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## 7 Information on Effects on Health/Environment

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### All Regions/Countries, Parties of the Basel Convention

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#### UN Region: Africa

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##### **Burundi**

2007

##### **Egypt**

2007 There are difficulties to have a validated and accredited data in terms of effect of hazardous waste on human health, at the national level there are many institutions involved in studying and analyzing this effect, some of them are listed below:

- 1.Higher Institute for public health – Alexandria University.
- 2.Industrial Medicine Department, Faculty of Medicine – Cairo University.
- 3.Ministry of health.

##### **Gambia**

2007

Information is not available.

##### **Madagascar**

2007

Les statistiques, études épidémiologiques concernant les effets en matière de santé professionnelles n'est pas encore disponible car les données s'éparpillent sur les institutions ci-dessous:

- Ministère de la Recherche Scientifique
- CNRE: Centre National de Recherche sur l'Environnement, Antananarivo-Madagascar.
- INSTN : Institut National des Sciences et Techniques Nucléaires, Université d'Antananarivo-Madagascar.

Ministère de la Santé

-CHU/HJRA: Centre Hospitalo-Universitaire/Joseph Ravoahangy Andrianavalona, Antananarivo-Madagascar.

##### **Mali**

2007 No scientific studies have been taken in Mali in this area.

##### **Morocco**

2007

Statistics are not yet available.

##### **Mozambique**

2007 The hazardous waste exported up to date include waste generated from Aluminum Smelter which are spent pot lining (SPL) and other refractory materials contaminated with fluoride, cyanide and other contaminants, alkali liquid waste from natural gas project and Lead Acid Batteries and metal scrub from a battery factory. According to the EIA presented and available in Ministry for the Coordination of Environmental Affairs the negative effect of fluoride and cyanide are well known. However, neither from a smelter nor from other industries there is information about any damage caused by these harmful materials.

##### **Nigeria**

2007 Detailed statistics yet to be compiled.

#### **Rwanda**

2007 Information is not available.

#### **Senegal**

2007 Not reported.

#### **South Africa**

2007 There is no information. These could be incidents as some times reported by media, but there is no formal consolidation of this information.

#### **Tunisia**

2007  
None.

#### **Uganda**

2007 No information.

#### **Zambia**

2007

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### *UN Region: Asia and Pacific*

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#### **Azerbaijan**

2007 State Statistical Committee of Azerbaijan collects data on generation, neutralization, transportation, recovery of toxic wastes and published this information in annual bulletins.

#### **Bahrain**

2007

#### **Cambodia**

2007  
Information is not available.

#### **China**

2007

#### **Cyprus**

2007 Information is not available.

#### **Indonesia**

2007

#### **Iran (Islamic Republic of)**

2007 Numerous and various projects carried out all around the country by academies and by the support of Department of Environment and Ministry of Health.

#### **Japan**

2007  
Information is not available.

#### **Kazakhstan**

2007 Influence of adverse factors of environment, including industrial and domestic has essential impact on state of republic's population health.  
In 2007 by clinical divisions of Scientific research institute of radiation medicine and ecology of the Ministry of Health care of RK are continued scheduled work on studying and an estimation of disease and death rate dynamics of the population of controllable territories of Kazakhstan. All received results on assessment of disease and death rates of exposed population were compared to parameters of control groups, and also with those on republic as a whole.

#### **Kuwait**

2007 Information is not available.

#### **Malaysia**

2007

#### **Pakistan**

2007 Although a number of studies have been undertaken to assess the impacts of particular components of hazardous waste on human health and the environment by universities and research organization, however, these studies are not centrally collected.

#### **Philippines**

2007

None.

#### **Qatar**

2007

#### **Singapore**

2007

Information is not available.

#### **Sri Lanka**

2007 Health impacts are covered in initial inventories prepared for the PCB, Pesticides and Dioxin and Furans.

#### **Thailand**

2007 Information is not available.

#### **United Arab Emirates**

2007

#### **Viet Nam**

2007 Limited information in this issue could be found in:  
Annual Report on State of the Environment, VEA  
Vietnam Environment Monitor 2004-Solid Waste (World Bank)  
For more information: website of VEA [www.nea.gov.vn](http://www.nea.gov.vn) (limited in English) or by direct contact with VEA.

