

# NAMIBIA'S POLLUTION CONTROL AND WASTE MANAGEMENT POLICY

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Ministry of Fisheries and Marine Resources  
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## **PRELIMINARY**

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This Policy may be cited as Namibia's Pollution Control and Waste Management Policy, 2003.

## **GLOSSARY**

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For the purpose of this policy:

"*Chemical*" means a substance whether by itself or in a mixture or preparation and whether manufactured or obtained from nature, but does not include any living organism. It consists of the following categories: pesticide (including severely hazardous pesticide formulations) and industrial;

"*COMPETENT AUTHORITY*" means an inter-ministerial authority that is proposed in this policy document to oversee pollution control and waste management in the country. It is comprised of representatives from the Ministry of Environment and Tourism, The Ministry of Health and Social Services, The Ministry of Local Government and Housing, The Ministry of Fisheries and Marine Resources, The Ministry of Agriculture, Water and Rural Development, The Ministry of Mines & Energy and The Ministry of Trade and Industry as core-members, and any other relevant authorities (non-permanent members) as deemed necessary by the core-members.

"*Hazardous waste*" means controlled waste which has the potential, even in low concentrations, to have significant adverse effects on human health or the environment on account of its inherent biological, chemical and physical characteristics, such as toxic, ignitable, corrosive, carcinogenic or other properties with adverse effects. This also includes genetically modified organisms and their derivatives.

"*Household waste*" means waste from any buildings used solely for accommodation;



*"Pollution"* means the direct or indirect introduction into the environment as a result of human activity of any substance, energy or thing or combination of these which has or may have a harmful effect on human health, living resources and ecosystems, or which causes or may cause damage to structures or amenities and interference with legitimate uses of the environment;

*"Recycling"* includes the reclamation, reprocessing and reuse of waste as well as the recovery of materials and resource recovery (e.g. energy);

*"Reclamation of waste"* means the collection, sorting and upgrading of waste material to a usable standard;

*"Recovery of materials"* means the retrieval of materials from waste and their reuse for either the same purpose or for different purposes;

*"Trans-boundary movement of waste"* means the importation and exportation of waste into or from Namibia or the transit of waste through Namibia;

*"Treatment"* means subjecting waste to any process including resource recovery, reuse, reprocessing, reclamation or recycling;

*"Wastes"* are undesirable or superfluous by-products, emissions, or residues of any process or activity that have been disposed of or accumulated for the purpose of disposal. Waste products may be gaseous, liquid or solid or any combination thereof;

*"Waste management"* means the collection, storage including interim storage, deposit, transfer, transport, treatment and final disposal of waste and after-care of disposal sites;

*"Waste minimization"* comprises any activity to prevent the formation of waste or reduce the volume and/or environmental impact of waste that is generated, treated or disposed of.

PREFACE

**ACRONYMS AND ABBREVIATIONS**

BAT	Best Available Technology
BEP	Best Environmental Practices
DEA	Department of Environmental Affairs (MET)
DDT	Dichlorodiphenyltrichloroethane
EA	Environmental Assessment
EMP	Environmental Management Plan
FAO	United Nations Food and Agricultural Organisation
GMO	Genetically Modified Organisms ( <i>and their derivatives</i> )
MAWRD	Ministry of Agriculture Water & Rural Development
MD	Ministry of Defence
MET	Ministry of Environment and Tourism
MFMR	Ministry of Fisheries and Marine Resources
MOHSS	Ministry of Health and Social Services
MME	Ministry of Mines and Energy
MTI	Ministry of Trade and Industry
PAH	Polycyclic aromatic hydrocarbons
PBB	Polybrominated biphenils
PCB	Polychlorinated biphenils
PCT	Polychlorinated Terphenyls
POPS	Persistent Organic Pollutants
UNEP	United Nations Environment Programme

"3-R Strategy" stands for waste minimization (reduction), reclamation & recycling strategy.

## PREFACE

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The Republic of Namibia is one of the first countries worldwide to incorporate environmental issues and sustainable development in its supreme law, The Constitution of the Republic of Namibia. The Namibian constitution recognises that “the state shall actively promote and maintain the welfare of the people by adopting policies aimed at...the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilisation of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future....” The above-stated commitment is upheld in this pollution control and waste management policy which may be viewed as the set of principles and guidelines that determine how non hazardous and potentially hazardous wastes are, generated, transported, handled and disposed-of in the Republic of Namibia.

The policy was compiled by the Ministry of Environment and Tourism (Directorate of Environmental Affairs) through a consultative process involving sector ministries, the private sector, Non-Governmental Organisations (NGOs), funding organisations and waste management institutions and professionals. It seeks to complement and unify the current fragmented and poorly coordinated national legislation on pollution control and waste management by setting unifying policy guidelines and establishing an inter-ministerial pollution control and waste management Authority (COMPETENT AUTHORITY) to coordinate pollution control and waste management in Namibia.

