors; and
- The ODS End-Users

3.4 Field Survey

The audit implementation schedule presented in Appendix 3.2 was applied in the execution of the services required for this verification exercise. Highlights of the schedule are visits to the offices and operational areas of FMEnv, NAFDAC, NCS and NPA as well as some identified Importers, Distributors and End-Users during the three-week field data acquisition and verification audit exercise with air/road travels to Abuja, Lagos, Port Harcourt, Enugu, Aba, Warri, Calabar. The Seme border with the Republic of Benin, Ikom border post with the Republic of Cameroun and Maradi border with the Niger Republic were also visited by our personnel.

We were provided with all relevant documents by the Federal Ministry of Environment officials in the NOO office in Abuja as well as the FMEnv zonal office in Lagos, Port Harcourt and Warri. NAFDAC was also responsive in the production of requested materials but some difficulties were experienced at the Customs probably due to the administrative structure of the organization.

3.5 Verification Procedure

Essentially, review of the Nigerian government policy controlling CTC/TCA consumption and production and the division of responsibility between FMEnv, NAFDAC and Customs for enforcing the relevant policies was carried out after evaluating related desktop materials. This was followed by the review of the government statistics on ODS imports and exports against the data from the customs and the amount of quota issued against actual quota applied. Furthermore, the list of government authorized importers against the records of the Nigerian Customs was verified with a representative sampling conducted on the records of the importers/distributors against the Customs records and the quota issued by FMEnv. Achievement of the annual CTC/TCA reduction target of the NOO was verified and recommendations for improving performance suggested.

3.6 Provisional National Consumption Data for CTC and TCA in 2005

The data for verification as presented in the TOR is shown in Table 3.1 below.

Table 3.1: Provisional CTC and TCA Import Data for Verification

ODS		Provisional Data in 2005		Maximum Amount Allowed in 2005	
Substance	ODP	Metric tons	ODP tons	Metric tons	ODP tons
CTC	1.1	0	0	20.8	22.9
TCA	0.1	0	0	230	23.0

This table shows that the government, through the National Ozone Office of the Federal Ministry of Environment overseeing the implementation of the Montreal Protocol's solvent phase out plan, reported a provisional figure of zero importation of CTC and TCA in the year 2005. Our mandate is therefore to verify the figure through auditing the various documents to be sourced from the appropriate government and private institutions.

Nigeria is neither a producer nor an exporter of CTC and TCA. Therefore, the ExCom's guideline on the determination of the national consumption of the MYAs for CTC and TCA in Nigeria is simply reduced to the amount of CTC and TCA imported into Nigeria in 2005. This means that:

$$\text{consumption} = \text{import}$$

(since production and export are both zero).

We, therefore, estimated consumption by checking records of importation of CTC and TCA into the country in the year 2005 and ascertain whether or not there were loopholes in the importation and exportation processes.

CHAPTER FOUR

VERIFICATION RESULTS, DISCUSSION AND RECOMMENDATIONS

4.1 Results

The list of recognized CTC/TCA importers/exporters/distributors, the CTC/TCA imports and export quota issued, the actual CTC/TCA imports and exports and the imports and exports by the authorized importers and exporters obtained during the period of this verification exercise are presented below.

4.1.1 Importers of CTC and TCA

The list of the ODS importers and distributors recognized by the Federal Ministry of Environment is presented in Appendices 4.1 and 4.2 respectively, showing their current operational addresses. None of the importers was given any permit to import CTC and TCA in 2005 and as a result, there was no record to show that either CTC or TCA was imported through the Nigerian Customs borders in 2005. Available records and evidence have not shown any importation outside of the regulated channel through illegal imports. Nigeria does not produce any CTC/TCA and the imported ones that were brought in before year 2005 were not exported to any other country that is either a Party or Non-Party to the Montreal Protocol.

Visits to some of these importers and distributors revealed that no CTC or TCA was imported by them into Nigeria in 2005. The quantities that they had, which was receiving low patronage from the distributors and end-users, were those that were brought into the country before 2005. In order to confirm further, some end-users were contacted for their records of purchase of CTC and TCA from the recognized importers and distributors. We found out that the implementation of the solvent phase-out project has enabled some of the enterprises to convert to the use of substitutes. In addition, we were made to understand that CTC and TCA are more expensive and difficult to come by. We gathered that the prices for delivery of CTC and TCA which were about one thousand two hundred naira (₦1,400) and one thousand naira (₦1,000) per kilogramme respectively in 2004 have risen to about two thousand naira (₦2,000) and one thousand five hundred naira (₦1,500),

respectively for CTC and TCA in 2005. These prices have even risen up in 2006 as shown in Table 4.1 below.

