

Environmentally sound management of hazardous wastes including prevention of illegal international traffic in hazardous wastes

Effective control of the generation, storage, treatment, recycling and reuse, transport, recovery and disposal of hazardous wastes is of paramount importance for proper health, environmental protection and natural resource management, and sustainable development. This will require the active cooperation and participation of the international community, Governments and industry. Industry, as referred to in this paper, shall include large industrial enterprises, including transnational corporations and domestic industry.

Prevention of the generation of hazardous wastes and the rehabilitation of contaminated sites are the key elements, and both require knowledge, experienced people, facilities, financial resources and technical and scientific capacities.

The activities outlined in the present chapter are very closely related to, and have implications for, many

of the programme areas described in other chapters, so that an overall integrated approach to hazardous waste management is necessary.

There is international concern that part of the international movement of hazardous wastes is being carried out in contravention of existing national legislation and international instruments to the detriment of the environment and public health of all countries, particularly developing countries.

In section I of resolution 44/226 of 22 December 1989, the General Assembly requested each regional commission, within existing resources, to contribute to the prevention of the illegal traffic in toxic and dangerous products and wastes by monitoring and making regional assessments of that illegal traffic and its environmental and health implications. The Assembly also requested the regional commissions to

The human race has reached a critical stage in its development. Our environment is being polluted at an escalating pace and is threatened by climate change and habitat destruction. Development is essential but it must take into account the finite resources that we have at our disposal. To achieve this aim involves changing from consumptive development in which large environmental debts are incurred to sustainable development with no environmental debts; it involves global planning, understanding, cooperation and mutual support. It is my sincere hope that UNCED will prove to be the springboard for a new global outlook to responsible environmental management and sustainable development.

Sam Nujoma
President
Republic of Namibia

interact among themselves and cooperate with the United Nations Environment Programme (UNEP), with a view to maintaining efficient and coordinated monitoring and assessment of the illegal traffic in toxic and dangerous products and wastes.

Overall objective Within the framework of integrated life-cycle management, the overall objective is to prevent to the extent possible, and minimize, the generation of hazardous wastes, as well as to manage those wastes in such a way that they do not cause harm to health and the environment.

Overall targets The overall targets are:

- a** Preventing or minimizing the generation of hazardous wastes as part of an overall integrated cleaner production approach; eliminating or reducing to a minimum transboundary movements of hazardous wastes, consistent with the environmentally sound and efficient management of those wastes; and ensuring that environmentally sound hazardous waste management options are pursued to the maximum extent possible within the country of origin (the self-sufficiency principle). The transboundary movements that take place should be on environmental and economic grounds and based upon agreements between the States concerned;
- b** Ratification of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the expeditious elaboration of related protocols, such as the protocol on liability and compensation, mechanisms and guidelines to facilitate the implementation of the Basel Convention;
- c** Ratification and full implementation by the countries concerned of the Bamako Convention on the Ban on the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa and the expeditious elaboration of a protocol on liability and compensation;
- d** Elimination of the export of hazardous wastes to countries that, individually or through international agreements, prohibits the import of such wastes, such as, the contracting parties to the Bamako Convention, the fourth Lomé Convention or other relevant conventions, where such prohibition is provided for.

A Promoting the prevention and minimization of hazardous waste

Basis for action Human health and environmental quality are undergoing continuous degradation by the increasing amount of hazardous wastes being produced. There are increasing direct and indirect costs to society and to individual citizens in connection with the generation, handling and disposal of such wastes. It is therefore crucial to enhance knowledge and information on the economics of prevention and management of hazardous wastes, including the impact in relation to the employment and environmental benefits, in order to ensure that the necessary capital investment is made available in development programmes through economic incentives. One of the first priorities in hazardous waste management is minimization, as part of a broader approach to changing industrial processes and consumer patterns through pollution prevention and cleaner production strategies.

Among the most important factors in these strategies is the recovery of hazardous wastes and their transformation into useful material. Technology application, modification and development of new low-waste technologies are therefore currently a central focus of hazardous waste minimization.