The policy also serves to establish a legal framework that would enable, oversee and monitor the implementation of regulations as stated in national and international policies, conventions and protocols to which Namibia is signatory such as;

- *The Rio Declaration on Environment & Development and Agenda 21;*
- *The Rotterdam Convention on Hazardous Chemicals;*
- *The Basel Convention on the Control of Trans-Boundary Movements of Hazardous Wastes and their Disposal; and*
- *The Framework convention on Climate Change;*



The aims and objectives of the policy can be summarised as follows:

#### AIMS AND OBJECTIVES OF THE POLICY

1. Improve the management of non-hazardous waste, hazardous and special waste in Namibia;
2. Improve the management of potentially hazardous products and activities such as agricultural [e.g. fertilizers, pesticides and Genetically Modified Organisms (GMO) and their derivatives], marine (e.g. oil spills, mining wastes and any other offshore pollution) and mining (e.g. soil and groundwater contamination);
3. Encourage cross-sectoral cooperation and coordination of pollution control and waste management;
4. Create a legal framework to empower an inter-ministerial body, the **COMPETENT AUTHORITY**, which would oversee implementation of a national pollution control and waste management strategy in Namibia and monitor compliance with international agreements relating to pollution control and waste management.
5. Provide legislative, regulatory and economic incentives for proper management of waste including waste minimisation, reclamation and recycling;
6. Encourage implementation of comprehensive pollution control and waste management education and capacity building programmes by Government and the private sector;

The policy appreciates its inherent limitations that are as a result of the complex nature of pollution including our current limited understanding of the effects of various kinds of matter on the human and natural environments, and the continuing discovery of new processes and by-products that might have detrimental consequences to these environments. The Government therefore, accepts that the Policy will be reviewed periodically as deemed appropriate by the 'COMPETENT AUTHORITY' (e.g. on a ten year basis) in order to enable updating and refinement so as to address practical realities and new developments in this field.

# 1 GENERAL CONSIDERATIONS for the POLLUTION CONTROL AND WASTE MANAGEMENT POLICY

Environmental problems arising from pollution and waste disposal are complex and extensive, requiring strategies that minimise waste production altogether and encourage a waste-based industry and entrepreneurship. There is currently a global paradigm shift from treating waste as a useless end product that is to be disposed of but rather as a resource that can be used to generate much-needed employment and income particularly in developing countries. There is also an increasing awareness that effective pollution control and waste management requires a decision-making legal framework that involves all the stakeholders such as the proposed 'Competent Authority' consisting of all national organs that deal with issues of pollution and waste management.

1. The policy recognises that there are many factors that influence waste management in Namibia, one being the general perception that the country abounds with vast unoccupied desert areas that can be used for storage of large quantities of waste without harm to its citizens. This belief is by no means valid considering that most wastes and their by-products are eventually transported over long distances through the soil, rivers or atmosphere to areas where they would pose a threat to human and general environmental health.
2. There are currently no concrete economic incentives to encourage proper waste disposal, waste minimisation, reclamation and recycling. It is therefore essential that the policy encourage recognition of the true cost of waste, reflecting both the operating and external costs as well as the cost due to health and environmental effects, so as to provide incentives for proper waste management.

IS THERE A PROPOSAL TO CALCULATE THE ECONOMIC COST OF WASTE IN HEALTH, ENVIRONMENT + EXTERNAL AND OPERATING COST?



## POLLUTION CONTROL AND WASTE MANAGEMENT POLICY

The Government of the Republic of Namibia  
recognises that:

3. Waste management also presents numerous business opportunities and as a result, the policy seeks to encourage public, private partnerships in pollution control and waste management. Indeed, the policy does not only concentrate on the toxicity of waste but rather recognises the nutrient and market value of waste, and the management thereof as an opportunity that could be used to create much needed employment in areas such as waste collection, reclamation and recycling. It is therefore of utmost importance that the policy encourages improvement of the quality of waste produced (e.g. through waste separation and industrial process improvements) so as to enable the generation of re-usable materials.
4. The Policy also seeks to comply with the guidelines set out in Agenda 21 which emphasise reduction of waste production while maximising environmentally sound waste reclamation and recycling. In addition, it further sets out to achieve the objectives set out in all waste-related conventions and protocols to which Namibia is signatory.
5. Lastly, the policy also seeks to create the necessary legal framework and empower a **COMPETENT AUTHORITY** that would oversee well coordinated and sustainable pollution control and waste management in Namibia.