Table 4.1: Delivery Prices of CTC and TCA in 2004, 2005 and 2006

ODS	2004 (NGN)	2005 (NGN)	2006 (NGN)
CTC	1,400	2,000	2,200
TCA	1,000	1,500	1,600

It is clear that even though the demand for ODS is decreasing, the price is still increasing despite the fact that none was imported into the country in 2005.

Some completed and ongoing projects at Ibadan, Aba, Lagos, Enugu, Abuja were also visited during this exercise. From our interaction with them, we observed that some of these ODS have been completely phased out and replaced by the ozone friendly substitutes. Actually, some enterprises in the solvent sector have phased out completely.

Furthermore, the importers confirmed that after the 2004 imports no permit was issued to them as it was the feeling that the existing stock would take care of the demand for these phased out substances. They also confirmed to us that the demand for them has reduced drastically and therefore, no need for them to request for permit to import more of CTC and TCA. Since the ozone friendly substitutes like silicon oil, kerosene, trichloroethylene, dichloroethylene, percione, ultrasonic equipment, etc. are now made available for cleaning, blending and as stain removers and degreasers, the importers confirmed that they never applied for permit to import in 2005. There has been excellent performance in the dry cleaning sector as most of them have now changed to the use of perclone.

4.1.2 Government Institutions

All official documents provided by FMEnv, NAFDAC and NCS at Abuja were cross-checked with records collected from the seaports at Tin Can, Apapa, Onne, Warri

and Calabar. No documented record of importation of CTC and TCA was found. The Customs Area Command at Seme land border and the identified illegal routes with the Republic of Benin in Lagos revealed that there was no trace of solvent trade except the prevalent food, clothing smuggling activities. No evidence of importation of CTC and TCA through the Ikom and Maradi borders in the Eastern and Northern parts of the country, respectively.

In summary, the total import for CTC is zero and that of TCA is also zero in 2005.

The year 2005 consumption data provided by UNIDO and verified for correctness for CTC and TCA are presented in Tables 4.2 to 4.5.

Table 4.2: CTC and TCA Import Data Verification with Customs

Customs	CTC (Metric Tonnes)	TCA (Metric Tonnes)
Tin Can	Nil	Nil
Apapa	Nil	Nil
Onne	Nil	Nil
Warri	Nil	Nil
Calabar	Nil	Nil
Seme	Nil	Nil
Maradi	Nil	Nil
Ikom	Nil	Nil

Table 4.3: CTC and TCA Import Data Verification with FMEnv

FMEnv	CTC (Metric Tonnes)	TCA (Metric Tonnes)
Abuja	Nil	Nil
Lagos	Nil	Nil
Warri	Nil	Nil
Port Harcourt	Nil	Nil

Table 4.4: CTC and TCA Import Data Verification with NAFDAC

NAFDAC	CTC (Metric Tonnes)	TCA (Metric Tonnes)
Abuja	Nil	Nil
Lagos	Nil	Nil
Warri	Nil	Nil
Port Harcourt	Nil	Nil

Table 4.5: CTC and TCA Consumption Data Verification with Importers

Importers	CTC (Metric Tonnes)	TCA (Metric Tonnes)
Olympic	Nil	Nil
Mez	Nil	Nil
Linland	Nil	Nil
Miracle	Nil	Nil
Dana	Nil	Nil
Nulec	Nil	Nil
Hoechst	Nil	Nil
Nevas	Nil	Nil

4.1.3 Findings

The results of our data verification and analysis show that:

- No CTC/TCA import permit was issued to the recognized importers in 2005;
- Neither CTC nor TCA was imported into Nigeria in 2005;
- CTC and TCA were not exported out of the country in 2005;
- Nigeria does not produce CTC and TCA;
- FMEnv, NAFDAC, NCS and Importers records showed zero importation of CTC and TCA in 2005;
- NOO of the FMEnv performed above the projected CTC and TCA phase-out target in 2005;
- Consumption of CTC and TCA in Nigeria were both zero in 2005.

4.2 Implementation of the 2004 Auditor's Recommendations

There have been series of consultative meetings between FME_{nv} and related agencies, NAFDAC, Customs, etc, which has led to more effective collaboration and better cooperation in the implementation of the permit system

There are ongoing efforts to ensure that there is no duplication of efforts in the issuance of permits as machinery is being put in place to establish a joint committee comprising NOO, NAFDAC and Customs to handle the permitting and enforcement systems.

The draft Ozone Act has moved a step forward in the approval process as it has been placed before the Federal Ministry of Justice for review and redrafting.