Objectives

- a** To reduce the generation of hazardous wastes, to the extent feasible, as part of an integrated cleaner production approach;
 - b** To optimize the use of materials by utilizing, where practicable and environmentally sound, the residues from production processes;
 - c** To enhance knowledge and information on the economics of prevention and management of hazardous wastes.
- To achieve those objectives, and thereby reduce the impact and cost of industrial development, countries that can afford to adopt the requisite technologies without detriment to their development should establish policies that include:
- a** Integration of cleaner production approaches and hazardous waste minimization in all planning, and the adoption of specific goals;
 - b** Promotion of the use of regulatory and market mechanisms;
 - c** Establishment of an intermediate goal for the stabilization of the quantity of hazardous waste generated;
 - d** Establishment of long-term programmes and policies including targets where appropriate for reducing the amount of hazardous waste produced per unit of manufacture;
 - e** Achievement of a qualitative improvement of waste streams, mainly through activities aimed at reducing their hazardous characteristics;
 - f** Facilitation of the establishment of cost-effective policies and approaches to hazardous waste prevention and management, taking into consideration the state of development of each country.

Management-related activities

- a** Governments should establish or modify standards or purchasing specifications to avoid discrimination against recycled materials, provided that those materials are environmentally sound;
- b** Governments, according to their possibilities and with the help of multilateral cooperation, should provide economic or regulatory incentives, where appropriate, to stimulate industrial innovation towards cleaner production methods, to encourage industry to invest in preventive and/or recycling technologies so as to ensure environmentally sound management of all hazardous wastes, including recyclable wastes, and to encourage waste minimization investments;
- c** Governments should intensify research and development activities on cost-effective alternatives for processes and substances that currently result in the generation of hazardous wastes that pose particular problems for environmentally sound disposal or treatment, the possibility of ultimate phase-out of those substances that present an unreasonable or otherwise unmanageable risk and are toxic, persistent and bio-accumulative to be considered as soon as practicable. Emphasis should be given to alternatives that could be economically accessible to developing countries;
- d** Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations and industries, as appropriate, should support the establishment of domestic facilities to handle hazardous wastes of domestic origin;
- e** Governments of developed countries should promote the transfer of environmentally sound technologies and know-how on clean technologies and low-waste production to developing countries in conformity with chapter 34, which will bring about changes to sustain innovation. Governments should cooperate with industry to develop guidelines and codes of conduct, where appropriate, leading to cleaner production through sectoral trade industry associations.

Minimization is the first priority in hazardous waste management. Where its use is found to be necessary careful management of its disposal is essential. Ideally it should be transformed into re-usable material.



f Governments should encourage industry to treat, recycle, reuse and dispose of wastes at the source of generation, or as close as possible thereto, whenever hazardous waste generation is unavoidable and when it is both economically and environmentally efficient for industry to do so;

g Governments should encourage technology assessments, for example through the use of technology assessment centres;

h Governments should promote cleaner production through the establishment of centres providing training and information on environmentally sound technologies;

i Industry should establish environmental management systems, including environmental auditing of its production or distribution sites, in order to identify where the installation of cleaner production methods is needed;

j A relevant and competent United Nations organization should take the lead, in cooperation with other organizations, to develop guidelines for estimating the costs and benefits of various approaches to the adoption of cleaner production and waste minimization and environmentally sound management of hazardous wastes, including rehabilitation of contaminated sites, taking into account, where appropriate, the report of the 1991 Nairobi meeting of government-designated experts on an international strategy and an action programme, including technical guidelines for the environmentally sound management of hazardous wastes; in particular in the context of the work of the Basel Convention, being developed under the UNEP secretariat;

k Governments should establish regulations that lay down the ultimate responsibility of industries for environmentally sound disposal of the hazardous wastes their activities generate.

Financing and cost evaluation \$750 million from the international community on grant or concessional terms.

B Promoting and strengthening institutional capacities in hazardous waste management

Basis for action Many countries lack the national capacity to handle and manage hazardous wastes.

This is primarily due to inadequate infrastructure, deficiencies in regulatory frameworks, insufficient education and training programmes and lack of coordination between the different ministries and institutions involved in various aspects of waste management. In addition, there is a lack of knowledge about environmental contamination and pollution and the associated health risk from the exposure of populations, especially women and children, and ecosystems to hazardous wastes; assessment of risks; and the characteristics of wastes. Steps need to be taken immediately to identify populations at high risk and to take remedial measures, where necessary. One of the main priorities in ensuring environmentally sound management of hazardous wastes is to provide awareness, education and training programmes covering all levels of society. There is also a need to undertake research programmes to understand the nature of hazardous wastes, to identify their potential environmental effects and to develop technologies to safely handle those wastes. Finally, there is a need to strengthen the capacities of institutions that are responsible for the management of hazardous wastes.