## 2 POLLUTION CONTROL AND WASTE MANAGEMENT POLICY

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### *Preamble*

The government of the Republic of Namibia  
recognises that:

1. "The State shall actively promote and maintain the welfare of the people by adopting policies aimed at...the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilisation of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future" [Constitution of the Republic of Namibia- Article 95].
2. The State shall abide by the regulations provided in all international conventions and agreements relating to pollution control and waste management that it is signatory to. Primarily, The Basel Convention on the Control of Trans-Boundary Movements of Hazardous Wastes and their Disposal, The Rotterdam Convention and The Framework convention on Climate Change.
3. There is an urgent need to create a legal framework for pollution control and waste management in order to ensure cross-sectoral cooperation and integrated waste management in Namibia.
4. Eliminating or reducing the amount of waste produced by using more efficient systems, reusing most of the waste material and recycling is critical for a successful pollution control and waste management strategy.
5. Pollution control and waste management presents market opportunities, and as a consequence, the policy therefore seeks to put incentives in place that would encourage the recognition of waste as a marketable resource, stimulate local entrepreneurship and employment creation

## **NAMIBIA'S POLLUTION CONTROL AND WASTE MANAGEMENT POLICY**

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### **The Policy**

The Government of The Republic of Namibia  
declares the following **POLLUTION CONTROL  
AND WASTE MANAGEMENT POLICY**  
for Namibia:

- (I) The Government of the Republic of Namibia shall establish a 'COMPETENT AUTHORITY' that will oversee pollution control and waste management in Namibia.
  - i) The 'COMPETENT AUTHORITY' shall be an inter-ministerial body consist of representatives of The Ministry of Environment and Tourism (MET), The Ministry of Health and Social Services (MOHSS), The Ministry of Local Government and Housing, the Ministry of Fisheries and Marine Resources, The Ministry of Agriculture, Water and Rural Development, The Ministry of Mines and Energy, and The Ministry of Trade and Industry as core-members of which three shall form a Quorum, and any other relevant authorities (*non-permanent members*) as deemed necessary by the core-members.
  - ii) Until such a time that this policy is enacted and the 'COMPETENT AUTHORITY' is established and operational. The Ministry of Environment and Tourism shall assume the role of the 'COMPETENT AUTHORITY' while all other Ministries and agencies shall retain their current responsibilities pertaining to pollution control and waste management as required by existing legislation.



- breaking
- iii) Any party that is in contravention of this Policy shall be liable to a fine not exceeding N\$ 100 000.00 in the case of 'Non-hazardous wastes' and N\$ 1 000 000.00 for 'Hazardous wastes', and/or any other penalty as decided by the COMPETENT AUTHORITY.

(II) The COMPETENT AUTHORITY shall:

- i) Create and manage a waste information system that will have data on all waste producers, managers and deposit sites in the country.
- ii) Supervise the development of pollution control and waste management strategies and action plans for all relevant sectors e.g. national oil spill and hazardous waste pollution strategy and action plans.
- iii) Prepare and/or strengthen existing legislation that sets the standards for the treatment of wastes (e.g. waste separation), and a timetable for implementation of pollution control and waste management action plans in Namibia.
- iv) Propose legislation and oversee the development and implementation of a waste taxation system/(green taxes) that would provide economic incentives for integrated waste management.
- v) Create and/or strengthen a national pollution control and waste management institution that will provide pollution control and waste management services to Regional Governments and Local Authorities or outsource these services to local entrepreneurs.
- vi) Conduct periodic assessments of waste producing industries to ensure that Best Available Technology (BAT) and Best Environmental Practices (BEP) for waste minimisation and recycling-friendly technologies are being implemented.

- (III) All institutions and operations that produce, use or manage hazardous waste and all waste deposit sites shall be registered with the 'COMPETENT AUTHORITY' or any other national institution as proposed by existing national policies such as the Biosafety Policy.

(IV) All owners of industries that produce or use products that emanate 'hazardous waste' shall identify and register an agency with the 'COMPETENT AUTHORITY' that will be responsible for their pollution control and waste management programme.

(V) All waste producers shall seek to implement the Best Available Technology for waste elimination and/or minimisation and recycling-friendly technologies in their production systems, and a waste awareness programme for their employees and clients (e.g. the general public).

*The above would ensure increased social benefits through the reduction of health risks, environmental benefits, and economic benefits for the waste producer by increasing the efficiency of their operations .*

(iv) All owners of industries that produce or use products that contain hazardous waste shall identify and register their facilities with the COMPETENT AUTHORITY and will be responsible for their



of their operations.