The Nigerian Customs are now fully involved in the ODS phase out activities and they attend all meetings and workshops organized by the Federal Ministry of Environment. The Nigerian Customs has even designated a Deputy Comptroller as the ODS phase out schedule officer in the Customs. This means that there has been *improved awareness and better understanding of the ODS issues in the Customs.*

The ODS substitutes are now becoming more available in the Nigerian markets as revealed during our visits to the importers, distributors and the end users.

The national solvent phase out planning/implementation committee in the Federal Ministry of Environment has continued its role as the national authority to determine all the activities to ensure the country's compliance with the Montreal Protocol in terms of the consumption of CTC and TCA.

4.3 Discussion

The current situation whereby both the Federal Ministry of Environment and NAFDAC have oversight functions for the control of ODS imports should be streamlined. The situation on ground is that both the FME_{nv} and NAFDAC issue

permits for the import of ODS but the actual enforcement is being carried out by only NAFDAC, by virtue of their presence at the ports.

In the ongoing efforts to ensure that there is no duplication of efforts in the issuance of permits, machinery is being put in place to establish a joint committee comprising NAO, NAFDAC and Customs to handle the permitting and enforcement systems. Therefore, we recommend that this effort should be pursued to its logical conclusion.

Implementation of the importation of extremely hazardous chemicals which require that permits be obtained before import and after import, 100% inspected and clearance obtained to remove them from the port system has been difficult due to inadequate training of Customs personnel in the identification of ODS. Regular training of the Customs men will go a long way in making the permit system implementable for ODS. We therefore recommend that designated officers of the Customs should be properly trained and be up to date in ODS issues.

The importation of used refrigerators, air-conditioners and compressors has already been banned. Also, a ban has been placed on importation of cars older than eight years. These have direct bearing on the implementation of the Montreal Protocol phase out programme in Nigeria and we, therefore, recommend that the ban on the importation of ODS-based equipment and appliances should be sustained.

Some solvent phase out projects are ongoing while others have been completed. These efforts should be continued in order to attain the projected target for their phase out in Article 5 countries. From our interaction with some of them, we observed that some of these ODS have been completely phased out and replaced by the ozone friendly substitutes. Actually, some enterprises in the solvent sector have been phased out completely. While some of them have completely converted such as the formulators (solvent blenders), parts cleaners, dry cleaners; others are at various stages of completion and some are yet to commence phase out activities.

In terms of the availability of both the ODS and the alternatives, ODS are now becoming more difficult to get and are also more expensive to get while the alternatives are becoming more available and easier to obtain in the Nigerian market. It is clear that even though the demand for ODS is decreasing, the price is still increasing despite the fact that none was imported into the country in 2005. The production of the ODS substitutes and their importation into Nigeria should be geared up to make it more available and cheaper to purchase.

The Nigerian Government should encourage the manufacture and importation of substitutes for the banned Ozone depleting substances and further organize more workshops and seminars for the dissemination of information on these substances.

End users have been converting to the use of substitutes as CTC and TCA are becoming more expensive and difficult to come but silicon oil, kerosene, trichloroethylene, dichloroethylene, ultrasonic equipment, etc. are now made available for cleaning, blending and as stain removers and degreasers. There has been better improvement in the dry cleaning sector as more than half of them have changed to the use of perchlon.

Since this verification exercise is a yearly event, process for the contract award should be properly timed in order to ensure adequate coverage of the areas involved, in line with the Executive Committee's guidelines. We propose that the process starts in early January of each year and contract awarded in February such that the report can be ready in May.

4.4 Recommendations

- The provisional data for CTC and TCA consumption in Nigeria in 2005 should be adopted as the actual consumption for 2005 by UNIDO;
- ODS import/export control should be exclusively handled by the Federal Ministry of Environment;
- Trained FMEEnv officials should be returned back to the nation's ports for proper ODS import/export control;

- Designated officers of the Nigerian Customs should be properly trained and be up to date in ODS issues;
- The Nigerian government ban on the importation of ODS-based equipment and appliances should be sustained;
- Ongoing efforts by the FMEnv to make the licensing system more effective should be sustained and continued;
- The momentum in the implementation of the Montreal Protocol phase out programme should be sustained in order to attain the projected target for Article 5 countries;
- The production of the ODS substitutes and their importation into Nigeria should be geared up to make it more available and cheaper to purchase;
- The National Ozone Office of the Federal Ministry of Environment should organize more workshops and seminars for the dissemination of information on ODS;
- FMEnv officials should be present at all the entry points to the country;
- NAFDAC's authorities should be restricted to issuance of license for consumable and pharmaceutical chemicals and not for chemicals, ODS, and toxic substances;
- The Nigerian government should be encouraged to offer import concessions and tax incentives to CTC and TCA alternatives in order to promote the use of the ozone friendly substitutes and alternative technology;
- Ongoing efforts towards the establishment of a joint committee comprising NOO, NAFDAC and Customs in order to ensure that there is no duplication of efforts in the issuance of import permits and enforcement ODS control should be pursued to its logical conclusion; and
- CTC and TCA verification exercise should be properly timed in order to ensure adequate coverage in line with the Executive Committee's guidelines.

