

**DEVELOPMENT OF A NATIONAL IMPLEMENTATION
PLAN FOR THE
THE STOCKHOLM CONVENTION**

**REVIEW OF THE POLICY, MANAGEMENT AND REGULATORY
FRAMEWORK FOR PERSISTENT ORGANIC POLLUTANTS (POPs) IN
KENYA**

**UNDER THE
KENYA POPS OFFICE**

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MAY 2005.

1. KENYA’S POLICY ON CHEMICAL MANAGEMENT	5
2. BACKGROUND TO THE STOCKHOLM CONVENTION ON POPS.....	8
3. LEGAL AND POLICY OBLIGATIONS AND IMPLICATIONS FOR THE IMPLEMENTATION OF THE STOCKHOLM CONVENTION ON POPS IN KENYA	10
(A) GENERAL OBLIGATIONS	10
Initial Actions to be considered on becoming a Party to the Stockholm Convention on Persistent Organic	
Pollutants.....	10
(i) Registering for specific exemptions	10
(ii) Registering for DDT production and/or use as an allowable purpose	11
(iii) Notifying articles in use for chemicals listed in Annexes A and B	11
(iv) Notifying production and use of closed-system site-limited intermediates for chemicals listed in Annexes A and B	11
(v) Developing and Implementing National Implementation Action Plans	12
(vi) Designating a national focal point	12
(B) SPECIFIC OBLIGATIONS	13
(i) Obligations towards Intentionally Produced POPs	13
(ii) Obligations towards unintentionally produced POPs (UPOPs).....	16
(iii) Obligations towards Stockpiles and Wastes 17	
(C) GENERAL OBLIGATIONS THAT KENYA MUST COMPLY WITH:	18
(D) CAPACITY FOR ENFORCEMENT AND COMPLIANCE WITH THE STOCKHOLM CONVENTION IN KENYA	19
4. LEGISLATIVE, INSTITUTIONAL, POLICY MANAGEMENT AND REGULATORY FRAMEWORK IN KENYA.....	21
(A) National Profile Defining The Legal Framework Relating To POPs In Kenya	21
(i) The Pest Control Products Act (Cap) 346	27
(ii) The Environment Management and Coordination Act, No. 8 (1999)	29
(B) The National Implementation Plan	31
(i) Determination of coordinating mechanisms and organization of process	31
(ii) Establishment of POPs inventory and assessment of national infrastructure and capacity	31
(iii) Setting of priorities and determination of objectives	32
(iv) Formulation of a National Implementation Plan, and specific Action Plans on POPs	32
(v) Endorsement of NIP by stakeholders	33
(C) Implementation of the Special Obligations of the Convention	33
Intentionally Produced POPs – Article 3	33
Unintentionally Produced POPs – Article 5	34
POPs in Stockpiles and Wastes – Article 6	34

(D) General Obligations	35
(E) The Africa Stockpiles Programme (ASP)	35
5. INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING	36
(A) Legislative Capacity Building -Enactment of the Chemicals Control Regulations	36
(B) Policy and Legal Actions	37
(C) Adoption of International Treaty Law	37
(i) The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	38
(ii) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	39
(iii) Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa	39
(iv) Vienna Convention for the Protection of the Ozone Layer	40
(v) Montreal Protocol on Substances that Deplete the Ozone Layer	40
(vi) Soft Law International Agreements	41
(E) Harmonization of POPs Management among Sectoral Policies	41
(F) Education and Training	43
(G) DDT Stockpiles and Wastes	43
(I) Cooperation with Non-Governmental Organization and Inter-Governmental Organisations	43
(H) Application of Environment Management Tools.....	44
(I) Development of Information Data Base	45

ABBREVIATIONS

1. ASP - Africa StockPiles Programme.
2. BATS - Best Available Techniques
3. BEPS - Best Environmental Practices.
4. COP - Conference of Parties.
5. DDT - Dichlorodiphenyltrichloroethane
6. EMCA - Environmental Management and Coordination Act No. 8 of 1999
7. EMS - Environment Management System
8. ESM - Environmentally Sound Manner.
9. FDI - Foreign Direct Investment.
10. HCB - Hexachlorobenzene
11. NEMA - National Environment Management Authority.
12. NIP - National Implementation Plan
13. ODS - Ozone Depleting Substances.
14. PCB - Polychlorinated Biphenyls
15. PCPB - Pest Control Products Board
16. PCDD - Polychlorinated dibenzofurans
17. PCDD - Polychlorinated dibenzo-p-dioxins
18. PIC - Prior Informed Consent.
19. POPs - Persistent Organic Pollutants
20. UPOPs - Unintentionally Produced Persistent Organic Pollutants.
21. UNEP - United Nations Environment Programme
22. UNDP - United Nations Development Programme

1. KENYA'S POLICY ON CHEMICAL MANAGEMENT

The Sessional Paper No. 6 of 1996 on **Environment and Development** prepared by the Ministry of Environment and Natural Resources was intended to translate the National Environment Action Plan (NEAP) Report of 1994 into official policy. It reflects the recommendations of the NEAP Report in a more focused manner. It was the first time that a requirement for a comprehensive environmental policy and legislation was mooted.

On chemicals, the recommendations included in the Sessional Paper are:

- (a) A comprehensive policy, supported by an appropriate legislation governing the management of hazardous wastes to be put in place;
- (b) Hazardous waste disposal facilities and/ or sites to be created;
- (c) Training to be conducted to create a cadre of personnel capable of handling the storage, transportation and disposal of hazardous wastes;
- (d) Inventories on the types, sources, volumes and composition of hazardous wastes be created;
- (e) Private sector involvement in handling hazardous wastes be encouraged and facilitated; and
- (f) International efforts, through cooperation under relevant international legal agreements, be strengthened for the management of hazardous wastes.

Hazardous chemicals were categorized into three main groups in the NEAP Report:

- (i) Wastes that are known to contain significant concentrations of highly toxic, mobile, persistent or bio-accumulative constituents;

- (ii) Wastes from common industrial processes like metal hydroxide sludge, organic and inorganic solvents, toxic gases such as chlorine, sulphur and their compounds, arsenic, asbestos and nitrogen compounds;
- (iii) Large volumes of low hazard waste which easily decompose and other wastes such as aluminum metal, glass wood, paper, plastics and ceramics.

Persistent Organic Pollutants (POPs) Wastes Falling Under Category (i)

Sources of these hazardous wastes include:

- (a) ignitable or toxic chemicals such as petroleum, industrial alcohol and methylated spirit;
- (b) pest and vermin control chemicals;
- (c) food and feed related chemicals;
- (d) pharmaceutical and health related chemicals;
- (e) radioactive chemicals,
- (f) mining wastes; and
- (g) agricultural wastes.

Since Kenya is largely an agricultural economy its policy with regard to chemical management focuses heavily on chemicals used in the agricultural sector of which nine (9) out of the twelve (12) POPs are in fact agriculture based.

In 1999, the East African Sub-Regional component of the Partnership for the Development of Environmental Law and Institutions in Africa Project, sponsored by UNEP, UNDP and the Dutch Government, sought to achieve regional harmonization of environmental laws. Management of toxic and hazardous wastes was one of the major tenets of this project. The publication of the proceedings of this Project clearly set out the national policy, legal framework

and capacity building requirements of all of the three East African countries of, Kenya, Uganda and Tanzania, for hazardous wastes and stockpiles in general.¹

With the advent of several international multilateral environmental agreements, Kenya's policy on toxic and hazardous wastes is moving towards developing ways of beneficial utilization of the chemicals, recycling and processing the waste chemicals to reduce their bulk. The emphasis is now on reduction of the adverse impacts on human health and the environment. Currently, Kenya's policy on chemical management is actualized in the form of mainstream legislation and subsidiary legislation. The framework legislation that provides for chemical management is the Environmental Management and Co-ordination Act. Under the Act, the National Environment Management Authority is in the process of developing regulations on waste management. Other sectoral laws also prescribe for the management of POPs as is discussed in Chapter Four (4) of this text.