EA

(VI) All 'hazardous waste'- producing/ or utilising activities shall be subject to an Environmental Assessment (EA) as stipulated in Namibia's Environmental Assessment Policy. The EA should, among others:

- i) Identify all wastes and likely consequences of wastes that would be produced by the activities (i.e. including a Risk Assessment), and the most effective treatment methods that are currently applied in the treatment of such waste (best practices):
- ii) Identify relevant indicators of environmental health that could be used for monitoring.
- iii) Recommend environmentally safe measures, [Best environmental Practices (BEP)] and guidelines to reduce, reclaim, recycle and dispose of these wastes:
- iv) Investigate the potential and economic value of reducing waste production (waste minimisation), reclamation and recycling.

(VII) All industries that produce 'hazardous waste' or ones that use products that emanate 'hazardous waste' shall comply with recommendations as set out in their Environmental Assessment and Risk Assessment reports.

WHO WOULD  
BE THEIR WASTE  
MANAGEMENT  
AUTHORITIES -

- (VIII) The waste producers, users of products that emanate from 'hazardous waste' and their waste management authorities shall bear the cost of:
- i) Any additional investigations on the impacts of their wastes as recommended by the 'COMPETENT AUTHORITY'.
  - ii) Any waste treatment operations such as clean-ups (e.g. soil or water de-contamination) that are necessitated by their activities.
  - iii) All the consequences of their waste disposal (e.g. disease outbreak or proliferation of genetically modified products) and any monitoring exercises to determine long-term effects on the human and natural environments that might be required by the 'COMPETENT AUTHORITY'

*Unless otherwise agreed by the Government of the Republic of Namibia.*

**International  
CONVENTIONS  
& PROTOCOLS**

The Government of The  
Republic of

Namibia further declares the following as  
relevant to the  
**POLLUTION CONTROL AND WASTE  
MANAGEMENT POLICY:**

- a) **The Basel convention,** including any amendments, appendices and resolutions thereto, shall apply in regulating the trans-boundary movement of hazardous wastes and their disposal.
- b) **The Rotterdam Convention** on Hazardous Chemicals including any amendments, appendices and resolutions thereto shall apply in regulating the International Trade, Distribution and Use of Pesticides and industrial chemicals that are covered in this convention.
- c) **The Stockholm Convention** on Persistent Organic Pollutants (POPs) including any amendments, appendices and resolutions thereto shall apply in regulating trade in; transport, use and disposal of POPs.
- d) **The Framework Convention on Global Climate Change,** including any amendments, appendices and resolutions thereto, shall apply in regulating the production and emission of greenhouse gases.
- e) **The Convention on Biological Diversity,** including any amendments, appendices and resolutions thereto, shall apply in regulating pollution and wastes that might affect the Namibia's biological diversity.
- f) The 'Precautionary Principle' and 'polluter-pays principle' (below) shall apply.

POLLUTION CONTROL AND WASTE MANAGEMENT  
PROCEDURE

Principle 15 of the Rio Declaration (The Precautionary Principle) states that

*"In order to protect the environment, the precautionary approach shall be widely applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."*

The Polluter Pays Principle is an economic policy developed in the early 1970's to distribute the costs of pollution to industry and to the consumer, and in so doing maintain the environment in an acceptable state and eliminate hidden subsidies that could distort trade.