APPENDICES

Appendix 1.1: Terms of Reference and Guidelines for the Verification

TERMS OF REFERENCE AND GUIDELINES FOR THE VERIFICATION OF NATIONAL CONSUMPTION TARGETS OF MULTI-YEAR AGREEMENTS (MYAs)¹ FOR CTC AND TCA IN NIGERIA IN 2005

Prepared on 21 March 2005

Revised on 30 March 2005

Introduction

1. Since 1999, multi-year agreements have become a predominant funding modality of the Multilateral Fund to assist Article 5 countries in achieving the ODS phase out targets under the Montreal Protocol. Under these agreements, the responsible implementing agencies are required to submit a verification report on the achievement of the ODS reduction targets specified in the agreements as a prerequisite for the release of the next tranche of funds. The guidelines below are intended to achieve consistency and uniformity in the methodology for carrying out these verifications. They cover, among other things, data requirement and the procedure to be followed in carrying out the verification.

Guidelines for verification of national consumption targets of the MYAs

Purpose

2. The purpose of the guidelines is to provide guidance for conducting verification of the national consumption targets of the MYAs, bearing in mind the specific reporting requirements in each of these agreements.

Applicability

3. These guidelines are intended for the verification of national consumption targets of multi-year agreements for GFCs, halons, CTC, TCA, and methyl bromide. They do not apply to ODS production sector phase out agreements which are governed by guidelines approved by the Executive Committee in the year 2000; sectorial

plans may require additional verification procedures at the sectorial level.

Basis for verification of the national consumption targets of the MYAs

4. Since the MYAs define their achievement targets in annual national maximum allowable consumption of an ODS, the verification of the national consumption targets of the MYAs should use the Montreal Protocol definition of consumption as the basis for the verification of the achievement of the targets, i.e.

consumption = production + imports - exports.

For those Article 5 countries which do not produce the ODS, the formula can be simplified to be consumption equals imports (minus exports where appropriate). For those countries where ODS is produced, the verification of consumption should include the verification of production which was conducted following the guidelines approved at the Executive Committee's thirty second meeting. Imports and exports should be verified using the criteria defined herein.

Procedure for the verification

5. The verification should review **national legislation, policies and procedures** on ODS imports/exports, such as,

- (a) Channel of communication between Government (the licensing authority) and customs;
- (b) Authorized list of importers, exporters and, where available, distributors;
- (c) Conditions of issuing licenses;
- (d) Administrative procedures and documentation;
- (e) System of monitoring and reporting on exports of ODS;
- (f) Sanctions or penalties to be imposed on violation of legal regulation;
- (g) Mechanisms and capacity for prosecution and enforcement;
- (f) National system of harmonized custom codes in order to identify ODSs and ODS mixtures;
- (g) Procedures to be applied in case of suspicious shipments;
- (h) Sampling or other identification methods used.

6. The verification should review **official statistics** on imports/exports: compare

quotas issued versus actual quotas used.

7. The verification should review a representative **sample of reports from importers/exporters**, and where available of distributors.

8. The verification should review the **follow up on the recommendations** from previous verifications, which are listed in Annex.

9. The verification should conclude the exercise by discussing conclusions and recommendations.

10. Following items should be addressed and/or assessed during the verification exercise,

- the level of the knowledge of ODS issues in the Nigeria customs organization,
- the system to control potential illegal imports of ODSs by mislabeling etc.
- control of potential unofficial imports not going through regulated channel.

Data needed for the verification

11. The following information should be available for the purpose of the verification:

- (a) List of authorized importers/exporters, and where available, distributors;
- (b) ODS imports quotas and exports license issued;
- (c) Actual ODS imports and exports;
- (d) National policies and procedures on ODS imports and exports;
- (e) Government enforcement structure for ODS imports and exports;
- (f) Documents such as licenses, trade names, code numbers, labeling, etc, to be presented to customs by importers and exporters of ODS.

Verification document

12. The final verification document should:

- (a) describe the detailed steps and procedures taken to conduct the verification.
- (b) summarize all aspects of national legislation, policies and procedures designed to ensure achievement of the consumption targets in the multi-year agreement.
- (c) provide detailed data demonstrating and confirming that the consumption target in the multi-year agreement was achieved.

Institution/Consultant to conduct the verification

13. The choice of the contractor to conduct the verification is done to generate a reasonable level of confidence that there is no conflict of interest in the process and that the results of the verification are independent and objective.