¹ *UNEP/UNDP/DUTCH Joint Project on Environmental Law and Institutions in Africa. "Report on the Development and Harmonization of Laws on Hazardous and Non-Hazardous Wastes", Vol. 4 and 5 Dec 1999*

2. BACKGROUND TO THE STOCKHOLM CONVENTION ON POPS

The Stockholm Convention on Persistent Organic Pollutants was adopted in Stockholm, Sweden on May 22, 2001 at the Conference of Plenipotentiaries on the persistent organic pollutants. The Convention entered into force on 17th May, 2004 . Kenya was one of the delegations present during the signing of the Final Act of the Stockholm Convention on 22nd May, 2001. The Government of Kenya ratified the Convention on 23rd September 2004 and the Convention accordingly came into force three months thereafter on 23rd December 2004, in accordance with Article 26 (2) of the Convention.

The Convention aims to protect human health and the environment from the category of substances referred to as Persistent Organic Pollutants (POPs). These substances include industrial chemicals, unwanted by-products of industrial processes or combustion and pesticides.

POPs are characterized by their:

- *Persistence* – the ability to resist degradation in various media (air, water, sediments, and organisms) for years and even decades;
- *Bio-accumulation* - the ability to accumulate in living tissues at levels higher than those in the surrounding environment; and
- *Potential for long-range transport* – the potential to travel great distances from the source of release through various media (air, water, and migratory species).

The Convention imposes various obligations on the State Parties and enunciates objectives, principles and elements to be utilized in developing comprehensive programmes and control regimes with respect to POPs. These regimes are intended to restrict, control, or eliminate the production, use, release and storage of chemicals listed in Annexes A, B and C of the Convention. The obligations, objectives and principles are discussed in detail in Chapter Three (3).

One of the obligations placed on State Parties is to prepare an inventory of POPs within their jurisdiction before assessing infrastructure for the management of POPs. The University of Nairobi

Enterprises (UNES) prepared a final report: Kenya National Inventory of POPs under Stockholm Convention as part of the results of a Priority Setting Workshop.²

² UNES was contracted by the Ministry of Environment and Natural Resources to carry out an inventory on POPs to facilitate compliance with the obligations of the Stockholm Convention

3. LEGAL AND POLICY OBLIGATIONS AND IMPLICATIONS FOR THE IMPLEMENTATION OF THE STOCKHOLM CONVENTION ON POPS IN KENYA

The Convention is structured into four main areas:

- General obligations;
- Specific control provisions;
- Procedure for adding new POPs to the register;
- Financial and technical assistance;

(A) GENERAL OBLIGATIONS

Initial Actions to be considered on becoming a Party to the Stockholm Convention on Persistent Organic Pollutants.

The Stockholm Convention on Persistent Organic Pollutants entered into force on 17th May 2004. Kenya as a party to the Convention is expected to take the following measures to implement the Convention namely: -

(i) Registering for specific exemptions

The Convention contains obligations on elimination and restriction, including import and export of chemicals listed in Annexes A and B. The implementation of these obligations may also include, for some parties, specific exemptions from production and use of chemicals listed in Annexes A and B in the Register of Specific Exemptions established under Article 4(1) of the Convention, if a country is not in a position to immediately impose a ban or severe restriction.

Upon entry into force of the Stockholm Convention, the Register of Specific Exemptions came into effect. Thus pursuant to Article 4(3) of the Convention, any State may, on becoming a Party, by means of a notification in writing to the Secretariat, register for one or more types of specific exemptions listed in Annex A or B of the Convention. If Kenya wishes to be included in the above-mentioned register, she must submit a written notification to the Secretariat, registering for one or more specific exemptions listed in Annex A or B of the Convention.

Kenya has only registered for a temporary exemption on DDT so far.

(ii) Registering for DDT production and/or use as an allowable purpose

In accordance with Part II of Annex B, a DDT Register is established. Parties who intend to produce and/or use DDT for disease vector control, pursuant to Annex B of the Convention are invited to notify the Secretariat accordingly in order to be listed in the DDT Register. As Kenya is using DDT for mosquito control, on ratifying the Convention, she will be expected to notify this to the Secretariat. Kenya has indicated an interest in a temporary exemption on DDT for disease and vector control.

(iii) Notifying articles in use for chemicals listed in Annexes A and B

According to note (ii) of Annexes A and B, quantities of chemicals listed in these Annexes occurring as constituents of articles manufactured or already in use before or on the date of the entry into force of the relevant obligations with respect to that chemical, shall not be considered as listed in the Annexes, provided that a Party has notified the Secretariat that a particular type of article remains in use for that Party. Should Kenya wish to make use of that provision, she should notify the Secretariat accordingly. These particular articles were not identified in the inventory assessment carried out.

(iv) Notifying production and use of closed-system site-limited intermediates for chemicals listed in Annexes A and B

According to note (iii) of Annexes A and B chemicals not marked by an asterisk, their production and use of quantities of chemicals listed in the Annexes as a closed-system site-limited intermediate can proceed where no significant quantities of the chemical are expected to reach humans and the environment during the production and use of a closed-system site limited intermediate, and further that the production and use of quantities of a chemical listed in these annexes as a closed-system site limited intermediate is chemically transformed in the manufacture of other chemicals that, taking into consideration the criteria in paragraph (i) of Annex D do not exhibit the characteristics of POPs. The Party in question must have notified the Secretariat of such production and use. Presently, this provision only applies to Hexachlorobenzene (HCB) and DDT. Should Kenya wish to make use of the provision, she should notify the Secretariat accordingly. However, there is no industrial activity involving HCB or DDT and no plans for any.

(v) Developing and Implementing National Implementation Action Plans

Article 7(1)(a) and (b) requires each Party to develop and endeavour to implement a plan for the implementation of its obligations under the Convention, and to transmit the implementation plan to the Conference of the Parties within two years of the date on which the Convention enters into force.

Kenya is currently developing a National Implementation Plan (NIP) under the auspices of the Ministry of Environment and Natural Resources and the National Environment Management Authority (NEMA).

Under Article 5(a) a national action plan on reduction or elimination of releases from unintentional production of chemicals listed in Annex C of the Convention has been developed, and will subsequently be implemented as part of the National Implementation Plan and also as part of various national programmes.

Under paragraph 5(a) of Part II of Annex B, each Party using DDT will be encouraged to develop and implement an action plan to ensure that DDT use is restricted to disease vector control and that other measures are undertaken as part of the national implementation plan specified in Article 7 of the Convention.

Kenya is obligated to ensure that the national action plan clearly provides for DDT use as a disease vector control measure. It is necessary that the relevant authorities develop the requisite legislation. The restriction on DDT is based on an administrative instruction from the Ministry of Health, which requires follow up through with either a policy or legislative instrument.

(vi) Designating a national focal point

Article 9 (3) of the Convention, requires that each Party designates a national focal point for the exchange of information specified in that Article. The Convention itself does not require the appointment of a focal point for the Convention. However, Kenya does have a focal point – being

the National Environment Management Authority (NEMA) with a designated Co-coordinator for the POPs activities.

To date, Kenya's draft Progress Report includes the following:

It identifies the two main implementing institutions as; the Pest Control Products Board (PCPB) and the National Environment Management Authority. The PCPB deals with the management of pesticides in the country while NEMA deals with the management of industrial chemicals.