Objectives

a To adopt appropriate coordinating, legislative and regulatory measures at the national level for the environmentally sound management of hazardous wastes, including the implementation of international and regional conventions;

b To establish public awareness and information programmes on hazardous waste issues and to ensure that basic education and training programmes are provided for industry and government workers in all countries;

c To establish comprehensive research programmes on hazardous wastes in countries;

d To strengthen service industries to enable them to handle hazardous wastes, and to build up international networking;

e To develop endogenous capacities in all developing countries to educate and train staff at all levels in environmentally sound hazardous waste handling and monitoring and in environmentally sound management;

f To promote human exposure assessment with

An intricate web of interdependence unites the global habitat and plant and animal species in a relationship that guarantees the continuity of all. However, human development has launched us on a perilous course. UNCED is tangible proof that the world has awoken to the dark clouds of environmental degradation gathering overhead. What has been done can yet be undone. We all know that the flame of the world's environment has grown dim in recent years. We now have a golden opportunity to fan it back to brightness, thus restoring the splendour of God's greatest legacy to man. Let us not, for the Earth's sake, squander it.

Aihaji Sir Dawda Kairaba Jawara
President
Republic of the Gambia

respect to hazardous waste sites and identify the remedial measures required;

- g** To facilitate the assessment of impacts and risks of hazardous wastes on human health and the environment by establishing appropriate procedures, methodologies, criteria and/or effluent-related guidelines and standards;
- h** To improve knowledge regarding the effects of hazardous wastes on human health and the environment;
- i** To make information available to Governments and to the general public on the effects of hazardous wastes, including infectious wastes, on human health and the environment.

Management-related activities

- a** Governments should establish and maintain inventories, including computerized inventories, of hazardous wastes and their treatment/disposal sites, as well as of contaminated sites that require rehabilitation, and assess exposure and risk to human health and the environment; they should also identify the measures required to clean up the disposal sites. Industry should make the necessary information available;
- b** Governments, industry and international organizations should collaborate in developing guidelines and easy-to-implement methods for the characterization and classification of hazardous wastes;
- c** Governments should carry out exposure and health assessments of populations residing near uncontrolled hazardous waste sites and initiate remedial measures;
- d** International organizations should develop improved health-based criteria, taking into account national decision-making processes, and assist in the preparation of practical technical guidelines for the prevention, minimization and safe handling and disposal of hazardous wastes;
- e** Governments of developing countries should encourage interdisciplinary and intersectoral groups, in cooperation with international organizations and agencies, to implement training and research activities related to evaluation, prevention and control of hazardous waste health risks. Such groups should serve as models to develop similar regional programmes;
- f** Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations as appropriate, should encourage as far as possible the establishment of combined treatment/disposal facilities for hazardous wastes in small- and medium-sized industries;
- g** Governments should promote identification and clean-up of sites of hazardous wastes in collaboration with industry and international organizations. Technologies, expertise and financing should be available for this purpose, as far as possible and when appropriate with the application of the "polluter pays" principle;
- h** Governments should ascertain that their military establishments conform to their nationally applicable environmental norms in the treatment and disposal of hazardous wastes.

Financing and cost evaluation \$18.5 billion on a global basis with about \$3.5 billion related to developing countries, including about \$500 million from the international community on grant or concessional terms.

C Promoting and strengthening international cooperation in the management of transboundary movements of hazardous

Basis for action In order to promote and strengthen international cooperation in the management, including control and monitoring, of transboundary movements of hazardous wastes, a precautionary

approach should be applied. There is a need to harmonize the procedures and criteria used in various international and legal instruments. There is also a need to develop or harmonize existing criteria for identifying wastes dangerous to the environment and to build monitoring capacities.