Accordingly the contractor is expected to provide independent and objective verification.

14. The selection of the contractor for the verification will be made by UNIDO in consultation with the country concerned. The final selection of the institution/consultant follows the financial rules and procedures UNIDO.

National Consumption Amount to be verified

15. The data reported by the Government of Nigeria as under must be verified. It is to be reminded that the present verification should be done only for CTC and TCA import and export, and NO other ODSs are subject to the verification. The consumption is determined as Production + Import – Export.

Actual data in 2005 (Provisional) To be verified			Maximum amount allowed 2005		
Substance	Ozone depletir potential	ODP tonnes	metric tons	ODP tonnes	metric tons
CTC	1.1	0	0	22.9	20.8
TCA	0.1	0	0	23.0	230

Provisional time schedule

Provisional time schedule is provided below.

#	Activity	Provisional time after the contract signed
Total duration of required Services		5 weeks
A	Review the government policy controlling ODS consumption and production, and the division responsibility between national institutions for enforcing the relevant policies;	1/2 week
B	Review the government statistics on ODS imports and exports against the data from the customs and the amount of quota issues against actual quota applied;	1 week
C	Review the list of government authorized importers and exporters against the records of the customs;	1/2 week
D	Review on a representative sampling basis if necessary the records of importers/exporters against the customs records and the quota issued;	1/2 week
E	Discuss conclusions on the achievement of the annual ODS reduction target as well as recommendation;	1/2 week
F	Review the plan of action proposed by the Government to implement the recommendations from the audit provided in the 2004 report.	1/2 week
G	Assistance for UNIDO on negotiation with the Fulbright Secretariat and Executive Committee on the content of the verification document	15 June 2006.

Reporting

- The Draft Verification Document must be submitted by **1 May 2006** to UNIDO Vienna in English, so that UNIDO is able to submit the verification document to the Multilateral Fund Secretariat by mid May 2006 for the consideration at the 49th meeting of the Executive Committee of the Multilateral Fund to be held for 10 – 14 July 2006. UNIDO may request the contractor to modify the draft document.
- Verification Report taking into consideration any comments by UNIDO to be submitted by 10 May 2006
- Final Verification Report after negotiation with the Fund Secretariat incorporating additional information, comments and/or clarification on the Verification Report to be submitted by 15 June 2006.

Additional information to be provided in the report is as follows, -

- Audit implementation schedule with data, venues, and duration of verification.
- Name affiliation and contact details of the person or the persons with overall responsibility for the verification (e.g., chief accountant of department of statistics, local certified consultant etc.). In case more than one individual is named, the responsibility of each in relation to the steps taken for verification should be provided.
- Outline of the steps taken and the logical analysis used for the purpose of demonstrating that the consumption figures represent the total quantity.
- Description of licensing systems.
- Assessment of illegal imports of ODSs by mislabeling etc.,
- Measures to ensure no importation occurred outside of the registration system.
- Possibility of imports not going through the ports registration system.

ANNEX: Recommendations in the previous verification

ODS Control act

a. The Government must ensure that the law is put in place by the end of 2005

Licensing

b. License for Ozone depleting substances must be left entirely to the Federal Ministry of Environment.

Customs

c. Professional chemist is used as consultants for the certification and release of chemicals.

d. There is a need to train customs officials to be able to identify the Ozone depleting substances by their physical properties.