An inventory of the status of POPs in Kenya is being carried out in terms of:

- Assessment of the PCBs in Kenya
- Assessment of existing legal and institutional regulatory framework
- Assessment of Socio-economic Issues for the management of POPs
- Assessment of the Education, Information and Awareness
- Development of priority areas for the management of POPs
- Identification of management options for POPs

(B) SPECIFIC OBLIGATIONS

Specific control provisions apply to:

- Intentionally produced POPs.....Annex A and B of the Convention
- Unintentionally produced POPs..... Annex C of the Convention
- Stockpiles and wastes

The Convention's control provisions with reference to the aforementioned substances in the Annexes are contained in 3 key articles:

- Article 3 which addresses intentionally produced POPs;
- Article 5 addresses unintentionally produced POPs; and
- Article 6 addresses Stockpiles and wastes containing any or all of the 12 POPs.

(i) Obligations towards Intentionally Produced POPs

These chemicals are listed in Annexes A and B; Annex A provides for chemicals to be eliminated and include; Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Mirex and Toxaphene which are used as

pesticides and Polychlorinated Biphenyls (PCBs) and Hexachlorobenzene. Annex B on the other hand identifies the chemicals whose use is to be restricted. To date, every DDT falls under this category. The Convention's goal for these POPs is prohibition or elimination of releases of these chemicals from intentional production and use.

Article 3 of the Convention obligates Kenya upon ratification to:

- (a) Take legal and administrative measures to eliminate production and use of these chemicals.
- (b) To eliminate trade in these chemicals except for purposes of environmentally sound disposal or for any other exceptional circumstances provided for in Annex A.

The Convention lays down specific obligations for parties, which concerns PCBs and DDT. The inventory indicates that for PCBs, legal and administrative actions is required to:

- (i) Eliminate the use of equipment that utilizes PCB as a part in transformers and capacitors by 2025;
- (ii) Ensure stakeholders make best efforts to identify, label and remove from use equipment containing more than 10% PCBs with higher priority being given to equipment containing higher levels of PCBs;
- (iii) Restrict all trade in PCB equipment except for environmentally sound management of wastes;
- (iv) Restrict use to intact and non-leaking equipment and prohibit use in equipment involved in food processing;
- (v) Promote fire prevention measures and regularly inspect schools, hospitals and other public places with equipment containing PCBs;
- (vi) Restrict recovery of liquids with 750 ppm PCBs for reuse except for maintenance and servicing of existing equipment;

- (vii) Put in place a programme to ensure Kenya achieves environmentally systematic management (ESM) of PCBs wastes as soon as possible and preferably by 2008;
- (viii) Adopt the reporting format to enable Kenya to report to the COP every 5 years on progress in systematic management of PCBs.

The inventory indicates that Kenya does not produce PCB

For DDT Kenya must develop legislation to:

- (i) Restrict use of DDT except in circumstances where Kenya has notified the Secretariat of its intention to use it for the sole purpose of disease vector control. Such use is to occur in accordance with World Health Organization's recommendations and guidelines and until safe, effective and affordable alternatives are available to the country;

The POPs coordination offices confirm that communication to this effect has been made to the Ministry of Health to ensure that the basis for exemption is made and documented with the Secretariat;

- (ii) Develop a publicly available DDT register maintained by the Ministry of Health to ensure that Kenya:
 - (a) Reports on the quantities used every three (3) years conditions of use and its relevance to Kenya's disease management strategy;
 - (b) Takes measures to improve health care so as to reduce the incidence of malaria;
 - (c) Develops an action plan specific to DDT within the national implementation plan that specifies how DDT use will be confined to disease vector management.

As Kenya has now ratified to the Convention, she will be required to fulfill the aforementioned requirements.

(ii) Obligations towards unintentionally produced POPs (UPOPs)

These are listed in Annex C of the Convention and include; Dioxins, Polychlorinated Dibenzofurans (PCDF); Polychlorinated Dibenzo-p-dioxins (PCDD), Furans, Hexachlorobenzene and PCBs. The Convention's goal for UPOPs is towards the continued minimization and where possible ultimate elimination of the total releases of Annex C substances. In working to achieve this goal Kenya will be required to:

- Promote application of available, feasible and practical measures to achieve realistic and meaningful levels of release reduction or source elimination;
- Promote development, and where appropriate, require use of substitute or modified materials, products and processes to prevent formation and release of Annex C POPs;
- Promote, and require use of Best Available Techniques (BATs) for new sources within industrial source categories (Annex C, Part II), that have potential for comparatively high formation and release of POPs to the environment, and phase in of any BATs requirements for these new sources. The four industrial source categories of UPOPs referenced are:
 - Waste incinerators (municipal, hazardous and medical waste incinerators; sewage sludge incinerators);
 - Cement kilns firing hazardous wastes;
 - Pulp production involving chlorine; and
 - Thermal processes used in metallurgical industry (secondary production of aluminum, copper or zinc; sintering plants in the iron and steel industries).
- Promote the use of Best Available Techniques (BAT) and Best Environmental Practices (BEP) for new sources within the source categories listed in Annex C, Part III, and for existing sources within all categories in Annex C, Parts II and III. The Annex C, Part III list of other potential sources of dioxins, furans and unintentionally produced PCBs includes:

- open burning of waste, including burning of landfill sites;
- Thermal processes in the metallurgical industry not mentioned in Part II;
- Residential combustion sources;
- Fossil fuel-fired utility and industrial boilers;
- firing installations for wood and other biomass fuels;
- Specific chemical production processes releasing unintentionally formed persistent organic pollutants, especially production of Chlorophenols and Chloranil;

The POPs Inventory indicates that this is one area where enforcement and compliance with legislation will be essential.

(iii) Obligations towards Stockpiles and Wastes

The Convention's goal is to reduce or eliminate releases of POPs from stockpiles and wastes containing or contaminated with a chemical listed in Annex A, B or C. Kenya being a Party is now, obligated under Article 6 to:

- Develop and implement strategies to identify stockpiles products and articles in use, and wastes containing POPs.
- Manage stockpiles in a safe, efficient and Environmentally Sound Manner (ESM). Stockpiles of chemicals listed in Annex A or Annex B after they are not legally in use are deemed to be wastes and then managed like other wastes under the Convention.
- Take measures to handle, collect, transport and store wastes in ESM and dispose them in such a way that destroys the POPs content taking into account guidelines developed under related multilateral environmental agreements (MEAs).
- Dispose of stockpiles and wastes of POPs in a manner that destroys their content or irreversibly transforms them, such that the remaining product does not exhibit POPs characteristics taking into account international rules and standards. To this effect parties must:

- Not allow recovery, recycling, reclamation, direct reuse or alternative uses of POPs in stockpiles or other wastes.
- Not transport these materials across international boundaries without taking into account international rules in particular the Basel Convention on Transboundary Movement of Hazardous Chemicals and their Disposal
- Develop strategies for identifying contaminated sites and if remediation is attempted requirement that such remediation be in an ESM.

(C) GENERAL OBLIGATIONS THAT KENYA MUST COMPLY WITH:

- (a) Kenya may submit proposals for the addition of new POPs to the lists in Annexes A, B and C to the Secretariat for consideration by its review committee (Article 8).
- (b) Kenya must develop, implement, and update an implementation plan for the implementation of obligations under the Convention (Article 7). This implementation plan should be transmitted to the COP two years from the date it enters into force for the country. Kenya's implementation plan is therefore due in December 2006.
- (c) The Government of Kenya should encourage/undertake research, development, monitoring and cooperation on all aspects of POPs and their alternatives (Article 11).
- (d) Within its capabilities the Government of Kenya should promote public awareness campaigns and education on POPs (Article 10).
- (e) The Government should facilitate the exchange of information on POPs (Article 9).
- (f) The Convention encourages all Parties to render timely and appropriate assistance in response to requests from other parties but give priority to requests from developing countries (Article 12).