Objectives

- a** To facilitate and strengthen international cooperation in the environmentally sound management of hazardous wastes, including control and monitoring of transboundary movements of such wastes, including wastes for recovery, by using internationally adopted criteria to identify and classify hazardous wastes and to harmonize relevant international legal instruments;
- b** To adopt a ban on or prohibit, as appropriate, the export of hazardous wastes to countries that do not have the capacity to deal with those wastes in an environmentally sound way or that have banned the import of such wastes;
- c** To promote the development of control procedures for the transboundary movement of hazardous wastes destined for recovery operations under the Basel Convention that encourage environmentally and economically sound recycling options.

Management-related activities Strengthening and harmonizing criteria and regulations Governments, according to their capacities and available resources and with the cooperation of United Nations and other relevant organizations, as appropriate, should:

- a** Incorporate the notification procedure called for in the Basel Convention and relevant regional conventions, as well as in their annexes, into national legislation;
- b** Formulate, where appropriate, regional agreements such as the Bamako Convention regulating the transboundary movement of hazardous wastes;
- c** Help promote the compatibility and complementarity of such regional agreements with international conventions and protocols;
- d** Strengthen national and regional capacities and capabilities to monitor and control the transboundary movement of hazardous wastes;
- e** Promote the development of clear criteria and guidelines, within the framework of the Basel Convention and regional conventions, as appropriate, for environmentally and economically sound operation in resource recovery, recycling reclamation, direct use or alternative uses and for determination of acceptable recovery practices, including recovery levels where feasible and appropriate, with a view to preventing abuses and false presentation in the above operations;
- f** Consider setting up, at national and regional levels, as appropriate, systems for monitoring and surveillance of the transboundary movements of hazardous wastes;
- g** Develop guidelines for the assessment of environmentally sound treatment of hazardous wastes;
- h** Develop guidelines for the identification of hazardous wastes at the national level, taking into account existing internationally – and, where appropriate, regionally – agreed criteria and prepare a list of hazard profiles for the hazardous wastes listed in national legislation;
- i** Develop and use appropriate methods for testing, characterizing and classifying hazardous wastes and adopt or adapt safety standards and principles for managing hazardous wastes in an environmentally sound way.

Implementing existing agreements Governments are urged to ratify the Basel Convention and the Bamako Convention, as applicable, and to pursue the

A leisurely canoeing trip on the river is marred by the debris and rubbish. The water is also heavily contaminated with phosphates which results in eutrophication.

expeditious elaboration of related protocols, such as protocols on liability and compensation, and of mechanisms and guidelines to facilitate the implementation of the Conventions.

Financing and cost evaluation Because this programme area covers a relatively new field of operation and because of the lack so far of adequate studies on costing of activities under this programme, no cost estimate is available at present. However, the costs for some of the activities related to capacity-building that are presented under this programme could be considered to have been covered under the costing of programme area B above.

The interim secretariat for the Basel Convention should undertake studies in order to arrive at a reasonable cost estimate for activities to be undertaken initially until the year 2000.

D Preventing illegal international traffic in hazardous wastes

Basis for action The prevention of illegal traffic in hazardous wastes will benefit the environment and public health in all countries, particularly developing countries. It will also help to make the Basel Convention and regional international instruments, such as the Bamako Convention and the fourth Lomé Convention, more effective by promoting compliance with the controls established in those agreements. Article IX of the Basel Convention specifically addresses the issue of illegal shipments of hazardous wastes. Illegal traffic of hazardous wastes may cause serious threats to human health and the environment and impose a special and abnormal burden on the countries that receive such shipments.

Effective prevention requires action through effective monitoring and the enforcement and imposition of appropriate penalties.

Objectives

- a** To reinforce national capacities to detect and halt any illegal attempt to introduce hazardous wastes into the territory of any State in contravention of national legislation and relevant international legal instruments;
- b** To assist all countries, particularly developing countries, in obtaining all appropriate information concerning illegal traffic in hazardous wastes;



c To cooperate, within the framework of the Basel Convention, in assisting countries that suffer the consequences of illegal traffic.

Management-related activities Governments, according to their capacities and available resources and with the cooperation of the United Nations and other relevant organizations, as appropriate, should:

- a** Adopt, where necessary, and implement legislation to prevent the illegal import and export of hazardous wastes;
- b** Develop appropriate national enforcement programmes to monitor compliance with such legislation, detect and deter violations through appropriate penalties and give special attention to those who are known to have conducted illegal traffic in hazardous wastes and to hazardous wastes that are particularly susceptible to illegal traffic.