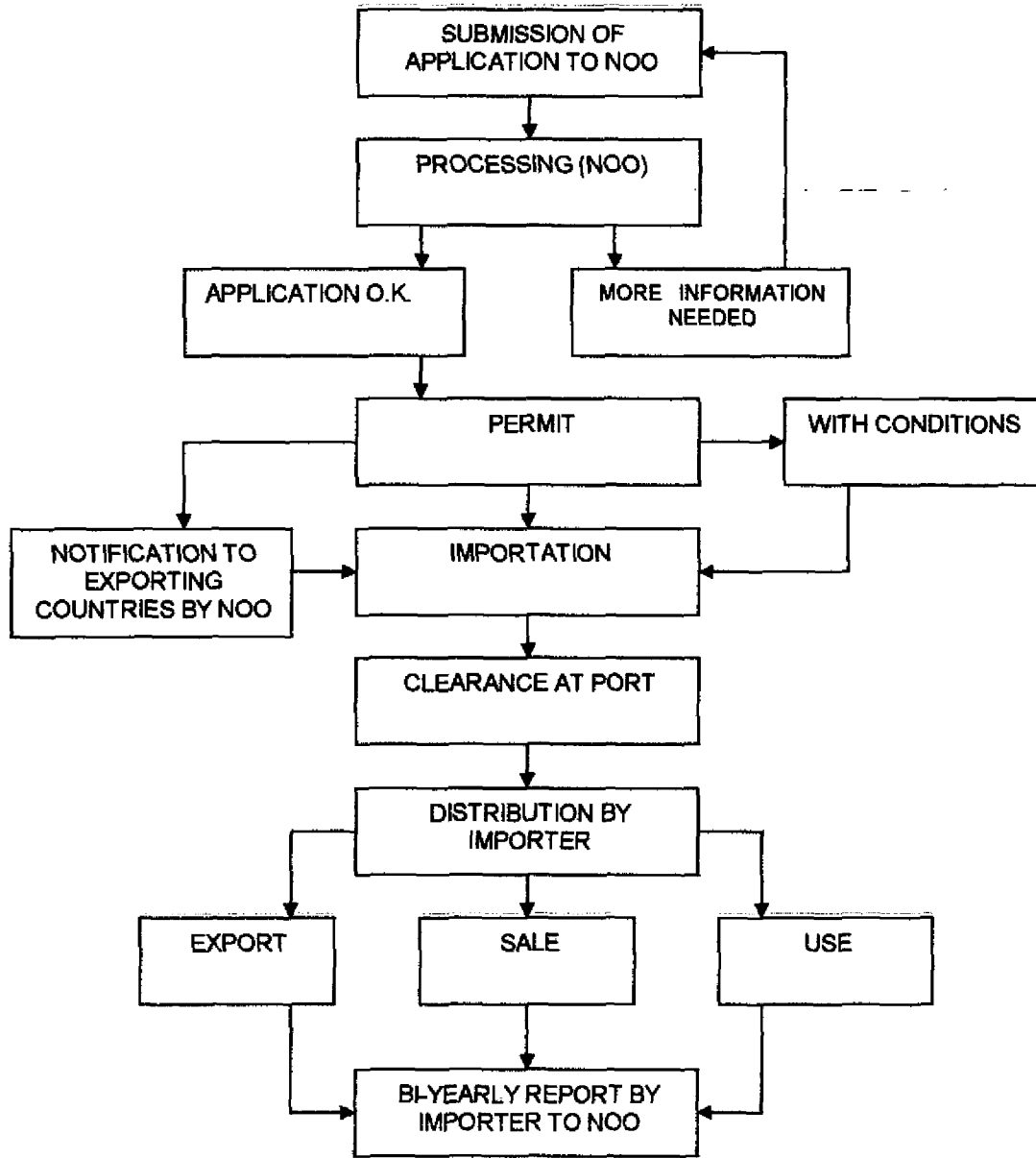
e. Nigeria customs service should be directed to commence the rendering of returns for all Ozone depleting substances imports to Federal Ministry of Environment.

Others

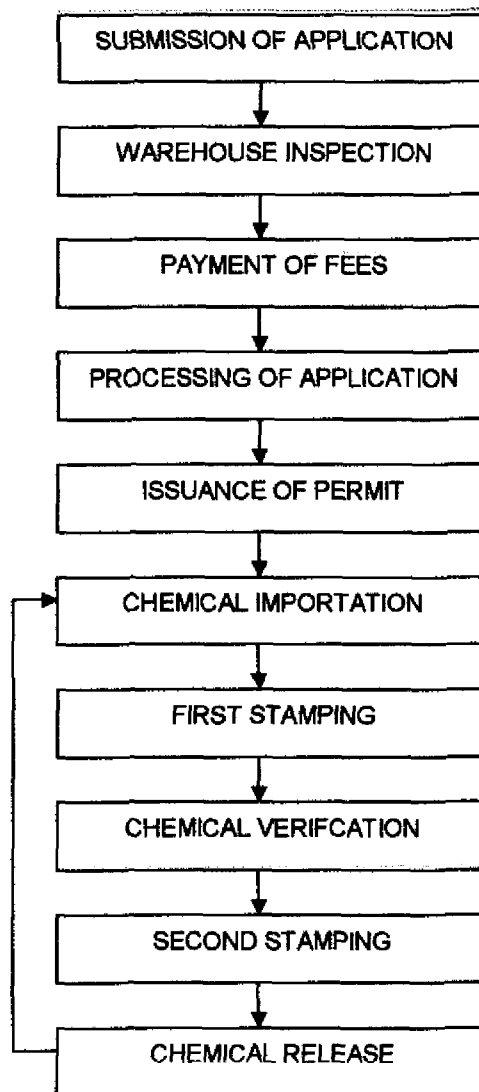
g. Federal Ministry of Environment should direct the pre-shipment inspectors to make mandatory returns of clean reports of inspection in respect of all Ozone depleting substances and equipment using Ozone depleting substances.