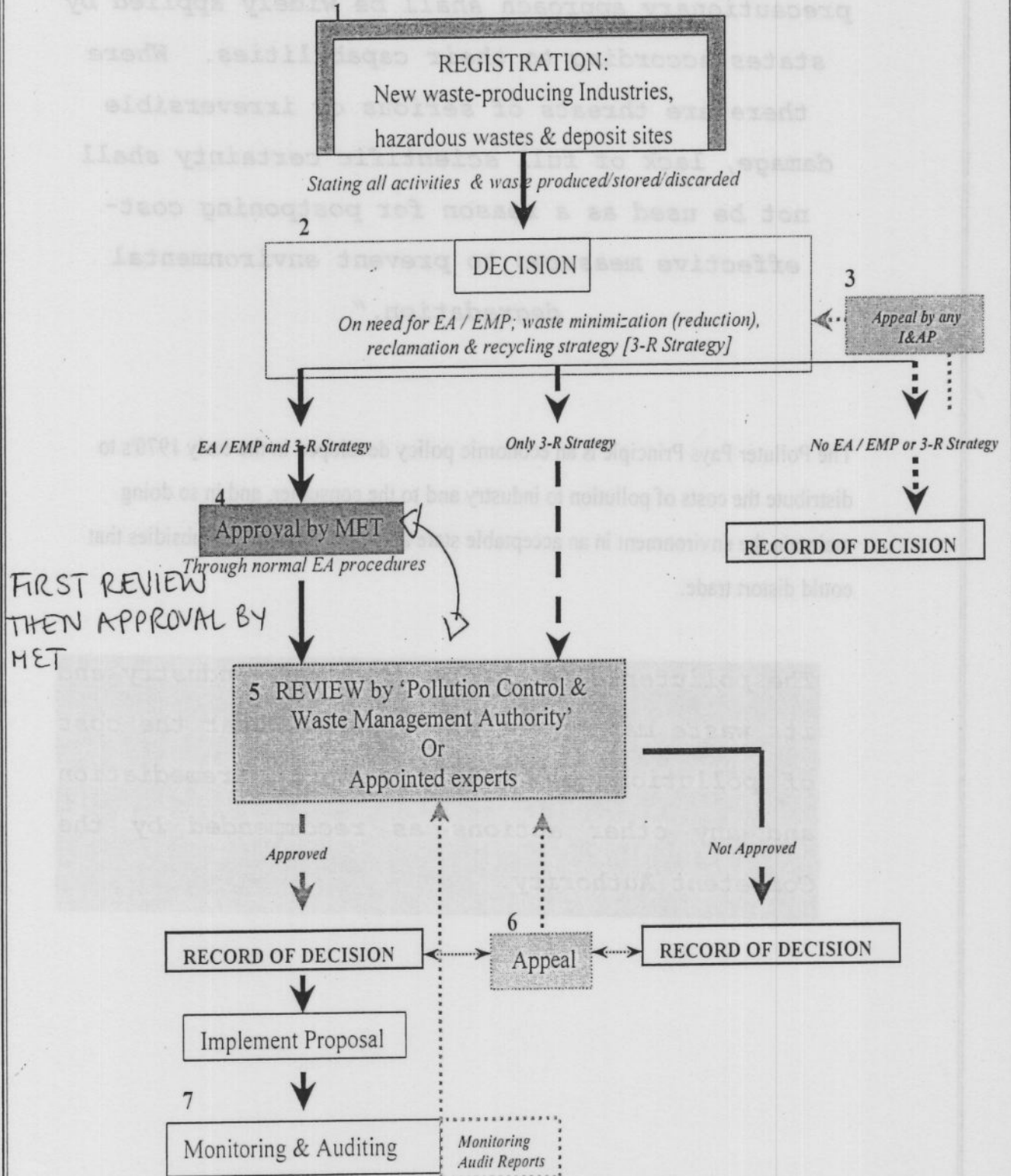
*The polluter- i.e. waste producing industry and its waste management agency shall bear the cost of pollution prevention, control, remediation and any other actions as recommended by the Competent Authority.*



### 3 POLLUTION CONTROL AND WASTE MANAGEMENT PROCEDURE

#### Procedure

#### 3.1 FLOW DIAGRAM:



### 3.2 EXPLANATION OF PROCEDURE

IS IT AN AGENCY THAT DEAL WITH WASTE MANAGEMENT FOR THE WASTE PRODUCING AGENCY?

1. It is required that all waste-producing industry and/or ones that use products that emanate 'hazardous waste' register themselves as well as at least one proposed agency that will deal with waste management and pollution control with the 'COMPETENT AUTHORITY'. The registry shall state the nature of the activities, the product used and/or waste material to be produced, stored and discarded as well as their potential adverse effects. All national hazardous waste disposal sites shall also be registered with the 'COMPETENT AUTHORITY'.

2. The 'COMPETENT AUTHORITY' or its Secretariat shall decide and forward the decision to the applicant with regards to whether an Environmental Assessment and Environmental Management Plan would be required as well as a waste minimization (reduction), reclamation & recycling strategy- 3-R Strategy.

3. Any decision by the 'COMPETENT AUTHORITY' for any waste-producing activity to forgo an Environmental Assessment, have an EMP or 3-R Strategy can be appealed by any interested and affected parties (I&AP) such as individuals, companies or authorities. Such an appeal should provide reliable information to justify the proposed alternative ruling.

4 & 5. The Environmental Assessment and Environmental Management Plan shall be evaluated by the responsible authority in the Ministry of Environment & Tourism (Directorate of Environmental Affairs). The 'COMPETENT AUTHORITY' or any other persons or institutions appointed by this authority shall evaluate the 3-R strategy.