- (g) Kenya is required to undertake to provide within its capabilities, financial support and incentives in respect of national activities intended to achieve the objectives of the Convention (Article 13).
- (h) Kenya is required to report to the Secretariat on the measures taken to implement the Convention and on the effectiveness of such measures in meeting the objectives of the Convention. Such reporting shall be at periodic intervals and in a format decided by the first COP.
- (i) The Government of Kenya is required to comply with the provisions of the Convention and follow the laid down dispute settlement procedures concerning interpretation or application of the Convention (Articles 17 & 18).

(D) CAPACITY FOR ENFORCEMENT AND COMPLIANCE WITH THE STOCKHOLM CONVENTION IN KENYA

It is recognized that Kenya, as well as other developing country parties and parties with economies in transition will need technical and financial assistance in order to implement all the above requirements. For this reason, the Convention has opportunities for:

- Cooperation to request and receive technical assistance to strengthen Kenya's capacity to implement the Convention; from developed country parties and other parties in accordance with their capabilities (Article 12);
- The provision of new and additional resources from developed countries to developing countries and countries with economies in transition, who are Parties to the Convention, to help them develop and strengthen their capacity to implement the Convention; and the establishment of a financial mechanism to be defined by the COP to provide/facilitate the delivery of these resources (Article 13); and
- The establishment of interim financial arrangements (that is until COP defines the permanent mechanism) - the principal entity of which is currently the Global Environment Facility, which is to fulfill this function through operational measures related specifically to POPs (Article 14).

Kenya could be in a position to benefit from financing from the Global Environment Facility (GEF), which would enable her implement, the provisions of the Convention. Financing from the GEF will be provided on a grant or concessional basis, but other modalities of financing on bilateral, multilateral and private basis will also be considered.

The GEF is expected to provide funding for among other things, acquisition of technologies and capacity building necessary for the implementation of the Convention. The NIP will develop thematic areas, which could benefit from this assistance.

4. LEGISLATIVE, INSTITUTIONAL, POLICY MANAGEMENT AND REGULATORY FRAMEWORK IN KENYA

(A) National Profile Defining The Legal Framework Relating To POPs In Kenya

As was noted in Chapter One, Kenya's policy on management of POPs is included in several statutes that deal with chemical management directly or indirectly. Most of the statutes are sectoral apart from Environmental Management and Co-ordination Act which is framework law. However, as the Stockholm Convention has just recently come into force, there is no statute that is specific to POPs. The regime includes:

1. Public Health Act (Cap 242 Laws of Kenya)

The objective of this Act is to provide for measures to secure and maintain the health of the public. It has been observed that one source of POPs is pharmaceutical and health-related chemicals. The relevant provisions with regard to POPs and chemical management in general are in Part IX of the Act. Section 115 of the Act prohibits any person from causing a nuisance or from keeping in their premises any nuisance or condition which may be injurious to human health. POPs as well as other chemicals are captured within the ambit of this section.

Section 118 of the Act provides

“The following shall be deemed to be nuisances liable to be dealt with in the manner provided in this part-

(e) any noxious matter or waste matter, flowing or discharged from any premises wherever situated, into any public street,, or into the gutter or side channel of any street or into any nullah or water course, irrigation channel or bed thereof not approved for the reception of such discharge.

(h) any accumulation or deposit of refuse, offal manure or other matter whatsoever which is offensive or which is injurious or dangerous to health

- (o) *any factory or trade premises causing or giving rise to smells or effluvia which are offensive or which are injurious or dangerous to health; and*
- (s) *any act, omission or thing, which is or may be dangerous to life or injurious to health.*

The role of the Act is limited to management of chemicals in so far as these chemicals affect public health.

2. Pharmacy and Poisons Act (Cap 244 Laws of Kenya)

The purpose of this Act is to make better provision for the control of the pharmacy profession and the trade in drugs and poisons. These pharmaceuticals can be a source of POPs thus tying in the purposes of the Act and the Stockholm Convention.

The Act focuses on the control of pharmacies and protection of the public from poisoning. The Pharmacy and Poisons Board regulates this industry primarily through registration procedures. `

Clear rules and regulations are set out with regard to possession, importation, exportation and local trade of drugs and poisons, advertising, labeling and maintenance of books of account. The pharmaceutical drugs and poisons are listed and classified in the appendixes to the Act and are treated either as poisonous or non-poisonous. Some of these are to be sold only on prescription, while some of the poisons in concoctions are to be present in prescribed portions.

3. Malaria Prevention Act (Cap 246 Laws of Kenya)

This Act does not provide for chemical management specifically, its role is important in so far as malaria prevention may involve the use particularly of DDT, which falls within the ambit of the Stockholm Convention, under Annex B which requires restriction of its use only for purposes of disease-vector-control. The Convention sets out registration requirements prior to its use by any Party to the Convention.

4. Food, Drugs and Chemical Substances Act (Cap 254 Laws of Kenya)

This Act is intended to prevent the adulteration of food, drugs and chemical substances. POPs are covered by this Act as they may fall within the definition of chemical substances. In addition, another source of POPs has been cited as food and feed related chemicals. A chemical substance is defined as "...any substance or mixture of substances prepared, sold or represented for use as a germicide, antiseptic, disinfectant, pesticide, insecticide, rodenticide, vermicide or a detergent".

5. Local Government Act (Cap 265 Laws of Kenya)

This Act deals with the establishment of local authorities and defines their functions, powers and operations. The local authorities have powers of control within their jurisdictions. With regard to chemical management they have powers as set out at section 162(a):

"to compel occupiers or, in the case of vacant premises, owners, to keep their premises free from offensive or wholesome matter"

Section 163(e) further empowers local authorities to:

"control or prohibit all businesses, factories and workshops which, by reason of smoke, fumes, chemicals, gases, dust, smell, noise, vibration or other cause, may be or become a source of danger, discomfort or annoyance to the neighbourhood, and to prescribe the conditions subject to which such businesses, factories and workshops shall be carried on"

These provisions may be enforced to cover many of the source categories of POPs placing them under the jurisdiction of the Local Government Act.

Through these powers the Local Authorities can impose, control and manage POPs within their jurisdiction. In addition by-laws can be developed to facilitate implementation of laws that may deal specifically with POPs. The Local Authorities are pivotal agents in this regard as they are able to reach communities at the grass roots, various stakeholders and the public at large.

6. Fertilizers and Animal Foodstuffs Act (Cap 345 Laws of Kenya)

The objective of the Act is to regulate the importation, manufacture and sale of agricultural fertilizers and animal foodstuffs and substances of animal origin intended for the manufacture of such fertilizers and foodstuffs.

Chemical management is reflected in the Minister's powers to make rules for the due implementation of the Act. A series of rules and regulations have been promulgated in this regard; The Fertilizers and Animal Foodstuffs (Approved Fertilizers) Rules, which for instance specifies substances or a mix of substances, for use as fertilizers. These substances are chemicals that may contain POPs degenerate to have POP like characteristics thus putting them within the realm of the Stockholm Convention.

7. Cattle Cleansing Act (Cap 350 Laws of Kenya)

This Act is relevant to chemical management in so far as acaricides are concerned, which are the primary tick treatment chemicals used in animal husbandry.

The Act controls the content, preparation and application of the tick destroying agents. Alternatives to arsenious oxide are given such as benzene hexachloride and chlorinated camphene in specific portions.

8. The Factories and Other Places of Work Act Cap 514 Laws of Kenya

The objective of the Act is set out in its preamble as to provide for the health, safety and welfare of persons employed in factories and other places.

The role of the Act with regard to chemical management is in the protection of human health in the work place. Section 51 of the Act provides that:

“In every factory in which, in connexion with any process carried on, there is given off any dust or fume or other impurity of such character and to such extent as to be likely to be injurious or offensive to the persons employed, or any

substantial quantity of dust of any kind, all practicable measures, shall be taken to protect the persons employed against inhalation of the dust or fume or other impurity and to prevent its accumulation in any workroom...”