h. The Nigerian Government should encourage the manufacture and importation of substitutes for the banned Ozone depleting substances and further organize workshop and seminars for the dissemination of information on these substances

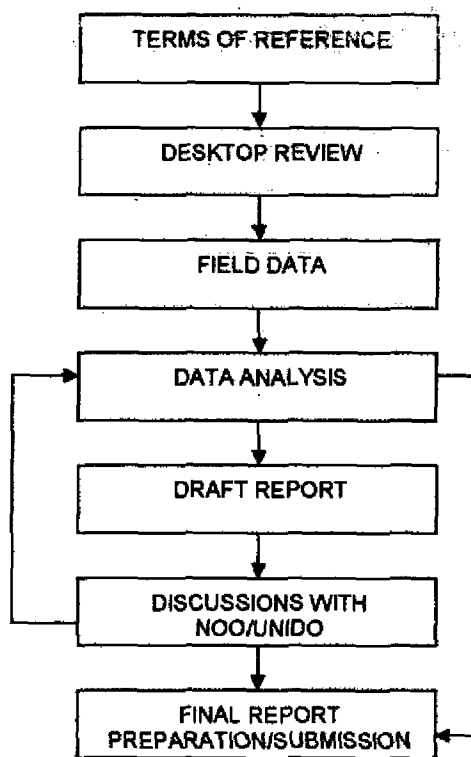
Appendix 2.1: FME_{env}'s Import/Export Licensing System Procedure for ODS



Appendix 2.2: NAFDAC's Import/Export Licensing System Procedure



Appendix 3.1: Audit Study Process



Appendix 3.2: Audit Implementation Schedule

Date	Venue	Activity
21 – 23 April	Lagos	Preliminary Desktop Studies on International Conventions, Vienna Convention and Montreal Protocol
24 – 27 April	Abuja	Review of government policies controlling ODS consumption and production and the division of responsibility between national institutions for enforcing the relevant policies
25 April – 03 May	Abuja, Lagos, Port Harcourt, Warri	Review the government statistics on ODS imports and exports against the data from the customs and the amount of quota issued against actual quota applied
27 April – 04 May	Lagos, Port Harcourt, Warri, Calabar, Ikom, Maradi	Review of the list of government authorized importers and exporters against the records of the customs
01 – 04 May	Lagos, Aba, Abuja	Review of representative sampling records of importers/exporters against the customs records and the quota issued
05 May	Abuja, Lagos	Discussions on the achievement of the annual ODS reduction target and recommendations
06 – 07 May	Abuja	Review plan of action proposed by the Government to implement the recommendations from the 2004 auditor's report
08 – 11 May	Lagos	Writing and Production of Draft Verification Report
11 May	Vienna	Submission of Draft Verification Document

Appendix 4.1: List of Importers of Chemicals

Importer	Address
CAPL General Commercial Division	24 Commercial Road, P. M. B. 1004, Apapa, Lagos
Dana Chemicals Limited	Great Nigeria House, 8 th Floor, 47-57 Martins Street, Lagos
NULEC Industries Limited	Hassan Transport Building, 12 Ijora Causeway, Ijora, Lagos
Cold Care Nigeria Limited	The Magnificat, 32/40 NNPC Road, Opposite NNPC Depot, Ejigbo, Lagos
Tpivote Commercial & Investment Company Limited	Suite 108, Lozumba Plaza, Area 10, Garki, Abuja.
Nigerian Hoechst Plc.	144 Oba Akran Avenue P.O. Box 261, Ikeja, Lagos
Olympic Enterprises Nigeria Limited	52 Balogun Street, G.P.O. Box 2435, Lagos
NEVAS Nigeria Limited	3/4, Abebe Village Road, Iganmu, Surulere, Lagos
Ristian Technical Company Limited	168 Isolo Road, Mushin, Lagos
Linland Nigeria Limited	Ojike Lane, Aba
Mez Industries Limited	12 Simbiat Abiola (Medical) Road, Ikeja, Lagos
Miracle Ventures	195 Faulks Road Aba