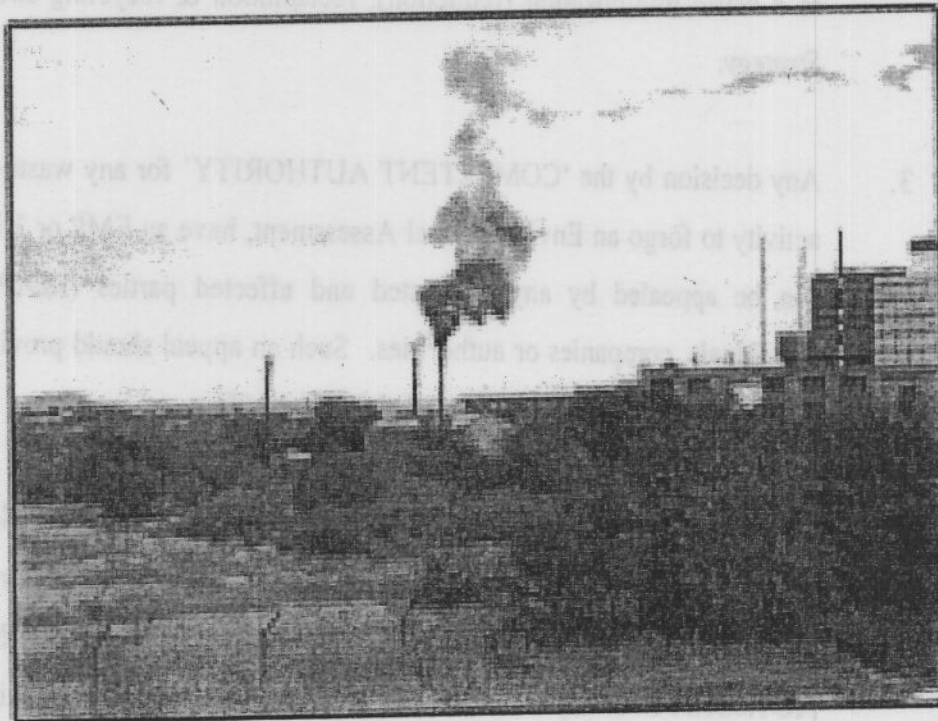
6. Any interested and affected parties such as individuals, companies or authorities can appeal a decision of the 'COMPETENT AUTHORITY' with regards to approving or not approving an EA, EMP or 3-R Strategy. The appeal should provide reliable justification.

COULD THERE BE A TIME-LINE OR IS IT BETTER NOT TO HAVE ONE?

EXPLANATION OF PROCEDURE

7. The waste producing industry and its waste management agency shall continuously report to the 'COMPETENT AUTHORITY' on the performance of their 3-R Strategy, verification of impact predictions, efficiency of mitigation measures and compliance with all issues raised in the EA and EMP. Periodic independent assessments of all aspects of the development shall also be carried out at times as determined by the 'COMPETENT AUTHORITY'.

THE COST OF SUCH A PERIODIC ASSESSMENT/AUDIT CARRIED BY WASTE PRODUCING INDUSTRY



ALREADY STATED ABOVE

ALSO, THE COMPETENT AUTHORITY SHALL DETERMINE WHEN OR HOW OFTEN SUCH AN INDEPENDANT AUDIT SHOULD BE CARRIED OUT IF DEEMED NECESSARY -



**4 ANNEX A:**

4.1 A LIST OF SOME OF THE "HAZARDOUS CHEMICALS" that require an EA / EMP; waste minimization (reduction), reclamation & recycling strategy [3-R Strategy]

(Based on The Basel & Rotterdam Conventions, Framework Convention on Climate Change and The Stockholm Convention on Persistent Organic Pollutants).

<i>Aldrin</i>	<i>Binapacryl</i>
<i>Captafol</i>	<i>Chlordane</i>
<i>Chlordimeform</i>	<i>Chlorobenzilate</i>
<i>Crocidolite</i>	<i>Dichlorodiphenyltrichloroethane (DDT)</i>
<i>Dieldrin</i>	<i>Dinoseb and dinoseb salts</i>
<i>Dioxins</i>	<i>1,2-dibromoethane (EDB)</i>
<i>Edrine</i>	<i>Ethylene dichloride</i>
<i>Ethylene oxide</i>	<i>Fluoroacetamide</i>
<i>Furans</i>	<i>HCH (mixed isomers)</i>
<i>Heptachlor</i>	<i>Hexachlorobenzene</i>
<i>Lindane</i>	<i>Mercury compounds,</i> including inorganic mercury compounds, alkyl mercury compounds and alkyloxyalkyl and aryl mercury compounds
<i>Mirex</i>	<i>Methamidophos</i> (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)
<i>Methyl-parathion</i> [emulsifiable concentrates (EC) with 19.5%, 40%, 50%, 60% active ingredient and dusts containing 1.5%, 2% and 3% active ingredient]	<i>Monocrotophos</i> (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)

ANNEX A

ALL A LIST OF SOME OF THE "HAZARDOUS CHEMICALS" AS REQUIRED  
 IN EA EMP, waste minimization (reduction), reclamation & recycling  
 strategy (3-R Strategy)