This provision seeks to regulate the quality of media often utilized by POPs as transport agents.

In addition the Minister is empowered under Section 55 to make rules necessary and reasonably practicable to reduce the offensiveness of any process within a factory. This may involve assessment of the effectiveness of the production processes or pollution control devices, or compliance of waste disposal mechanisms to standards and guidelines. The role of this Act in the management of POPs is perhaps felt most in industries that produce or use POPs even in closed-system-site (limited processes).

9. Water Act No. 8 of 2002

The Act plays a unique role in the protection of water bodies and resources. Like EMCA the Act adopts a supervisory and precautionary approach. The provisions of the Act that contribute to the control of POPs are the permit requirements provided for under section 25 (1) namely:

“A permit shall be required for any of the following purposes: -

(c) the discharge of a pollutant into any water resource”

The Water Act criminalizes pollution of all sorts and Section 94(1) (b) provides that:

“No person shall, without authority under this Act-

(b) Throw or convey, or cause or permit to be thrown or conveyed, any rubbish, dirt, refuse, effluent, trade waste or other offensive or unwholesome matter or thing into or near to any water resource in such manner as to cause, or be likely to cause, pollution of the water resource.”

(2) A person who contravenes this section shall be guilty of an offence”

The current water standards do not include POPs. The usefulness of such inclusion will be determined by the specific source categories.

The Act also provides for the remedy for contravention of the obligations under the Act. Section 96 of the Act empowers the Authority to serve on a person concerned an order requiring him to clean up any pollution or make good any other detriment identified in the order, which was caused to any water resource by reason of the contravention. Thus discharge to the water media will be assessed and monitored in order for such an order to issue and be enforced.

The permits issued under the Act can be subjected to conditions imposed in accordance with section 30 of the Act. These conditions are set out in the Second Schedule of the Act. Rules prescribed under the Act may also impose conditions attendant to the permit.

CONCLUSION

The statutes discussed above generally deal with chemicals in terms of pollution, import, export and protection of persons from their harmful effects. These laws are not entirely effective with regard to POPs management, as the chemicals that fall within the ambit of their control were not classified with reference to characteristics of POPs. Further, at the time of their enactment emphasis was not placed on the preservation and management of the environment. They cannot in themselves form an adequate legislative framework for chemical management generally and in particular the management of POPs.

These shortcomings, however, are being addressed in subsequent legislation particularly the Environment Management and Coordination Act No. 8 of 1999, as well as the draft regulations on chemicals. However, EMCA does not fully provide a comprehensive legal framework to manage POPs. EMCA contains framework provisions for the management of toxic and hazardous chemicals and calls for the development of regulations to provide for specific chemicals. It is envisaged that these regulations on toxic and hazardous chemicals will seal some of ambiguities within the Act.

Two statutes that can be seen to deal most directly with POPs management are:

1. The Pest Control Products Act (Cap 346); and
2. The Environmental Management and Coordination Act (Act No 8 of 1999).

(i) The Pest Control Products Act (Cap 346, Laws of Kenya)

The Pest Control Products Act was enacted to regulate the importation, exportation, manufacture, distribution and use of products that control pests and organic functions of plants and animals and for related purposes.

The Act adopts a prohibitory approach in regulations as is illustrated in its key provisions:-

Section 3(1) of the Act prohibits persons from manufacturing, packing, storing, displaying, distributing, using or advertising any pest control product except in accordance with the regulations made under the Act.

Section 4(1) provides that no person shall import into Kenya any pest control product unless that product has been registered, packaged and labeled in accordance with the regulations made under the Act and conforms to the standards specified in those regulations. Exportation and re-exportation is also prohibited in the same manner (Section 4(2)). POPs by their nature of toxicity fall under this category.

The Pest Control Products Board is established under section 5 to enforce the provisions of the Act. The Board's functions include assessment and evaluation of pest control products and registration of the same. It takes into consideration both local and international regulatory regime of the substances.

Some of the regulations promulgated under the Act include:

1. The Pest Control Products (Licensing of Premises) Regulations L.N. 145/1984
2. The Pest Control Products (Labeling, Advertising and Packaging) Regulations L.N. 89/1984
3. The Pest Control Products (Registration) Regulations - L.N No 46/1984, and

4. The Pest Control Products (Importation and Exportation) Regulations – L.N No 146/1984

The Pest Control Products Board has to date banned 7 out of 9 intentionally produced POPs and restricted the use of DDT in Kenya.

The Pests Control Products Act does, however, have significant shortfalls and requires amendments. Some of the suggestions that have been put forward in order to assign the provisions of the Act with the Stockholm Convention include:

- **Banning or restricting the production and use of pesticides where:**
 - (a) A pesticide is dangerous to the human life and environment.
 - (b) It is necessary to implement the provisions of an international treaty agreement or Convention to which Kenya is a party.
- **Banning or restricting the importation of a pesticide into the country where:**
 - (a) (a) Above
 - (b) (b) Above
 - (c) It has been banned or restricted in the country of origin
 - (d) Kenya is not in position to dispose of the pesticide in an environmentally sound manner
 - (e) Where there is no prior notification of the intended import
- **Provide for exemptions for the above, which exemptions could include:**
 - (a) Laboratory-scale research;
 - (b) Reference standards;
 - (c) Unintentional trace contaminants in products and articles;
 - (d) Constituents of articles manufactured or already in use before or on the date of commencement of such regulations.
- **Incentives to the use of alternatives to the banned\restricted pesticides**

- (a) Regulate disposal sites for pesticides wastes. This will include adherence to EMCA's provision on licenses and environmental impact assessments (EIAs);
- (b) Regulation of transportation of pesticides within the requirements of the Convention;
- (c) Regulation of the disposal of pesticide derived from waste itself.

(ii) The Environment Management and Coordination Act, No. 8 of 1999

The Environmental Management and Coordination Act of 1999 (EMCA) establishes a legal framework for the management of pesticides, toxic and hazardous chemicals. EMCA allows for the promulgation of future legislation by way of development of specific regulations. The Act also adopts the preferred, precautionary principle³ as opposed to prohibitory mechanisms adopted in the Pest Control Products Act. EMCA has sealed several of the shortcomings of the earlier statutes on chemical management.

EMCA deals with a more comprehensive and wide listing of chemicals. It captures hazardous chemicals and chemical wastes from industrial processes, research, photographic processes, surface treatment of metals and wastes from the petrochemical industry among others.

The Standards Enforcement and Review Committee (SERC) is charged with recommending criteria for the classification of hazardous wastes. Management of the hazardous wastes is done based on the categories developed by the Committee.

Section 92 of the Act empowers the Minister to make regulations prescribing the management of toxic and hazardous chemicals including classification, registration, importation, exportation, packaging and advertising among others.

Section 93 is the protective provision of the environment it regulates and in some instances prohibits the discharge of hazardous substances, chemicals and materials or oil into the environment. Owners

³ The precautionary principle is a principle that states that where there are threats of damage to the environment, whether serious or irreversible, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.

or operators of any facility or equipment that occasions discharge contrary to the Act are responsible for the mitigation of the impact of their actions.

Section 94 mandates the Standards and Enforcement Review Committee to prepare standards for pesticides and toxic substances. Also in relation to pesticides and toxic substances, the Act provides for registration, storage, manufacturing, importation and exportation. EMCA empowers the Minister in Section 100 to make regulations governing registration of toxic substances.

Another control mechanism for chemicals is effected through the environmental impact assessment procedure, which provides the Authority with an opportunity to assess the potential adverse effects of such projects on the environment prior to their commencement. Through public participation affected persons can table their views on the project, associated risks can be managed through mitigation measures and the environment protected. The Environmental (Impact Assessment and Audit) Regulations 2003, govern the requirements for environmental assessments and audits that are undertaken by proponents of the projects prescribed in the Second Schedule of EMCA.