Appendix 4.2: List of Distributors of Chemicals

Distributor	Address
International Chemicals Nigeria Limited	37 Olanibi Street, Papa Ajao, Mushin, Lagos
Konc Chemicals Limited	.95 Palm Avenue Mushin, Lagos
Nigerian Synthetic Chemical Industries Limited	13A Ayosoroji Crescent, G. R. A., Ikeja, Lagos
Edward Egoke & Company Limited	73 Akoro Street, Ilasamaja Bus Stop, Lagos
Chemical and Allied Products Limited	21/23 Kingsway Road, Ikoyi, Lagos
.Ugochukwu Chemical Industries Limited	Saka Tinubu Street, Victoria Island, Lagos
West Coast Chemicals Limited	Plot 10 Badejo Kalessanmo Street, Matori, Mushin, Lagos
Swiss Nig. Chemical Company Limited	329 Agege Motor Road, Cappa, Mushin, Lagos
Orion Chemicals Nigeria Limited	7 Alhaji Jimoh Street, off Adeniji Jones Avenue, Ikeja, Lagos
Ibachem (Ibafon Chemicals) Limited	Plot 248 Muri Okunola Street, Victoria Island, Lagos
Afro-Arab Technical Chemicals Limited	Plot 2, Block H, Isolo Industrial Estate, Mushin, Lagos
Imarsel Chemical Company Limited	8A Isaac John Street, Ikeja, Lagos
Galgoz Chemical Industries Limited	9 Gbajobi Street, Ikeja, Lagos
Angos Enterprises	111/112 Ojuelegba Road, Surulere, Lagos
Henkel Chemicals Nigeria Limited	Plot 7, Block K, Isolo Industrial Scheme, Isolo, Lagos
Kenkel Chemicals Limited	2 Douglas Street, Onitsha, Anambra State
Elephant Chemical Industries Limited	Km. 7, Onitsha- Owerri Road, Onitsha, Anambra State

Distributor	Address
Maco Chemical Industries Limited	27 Oguta Road, Onitsha, Anambra State
Pasaco Chemical Industries Limited	Atani Road, Onitsha, Anambra State
United Biochemical Industries	Niger Bridge Head Layout, Onitsha, Anambra State
Miracle Ventures	195 Faulks Road, Aba, Abia State
Chaslit Chemicals	70 Aba-Owerri Road, Aba, Abia State
Elifid Chemical Supplies Nigeria Limited	186 Aba Owerri Road, Aba, Abia State
Keystore Chemical Industries	28 Ochi Street, Achara Lay out, Enugu, Enugu State
Mac Benz Chemicals Limited	5 Ikwuato Street, Uwani, Enugu, Enugu State
Maricent Chemicals & Manufacturers Company Limited	57 Edozien Street, Uwani, Enugu, Enugu State
Marumose Chemicals Limited	22 Ogui Road, Enugu, Enugu State
Modern Chemical Company Limited	8 Awkuzu Street, Uwani, Enugu, Enugu State
Pris Lawson Chemicals Nigeria Limited	2 Nnaji Ogbodo Street, Achara Layout, Enugu, Enugu State
Kentua Chemicals & Allied Products Limited	27 Baleke Street, Abudu, Edo State
Ozomor Chemical Industries	163 Convent Street, Abudu, Edo State
Epodel Chemicals & Company	New Amukpe/ Eku Junction, Delta State
Eagle Chemical Industries	Wulari Ward, Maiduguri, Borno State
Drury	Agbara Estate, Ogun State
Lynson Chemicals Limited	Sango Otta, Ogun State
Fellow Chemicals Industries Limited	142 Woji, G.R.A Phase II, Port- Harcourt, Rivers State

Appendix 4.3: Answers to Questions on Draft Report

Answers to questions raised by the Project Manager, Dr. R. Oshima, on the draft report submitted to the Multilateral Fund Secretariat are listed in the Table below.

Question	Answer
Have you investigated the system to control potential illegal imports of ODSs by mislabeling, etc?	Yes, this is included in the report (Section 2.3.2, pages 17 – 18 under NAFDAC and Section 4.1.2 first paragraph, pages 25 – 26). NAFDAC has been very active at all the entry ports and is adequately equipped with facilities for proper characteristic identification of ODSs to detect any mislabeling of chemicals for illegal importation into the country
Have you investigated control of potential unofficial imports not going through regulated channel?	Yes, this was investigated and reported in Section 4.1.2, first paragraph, pages 25 – 26 There was no trace of solvent trade except the prevalent food, clothing and automobile smuggling activities across illegal entry routes to the country
Have you investigated clean report of inspection?	Yes, the Nigerian Customs has moved a step further by introducing destination inspection of imported items and for chemicals, NAFDAC's presence at the entry points together with improved ODS awareness by Customs officials have made the system of inspection much more reliable and effective (see page 19, last paragraph)
As NAFDAC is not directly involved in importation of ODSs, what kind of information you expected for NAFDAC?	The information gotten from NAFDAC are really for enforcement of the importation of chemicals; ODSs inclusive, at the entry ports as FMEEnv officials are no longer at the nation's ports. NAFDAC's documents were used to ascertain whether there was any ODS imported through the nation's ports or not. Our investigation and well-sourced data and documents obtained from NAFDAC showed no importation of ODSs in 2005 (see Section 4.3, first paragraph, pages 28 – 29)