(Based on The Basel & Rotterdam Conventions Framework Convention on Climate  
 Change and the Stockholm Convention on Persistent Organic Pollutants)

<p><i>Parathion</i>                  [all formulations -aerosols,                  dustable powder (DP),                  emulsifiable concentrate                  (EC), granules (GR) and wettable                  powders (WP) - of this substance                  are included,                  except capsule suspensions (CS)]</p>	<p><i>Pentachlorophenol</i></p>
<p><i>Phosphamidon</i>                  (Soluble liquid formulations of                  the substance that exceed 1000 g                  active ingredient/l)</p>	<p><i>Polybrominated biphenyls (PBB)</i>                  [ hexa, octa and deca ]</p>
<p><i>Polychlorinated biphenyls (PCB)</i></p>	<p><i>Polychlorinated terphenyls (PCT)</i></p>
<p><i>Toxaphene</i></p>	<p><i>Tris (2,3-dibromopropyl) phosphate</i></p>

## 4.2 GENERAL CATEGORIES OF WASTES TO BE CONTROLLED (Based on The Basel Convention)

### Waste Streams

- 1 Clinical wastes from medical care in hospitals, medical centers and clinics
- 2 Wastes from the production and preparation of pharmaceutical products
- 3 Waste pharmaceuticals, drugs and medicines
- 4 Wastes from the production, formulation and use of biocides, phytopharmaceuticals, agricultural chemicals including genetically modified organisms and their derivatives.
- 5 Wastes from the manufacture, formulation and use of wood preserving chemicals
- 6 Wastes from the production, formulation and use of organic solvents
- 7 Wastes from heat treatment and tempering operations containing cyanides
- 8 Waste mineral oils unfit for their originally intended use
- 9 Waste oils/water, hydrocarbons/water mixtures, emulsions
- 10 Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)
- 11 Waste tarry residues arising from refining, distillation and any pyrolytic treatment
- 12 Wastes from production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish
- 13 Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives
- 14 Waste chemical substances arising from research and development or teaching activities which are not identified and/or are new and whose effects on man and/or the environment are not known
- 15 Wastes of an explosive nature not subject to other legislation
- 16 Wastes from production, formulation and use of photographic chemicals and processing materials
- 17 Wastes resulting from surface treatment of metals and plastics
- 18 Residues arising from industrial waste disposal operations



GENERAL CATEGORIES OF WASTES TO BE CONTROLLED

Wastes having as constituents:

- |    |  |               |
|----|--|---------------|
| 19 | Metal carbonyls  | Waste streams |
| 20 | Beryllium; beryllium compounds   | 1             |
| 21 | Hexavalent chromium compounds  | 2             |
| 22 | Copper compounds   | 3             |
| 23 | Zinc compounds   | 4             |
| 24 | Arsenic; arsenic compounds   | 5             |
| 25 | Selenium; selenium compounds   | 6             |
| 26 | Cadmium; cadmium compounds   | 7             |
| 27 | Antimony; antimony compounds   | 8             |
| 28 | Tellurium; tellurium compounds   | 9             |
| 29 | Mercury; mercury compounds   | 10            |
| 30 | Thallium; thallium compounds   | 11            |
| 31 | Lead; lead compounds   | 12            |
| 32 | Inorganic fluorine compounds excluding calcium fluoride                | 13            |
| 33 | Inorganic cyanides   | 14            |
| 34 | Acidic solutions or acids in solid form                                | 15            |
| 35 | Basic solutions or bases in solid form                                 | 16            |
| 36 | Asbestos (dust and fibres)   | 17            |
| 37 | Organic phosphorus compounds   | 18            |
| 38 | Organic cyanides   | 19            |
| 39 | Phenols; phenol compounds including chlorophenols                      | 20            |
| 40 | Ethers   | 21            |
| 41 | Halogenated organic solvents   | 22            |
| 42 | Organic solvents excluding halogenated solvents                        | 23            |
| 43 | Any congener of polychlorinated dibenzo-furan                          | 24            |
| 44 | Any congener of polychlorinated dibenzo-p-dioxin                       | 25            |
| 45 | Organohalogen compounds other than substances referred to in this list | 26            |

## 4.2 GENERAL LIST OF HAZARDOUS CHARACTERISTICS

(Based on The Basel Convention)

*Capable*, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the characteristics listed above.

### *Corrosives*

Substances or wastes which, by chemical action, will cause severe damage when in contact with living tissue, or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport; they may also cause other hazards.

### *Ecotoxic*

Substances or wastes which if released present or may present immediate or delayed adverse impacts to the environment by means of bioaccumulation and/or toxic effects upon biotic systems.