EMCA provides a framework through which concerns on stakeholders on the impact on the environment can be exhaustively dealt with. Complaints relating to the environment may be lodged with the Public Complaints Committee (PCC). The merits and demerits of the complaint are heard and recommendations issued by the Committee to the Authority through the National Environment Council. Where parties are aggrieved with the decision of the Authority, they may appeal to the National Environment Tribunal (NET) a further appeal lies in the High Court of Kenya.

NEMA is in the process of finalizing draft regulations to regulate the use and disposal of Toxic and Hazardous Chemicals. The Regulations will provide for, *inter alia*, registration, classification, labeling, packaging, distribution, storage, transportation, importation, exportation and final disposal of toxic and hazardous chemicals and pesticides.

(B) The National Implementation Plan

In developing her National Implementation Plan, Kenya may wish to follow, and amend as appropriate to the national circumstances, the step-wise process presented in the Convention. It covers the following five main groups of activities as summarized below:

(i) Determination of coordinating mechanisms and organization of process

- ***Identification of the focal point***

The National Environment Management Authority (NEMA) has been identified as the Focal Point in the implementation of the Stockholm Convention

- ***Establishment of a multi-stakeholder coordinating committee***

A multi-stakeholder national coordinating committee based on a stakeholder analysis. Stakeholders include persons in the sectors of environment, agriculture, industry, import and export, public health, trade and transport.

- Identification and assignment of responsibilities among the relevant government departments and other stakeholders for the various aspects of POPs management.

(ii) Establishment of POPs inventory and assessment of national infrastructure and capacity

- Kenya's National Profile is being prepared and the establishment of a register (Pollutant Release and Transfer Register, or equivalent), which will create and maintain a reliable inventory on POPs. The compilation of the inventory has already begun under the auspices of the University of Nairobi Enterprises.
- Preliminary inventory of production, distribution, use, import and export;
- Preliminary inventory of stocks and contaminated sites and products; assessment of opportunities for disposal of obsolete stocks;
- Preliminary inventory of releases to the environment;

- Assessment of infrastructure capacity and institutions to manage POPs, including regulatory controls, and chemical analytical reference laboratories, needs and options for strengthening them;
- Assessment of enforcement capacity to ensure compliance;
- Assessment of social and economic implications of POPs use and reduction, including the need for the enhancement of local commercial infrastructure for distributing benign alternative technologies/products;
- Assessment of monitoring and research and development, and chemical analytical capacity; and
- Identification of POPs-related human health and environmental issues of concern; basic risk assessment as a basis for prioritization of further action taking into account, *inter alia*, potential releases to the environment and size of exposed population.

(iii) Setting of priorities and determination of objectives

- Development of criteria for prioritization, taking into account health, environmental, and socio-economic impact and the availability of alternative solutions; and
- Determination of national objectives in relation to priority POPs or issues.

(iv) Formulation of a National Implementation Plan, and specific Action Plans on POPs

- Identification of management options, including phasing out and risk reduction options;
- Determination of the need for the introduction of technologies, including technology transfer and possibilities of developing indigenous alternatives;
- Assessment of the costs and benefits of management options;
- Development of a national strategy for information exchange, education, communication and awareness raising, taking into account risk perception of POPs by the public;

- Preparation of a NIP that includes priorities and proposed sequencing of implementation, estimated total cost of proposed activities, including incremental costs where applicable; and
- The draftings of regulations under EMCA on management of wastes and chemicals, the regulations are expected to be specific on management of these chemicals. The other non-regulatory measures mentioned can be undertaken as collaboration between all the relevant stakeholders. In addition, the use of BATs and BEPs in the management of UPOPs should be promoted.

(v) Endorsement of NIP by stakeholders

- Submission of a draft NIP to stakeholders for comments through workshops, dissemination of information, etc, to obtain the commitment of stakeholders, including decision-makers, to implement the NIP; and
- Finalization of the NIP.

(C) Implementation of the Special Obligations of the Convention

In addition to the preparation of a National Implementation Plan, the Stockholm Convention enumerates several other specific Party obligations to be fulfilled. These are summarized below:

Intentionally Produced POPs – Article 3

- So far in Kenya, the Pest Control Products Board between 1986 and 2004 has banned Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene (HCB) and Toxaphene. Between 2001 and early 2004, records from the PCPB indicate that no Stockholm POPs were imported into the country. In Kenya, PCB is found in electrical transformers and capacitors. After 1985, use of PCBs in the manufacture of these types of equipment was banned. Transformers and capacitors manufactured after 1985 no longer contain PCBs. Disposal of outdated electrical transformers and capacitors is an issue that the Government of Kenya needs to resolve as identified by the POPs inventory.

- DDT was restricted in 1986 for use for mosquito control in mosquito breeding grounds and was banned for agriculture use in the same year. DDT has not been imported in Kenya since 1986.

Unintentionally Produced POPs – Article 5

The goal of the Convention is to minimize, and where feasible, ultimately eliminate total releases of chemicals in Annex C derived from anthropogenic sources. The chemicals are Dioxins, Furans, HCB and PCBs.

Kenya must develop action plans on managing these chemicals. The plan should:

- (a) Evaluate current and projected releases
- (b) Develop strategies to reduce releases
- (c) Develop a schedule for implementation of the action plan
- (d) Evaluate the efficacy of the country's laws and policies to manage releases.

The Kenya draft National POPs inventory identifies the major sources of UPOPs in Kenya as incineration of medical waste, biomass and municipal waste burning, pulp and paper production processes and fossil fuel burning. In addition, it has recommended measures to be taken to reduce the release of UPOPs in the country. These measures include:

- Training of personnel and upgrading incinerators used for disposing medical waste;
- Increase in awareness programmes on proper waste handling;
- Development of standards for fossil fuel combustion;
- Reviewing and enforcement of regulations relating to pulp production, handling of wastes and management of disposal sites

POPs in Stockpiles and Wastes – Article 6

The draft national inventory on POPs establishes that there are significant stocks and wastes requiring urgent attention. It proposes the following to secure sites contaminated with wastes:

- transportation of such wastes to secure location;
- decontamination of sites having contaminated wastes;

- destruction of POPs stocks and launching of public awareness programmes;

At the moment, there is no legal requirement for this to be done and there is a need for this to be developed.

(D) General Obligations

General provisions contained in the Convention include Party obligations to:

- Report to the Conference of the Parties on measures taken to implement the Convention;
- Facilitate and undertake information exchange on POPs including the establishment of a national focal point for this purpose.
- Facilitate and promote awareness, education, and the provision of information to the public, particularly for decision-makers and affected groups; and
- Encourage and undertake research, development and monitoring of POPs and their alternatives, and support international efforts along these lines. A special chemical unit could be established in Kenya to ease the co-ordination of research, development and monitoring of POPs in the country.

(E) The Africa Stockpiles Programme (ASP)

The objective of the ASP is to clean up and safely dispose of all obsolete pesticides from Africa and establish preventive measures to avoid future accumulation. It aims to employ environmentally sound ways of doing so. The ASP will also catalyse the development of preventive measures and provides capacity building and institutional strengthening on important issues relating to chemicals.

The ASP complements several international legal instruments that address chemical and hazardous material management. The Stockholm Convention on Persistent Organic Pollutants is one of the Conventions recognized under the ASP for purposes of determining eligibility for obtaining funding from the ASP. Kenya upon accession to the Stockholm Convention is now eligible for funding under the ASP.

5. INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING

(A) Legislative Capacity Building -Enactment of the Chemicals Control Regulations

The greatest challenge for Kenya is to develop a legislative framework that comprehensively domesticates the relevant provisions relating to POPs as set out in the Stockholm Convention and other relevant international agreements. This will most effectively be dealt with by the promulgation of subsidiary legislation.

Subsidiary legislation on chemicals' management has a precedent to follow with the development of regulations for the management of Ozone Depleting Substances (ODS). As the SERC of NEMA prepares to develop regulations to manage chemicals in the country the following must be considered in order to effectively manage POPs

- Firstly there would be a need to harmonize the legislation regulating chemical management there may be a need to repeal, merge or amend some provisions of the current laws to avoid duplication or conflict in the law.
- It is suggested that chemical control legislation should be comprehensive and specific, clearly laying out requirements of handling chemicals, restrictions in the use of chemicals, direction in the manner of production and requirement for mitigation measures where damage is occasioned or probable.

It is crucial that the legal capacity of the country be built in order to effectively manage POPs. This can only be achieved through;

- The immediate development of chemical regulations;
- Establishment of an adequately staffed and chemical unit;
- Acquisition of appropriate equipment for use in monitoring and analysis of chemicals;
- Recruitment of trained prosecutors and customs officials well inducted in their role in chemical management.

(B) Policy and Legal Actions

It is recommended that various technologies for the management of POPs in the country need to be imported. To facilitate the transfer of technology, the following need to be in place:

1. Since Kenya has now ratified the Stockholm Convention and a focal point identified. It is critical that the focal point actualizes the implementation of the provisions of the Convention;
2. The institutional and legislative framework for the implementation of the Convention should be established and their operation began;
3. There is need to inform and sensitize members of the public on the importance of management of POPs to themselves and their environment. The Government and private sectors have a responsibility to educate and train persons working with POPs on the utilization, storage, disposal and other management techniques of POPs.
4. The business environment for private investments needs to be right to facilitate foreign direct investment (FDI) in the country that can introduce alternative technologies to POPs and environmentally sound disposal mechanisms.

(C) Adoption of International Treaty Law

Conventions are usually inter-related and more often than not the preceding agreements form a background for those that follow. Kenya stands to have a comprehensive system of dealing with POPs by adoption and domestication of the provisions of Conventions and Protocols that deal with POPs. The Stockholm Convention recognizes this, in its preamble, it recalls the pertinent provisions of the relevant international environmental conventions, and in particular:

- Rotterdam Convention on the on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade; and

- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal;

Some of the International treaty law that deals with POPs and for which there will be synergies are as discussed below:

(i) The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

This Convention precedes the Stockholm Convention and prescribes the prior informed consent. The Convention was adopted on 11th September 1998 and came into force on 24th February 2004. Kenya deposited her instruments of ratification on 4th February 2004 and the same will come into force ninety days after this deposit, which falls on 4th May 2004.

The Scope of the Convention covers of pesticides and industrial chemicals banned or severely restricted for health or environmental reasons. The listing of these chemicals is obtained from notifications by Parties to the Convention. Many of the chemicals listed in the Rotterdam Convention are also in Annexes A and B of the Stockholm Convention.

The Rotterdam Convention was relevant to the drafting of the Stockholm Convention. Most of the chemicals included in the latter were included in the former this subjects them to national regulatory actions to ban or restrict them.

The Rotterdam Convention emphasis is on the Prior Informed Consent (PIC) Procedure and the eventual ceasing of the use of harmful pesticides and industrial chemicals. Under the Convention the exporter of these chemicals is supposed to provide extensive information to the proposed importer on the potential hazards that the chemical poses to human health and the environment. Kenya's ratification of the Rotterdam Convention will evidently boost the success of POPs management in the country.

(ii) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

The Basel Convention was adopted on 22nd of March 1989 and came into force on 5th May 1992. This Convention provides for import and export management and control regimes relating to hazardous wastes. Whereas the Rotterdam Convention focuses on chemicals in commerce the Basel Convention focuses on wastes. The Convention has developed guidelines for managing wastes contaminated by chemicals in Annexes A and B of the Stockholm Convention and recognizes these guidelines as BATs and BEPs.

The responsibilities of Party States include minimization of the generation of hazardous wastes, provision of adequate disposal facilities, prevention of pollution, reduction of the transboundary movement of hazardous wastes and requirement of information on hazardous wastes imported into the country. The use of ESM in managing of wastes and stockpiles will, therefore, follow the guidelines provided by this Convention.

Kenya acceded to this Convention on the 1st of June 2000. The provisions of the Convention have been domesticated in EMCA Section 141, which makes it an offence to import, dispose or otherwise manage hazardous wastes contrary to the provisions of the Act. NEMA has drafted regulations on waste management and these are currently awaiting gazettelement. Through EMCA and regulations promulgated thereof will facilitate the implementation of the Convention.

(iii) Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa

The Bamako Convention was adopted in Mali, Bamako on 30th January 1991, it came into force on 22nd April 1998. The Convention has 18 parties (ten ratifications and eight accessions). Kenya signed the Convention on 25th March 2004. It has yet to ratify the Convention.

This Convention was intended to fortify the provisions of the Basel Convention in order to protect the African people and their environment. The treaty was inspired by the fact that Africa had over the years become a cheap dumping site for hazardous wastes produced in developed countries.

The rights and responsibilities of the parties are similar to those set out in the Basel Convention, but are specific to the African region. With regard to management of the impact of POPs the Convention creates a platform and network of information within Africa to deal with importation of hazardous wastes. Thus, wastes contaminated with POPs cannot be dumped in the African Region and by extension into Kenya where the provisions of this Convention are in play.

(iv) Vienna Convention for the Protection of the Ozone Layer

This Convention was an important precedent as it was the first time that nations agreed in principle to tackle the global environmental concern on the depletion of the ozone layer. The Convention was concluded in Vienna on 22nd March 1985. It was a framework Convention intended to address the adverse effects on human health and the environment brought about by change in the ozone layer resulting from use of man-made chemicals.

Parties to the Convention are expected to co-operate in research and information exchange as well as develop appropriate legislative and administrative measures to tackle management of activities likely to adversely impact on the ozone layer. POPs are some of the substances that may cause the modification of the ozone layer and for that reason fall within the ambit of this Convention. Kenya is a party to this Convention she acceded to it on 9th November 1988 and is therefore bound by the obligations prescribed therein.

(v) Montreal Protocol on Substances that Deplete the Ozone Layer

The Montreal Protocol is the implementing arm of the Vienna Convention. Whereas the Vienna Convention established a framework, the Protocol deals with the substantive provisions for the management and preservation of the ozone layer. Using science based decision-making, the Montreal Protocol identifies the ODS and prescribes measures for management of their use and disposal and is thus similar to the POPs Convention.

The Protocol was concluded on 16th September 1987, its overall purpose was to gradually reduce and finally phase out global emissions of all ozone depleting substances. In particular, the Protocol revised phase-out schedules for identified substances. Kenya acceded to this Protocol at the same time as the Vienna Convention on 9th November 1988.

(vi) Soft Law International Agreements

Other than Conventions and Protocols international co-operation has also resulted in the promulgation of codes of ethics and guidelines on chemicals and wastes.

One of these is the **London Guidelines for the Exchange of Information on Chemicals in International Trade 1987 (amended 1989)**; the essence of these guidelines is to provide measures to promote chemical safety through the exchange of information on chemicals traded internationally. The 1989 amendment incorporated the Prior Informed Consent (PIC) procedures contained in the Rotterdam Convention.

The **Code of Ethics on the International Trade in Chemicals (1994)** was complementary to the London Guidelines. The Code prescribes for private sector parties to enter into voluntary commitment to increase chemical safety, augment management of chemicals through exchange of information and to provide procedures to monitor voluntary compliance by parties to the guidelines. The Code's emphasis is on self-regulation amongst private parties and voluntary initiatives among chemical users.