### *Explosive*

An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such speed as to cause damage to the surroundings.

### *Flammable liquids*

The word "flammable" has the same meaning as "inflammable." Flammable liquids are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers, etc., but not including substances or wastes otherwise classified on account of their dangerous characteristics) which give off a flammable vapour at temperatures of not more than 60.5 C, closed-cup test, or not more than 65.6C, open-cup test. (Since the results of open-cup tests and of closed-cup tests are not strictly comparable and even individual results by the same test are often variable, regulations varying from the above figures to make allowance for such differences would be within the spirit of this definition)

*Flammable solids*

Solids, or waste solids, other than those classed as explosives, which under conditions encountered in transport are readily combustible, or may cause or contribute to fire through friction.

*Infectious substances*

Substances or wastes containing viable micro organisms or their toxins which are known or suspected to cause disease in animals or humans.

*Liberation of toxic gases in contact with air or water*

Substances or wastes which, by interaction with air or water, are liable to give off toxic gases in dangerous quantities.

*Organic Peroxides*

Organic substances or wastes, which contain the bivalent-O-O- structure, are thermally unstable substances which may undergo exothermic self-accelerating decomposition.

*Oxidizing*

Substances or wastes which, while in themselves not necessarily combustible, may, generally by yielding oxygen cause, or contribute to, the combustion of other materials.

*Poisonous (Acute)*

Substances or wastes liable either to cause death or serious injury or to harm health if swallowed or inhaled or by skin contact.

*Substances or wastes liable to spontaneous combustion*

Substances or wastes that are liable to spontaneous heating under normal conditions encountered in transport, or to heating up on contact with air, and being then liable to catch fire.



*Substances or wastes which, in contact with water emit flammable gases*

Substances or wastes which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

*Toxic (Delayed or chronic)*

Substances or wastes which, if they are inhaled or ingested or if they penetrate the skin, may involve delayed or chronic effects, including carcinogenicity.

**5 ANNEX B: SUMMARY OF SOME OF THE GLOBAL  
CONVENTIONS & PROTOCOLS PERTAINING TO  
POLLUTION CONTROL & WASTE MANAGEMENT  
THAT NAMIBIA IS SIGNATORY TO or PLANS TO  
RATIFY:**

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# UNFCCC

## Background

While the world's climate has always varied naturally, the vast majority of scientists now believe that rising concentrations of "greenhouse gases" in the earth's atmosphere, resulting from economic and demographic growth over the last two centuries since the industrial revolution, are overriding this natural variability and leading to potentially irreversible climate change. Examples of greenhouse gases that are affected by human activities include Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous Oxide and its derivatives (N<sub>2</sub>O), Chlorofluorocarbons (CFC), Hydrofluorocarbons (HFC) and Perfluoromethane (CF<sub>4</sub>).

Greenhouse gases control energy flows in the atmosphere by absorbing infrared radiation emitted by the earth. They act like a blanket to keep the earth's surface some 20°C warmer than it would be if the atmosphere contained only oxygen and nitrogen. The trace gases that cause this natural greenhouse effect comprise less than 1% of the atmosphere.



The Third Assessment Report of the intergovernmental Panel on Climate Change (IPCC), released in 2001, confirms that "an increasing body of observations gives a collective picture of a warming world" with "new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities". Updating the findings of its 1995 Second Assessment Report, the IPCC projects that the climate will change more rapidly than previously expected. Global mean surface temperatures are projected to increase by 1.4 - 5.8°C by 2100, the fastest rate of change since the end of the last ice age. Global mean sea levels are expected to rise by 9 - 88 cm by 2100, flooding many low-lying coastal areas. Changes in rainfall patterns are also predicted, increasing the threat of drought or floods in many regions.

Overall, the climate is expected to become more variable, with a greater threat of extreme weather events, such as intense storms and heat waves. There is also the risk of abrupt and large-scale "surprises", for instance, the weakening or complete shut down of the ocean thermohaline circulation (such as the Gulf Stream), or the collapse of the Greenland and West Antarctic ice sheets. While the likelihood that such devastating events will happen over the next hundred years is low, it increases with the rate and scale of global warming.

In 1992, the world's governments adopted the UN Framework Convention on Climate Change. Five years later, on 11 December 1997, governments took a further step forwards and adopted the landmark Kyoto Protocol. Building on the framework of the Convention, the Kyoto Protocol broke new ground with its legally binding constraints on greenhouse gas emissions and its innovative "mechanisms" [e.g. joint implementation, the clean development mechanism (CDM) and emissions trading] aimed at cutting the cost of curbing emissions.

Today, 186 countries (including the European Community) are Parties to the Convention, more than most any other environmental treaty.