Kenya stands to gain tremendously from adoption of the Guidelines and the Code particularly in so far as it includes private parties in the process of chemical management.

(E) Harmonization of POPs Management among Sectoral Policies

A successful POPs management regime will require harmonization on several fronts. As discussed, Kenya's POPs management system would benefit from the synchrony of legislation with the Stockholm Convention and other international and regional agreements with related content.

National harmonization of POPs management is of essence. In the first instance, national policy should focus on developing a nationally accepted and environmentally friendly sound chemicals management procedure. To achieve this, it is important to involve key stakeholders in development, improvement and implementation of the policy. As Kenya moves towards industrialization by 2020 the chemicals industry will be as important as the agricultural industry in POPs management.

The POPs management policy must be acceptable, based on universally accepted scientific risk-based assessment of POPs management and should incorporate core principles of safety and environmental conservation.

Some of these principles include:

- Sustainable management and development which focuses on risk reduction management where plausible and emphasis on development that meets the needs of the present generation without compromising the ability of future generations to meet their needs by maintaining the carrying capacity of the supporting ecosystems;
- The precautionary approach, which prescribes that there are threats of damage to the environment, whether serious or irreversible, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation;
- The “cradle to grave” approach to chemical safety relates to the management of risk throughout the process of chemical management from start to finish. This is realized in the domestication of international treaties that provide for chemical management in various stages of the process. With regard to POPs the three are the Rotterdam Convention, Stockholm Convention and the Basel Convention.

The second step towards harmonization includes the establishment of Standards. The Standards Enforcement Review Committee (SERC) created under EMCA is charged with this responsibility in Kenya. In developing standards (SERC) may gain from embracing international standards. These may be borrowed from international Conventions, the current standards in the region or those adopted by nations that have well-established regimes in chemical management. Such standards must however be suitable to the nation’s current status and or capacity to adapt, implement and enforce the same.

The concept of exchange of information is embodied in all the three Conventions, namely, Rotterdam, Basel and Stockholm. The availability of a pool of information is key in understanding

the state of affairs in chemical management and equips Kenya in the development of a framework management system to deal with possible risks that may arise to human health or the environment.

(F) Education and Training

An effective management system must be supported by an aggressive education program. Training of key players on standards and laws promulgated, and obligations attendant thereto is crucial for the practical success of risk management of POPs and other chemicals.

Training must be followed up with institution or enterprise based projects to help individual stakeholders integrate the management concepts into their health and environmental protection programmes. This may in turn lead to private enterprise in the management of POPs.

(G) DDT Stockpiles and Wastes

There is no specific policy and legislation covering wastes disposal as far as DDT is concerned, it is recommended that the BATs and BEPs for DDT disposal to be adopted include:

- Incineration using cement kilns;
- Bioremediation; and
- gas phase chemical reduction.

These technologies also need to be acquired through technology transfer procedures. However, there is no policy guidance requiring them to be incorporated as BATs or BEPs.

(I) Cooperation with Non-Governmental Organizations (NGOs) and Inter-Governmental Organizations

NGOs play a key role in the realization of the goals of the Stockholm Convention and other chemical safety agreements. In order to ensure success in the implementation of these Conventions the role that NGOs play is vital especially with regard to advocacy and introduction.

Presently the United Nations Environment Programme (UNEP) with its head quarters in Nairobi, Kenya plays an active role in chemical management. UNEP has under its wing most of the chemical and waste management programmes and Kenya should take the advantage of this proximity.

Other important organizations are the Food and Agriculture Organization (FAO). This is the principle agent covering pesticide use particularly with regard to the agricultural industry, which is its primary focus.

The International Labour Organization (ILO) steps in where issues of human health and in particular employee safety in work environments where POPs and other potentially harmful chemicals are exposed to the employees. The World Health Organization participates also in the protection of human health and will carry out research into eliminating health risks resulting from chemicals. In Kenya WHO is involved in finding alternatives to POPs that are detrimental to human health such as DDT.

Working with these organizations is important as it benefits the country by easing access to information, human resources and financial resources. Involvement in programs and projects organized by these organizations also encourages cooperation with other countries, which is effective in the realization of the objectives of the Convention.

(H) Application of Environment Management Tools

These tools include the environmental impact assessment, environment audits and ISO 14001 environment management systems (EMS). The first two have been incorporated into legislation particularly the EMCA. The third however has not yet been domesticated in Kenya.

ISO 14001 EMS is an international standard used worldwide to internalize environmental management at enterprise level. Its objective is to provide enterprises with the structure to introduce EMS, which can be incorporated into the business policy to achieve both environmental and economic goals. This standard enables business enterprises to embrace environmental conservation objectives, while still attaining their business objectives.

ISO 14001 EMS is a useful tool to deliver cleaner production, BATs and BEPs. However, adopting it into business practice it is still voluntary.

Business in Kenya should be required to adopt and tailor the EMS standard to their circumstances with regard to POPs to facilitate a unified and effective management model.

(I) Development of an Information Data Base

A successful program for the management of POPs can only be achieved where a comprehensive information database exists. It is essential to identify POPs that are present in the environment, define their properties, identify their source, quantity and potential impact of the POPs on the environment generally and human health. To develop such a comprehensive database an intensive research and compilation exercise must be conducted. This would work best after the requisite capacity building is carried out in the right institutions and the requisite legal and administrative regime implemented.

In the process of developing this database reference may be made to already existing sources such as the Kenya Ozone Office, Kenya Cleaner Production Center, and the Kenya Association of Manufactures among others. It would be most important if synergistic co-operative arrangements are developed in this regard.

CONCLUSION

With all these in place, Kenya is very likely to be a beneficiary of funding from the Global Environment Facility (GEF), the ASP and other financial mechanisms/arrangements that will in future be availed to developing countries for the protection of their environment from persistent organic pollutants.

Financing is key in ensuring that successes are recorded in POPs management, which turn will have real results in the preservation of our environment and the protection of human health which are the underlying purposes of the Stockholm Convention.

MEASURES TAKEN TO MANAGE PERSISTENT ORGANIC POLLUTANTS IN KENYA

Category	Chemical Name	Convention Annex	Use	Action. Measures taken to Eliminate/Restrict the use in Kenya	Law/Regulatory Policy Governing Act
Pesticide	Aldrin	A	Insecticide	Banned in 2004	Pest Control Products Board (PCPB) under the Pest Control Products Act (PCPA)
Pesticide	Chlordane	A	Insecticide	Banned in 1986	PCPB under the PCPA
Pesticide	Dieldrin	A	Insecticide	Banned in 2004	PCPB under the PCPA
Pesticide	Endrin	A	Insecticide	Banned in 1986	PCPB under the PCPA
Pesticide	Heptachlor	A	Insecticide	Banned in 1986	PCPB under the PCPA
Pesticide/ Industrial Chemical	Hexachlorobenzene (HCB)	A	Fungicide released during manufacture of certain chemicals and as a result give rise to dioxins and furans	Banned in 2004 None	PCPB under the PCPA NEMA to take necessary action
Pesticide	Mirex	A	Insecticide	None	PCPB to take necessary action.
Industrial Chemical	Polychlorinated Biphenyls (PCBs)	A	Coolant for electrical transformers and capacitors	None	PCPB under the PCPA
Pesticide	Dichlorodiphenyl Trichloroethane (DDT)	B	Mosquito Control	- Restricted in 1986 for use in public health only for mosquito control in mosquito breeding grounds - Banned in 1986 for agricultural use and livestock in 1976	PCPB under the PCPA
Unintentional by-products	-Dioxins -Furans	C	-The use of chlorine in the paper making industry introduces dioxins and furans into the environment -Released during fossil fuel and municipal waste burning -Released during incineration of medical waste.	None	NEMA to take action through regulations