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#### ***UN Region: Western Europe and Others***

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#### **Andorra**

2007

#### **Australia**

2007 Information may be obtained from the following websites:

<http://www.environment.gov.au/>  
<http://www.tams.act.gov.au/live/environment>  
<http://www.epa.nsw.gov.au/>  
<http://www.nreta.nt.gov.au/>  
<http://www.epa.qld.gov.au/>  
<http://www.epa.sa.gov.au/>  
<http://www.dtae.tas.gov.au/>  
<http://www.epa.vic.gov.au/>  
<http://www.dec.wa.gov.au/>

### **Austria**

2007 No specific information is available. General information can be obtained from the Federal Environment Agency via the Internet:

<http://www.ubavie.gv.at/umweltregister/toc.htm>

A meta-database (environment data catalogue) is available under:

<http://udk.umweltbundesamt.at/>

### **Belgium**

## 2007 FLANDERS

- Concept for practical guidelines to perform ecological risk assessment in Flanders, VITO, 2003

- Health risk assessment of dioxin emissions from municipal waste incinerators, VITO, 2001

- Waste management plans in Flanders about sludge, biological waste, household waste, demolition waste, industrial waste in small enterprises, high calory waste, shipping waste, OVAM

- Measurements of the dioxines emission values of car traffic, OVAM, 2003

- Research of endocrine disrupters in Flemish waters, 2003

- The project BeNeKempen is

a collaboration between OVAM and ABdK

(Active Soilmanagement for the Campine Region) from the Netherlands.

This cross-border project is co-financed with a financial contribution from the European program INTERREG III. The aim of the project BeNeKempen is to implement a cross-border solution and/or to manage the soil and water pollution by heavy metals caused by the former thermal zinc industry in the Campine region. The spread of ashes, slag, and muffles used in the construction of public roads, bicycle paths, and hardening of plots of land, the spreading of dust and the depositing of sludge during flooding or the dredging of rivers and streams have led to widespread distribution of the metals and the contamination. Different studies are carried out in the project covering zinc slag:

\* processing methods for zinc slag in roads and the effect on the environment from the construction works and transport are being studied;

\* removal of zinc slag and the deposit on dumpsites are being studied with special attention to effects on the dumpsite concerning the risk of leaching;

\* the necessary level of zinc slag removal in roads / pathways to eliminate significant effect on the environment is being determined.

## BRUSSELS

- The interface health-environment keeps up to date the information available on illness, their symptoms and possible links with the environment, direct or indirect exposure to wastes and toxic substances (i.e. saturnism, lung diseases, micronutrient deficiencies, fertility problems etc.). Data available on <http://www.ibgebim.be>.

- Statistical results concerning heavy metal intoxication, endocrine disturbance, fetal disease, chemical effects on the respiratory apparatus are only available with formal permission.- A report concerning PCB related topics was published, ("PCB's, a model for thinking and action"

- Cahiers de L'IBGE 18, 195 pp, 2001).

- Info concerning the 'green ambulance' is available on <http://www.ibgebim.be>.

## Canada

2007 Information on the relationship to hazardous wastes on human health and the environment can be found within recent Canadian statistics and studies including:

Hazardous Waste and Hazardous Recyclable Material Management in Canada 2005 Annual Statistics on their Exports and Imports: <http://www.ec.gc.ca/wmd-dgd/default.asp?lang=En&n=F345CA54-1>

The Priority Substances List Assessment Reports contain waste information: <http://www.ec.gc.ca/substances/ese/eng/psap/final/main.cfm>

The National Pollutant Release Inventory provides substance information containing on-site releases and transfers for disposal and recovery: [http://www.ec.gc.ca/pdb/npri/npri\\_si\\_e.cfm](http://www.ec.gc.ca/pdb/npri/npri_si_e.cfm)

## **Denmark**

2007 The Danish policy is based on prevention of exposure and the use of limit values.

Among other things, the policy is based on risk assessments on chemicals and material stream analysis.

The mass flow analysis on numerous substances can be found on the Danish EPA homepage ([www.mst/homepage.dk](http://www.mst/homepage.dk)) but unfortunately most of them are in Danish but all of them will have an English summary.

## **Finland**

2007

The requirements for the monitoring of e.g. the emissions and effects of industrial facilities (including waste disposal and recovery facilities) are specified case-by-case in the environmental permits granted for such facilities. With regard to landfills, for example, the monitoring shall include at least monitoring of quantity and quality of landfill water and surface water, quality and level of groundwater, and accumulation and migration of landfill gas. The monitoring reports are provided to the supervisory authorities.

There are no specific national statistics etc. available on the effects of hazardous wastes on human health and the environment. However, in the Finnish environmental administration, there are some 40 national environmental monitoring programmes in operation concerning, for example, emissions and discharges to the environment, state of the environment (air, water courses, groundwater, soil), generation and management of wastes and hazardous wastes, use of chemicals, natural resources, and biodiversity. The health of the Finnish population is also regularly monitored by the health authorities (see e.g. [www.ktl.fi](http://www.ktl.fi)).

## **Germany**

2007 There is a great variety of environmental monitoring in Germany which covers all environmental media (air, soil, sea, inland waters) and many different types of monitoring (e.g. Environmental Specimen Bank, integrated environmental monitoring, population studies). There is also a huge amount of waste analyzes data which have been collected in a waste analyzes database ([www.abanda.org](http://www.abanda.org)).

Data about all environmental issues are published in "Data on the environment" which is available in German (ISBN 3-503-09057-6) and English.

## **Greece**

2007 Information is not available.

## **Ireland**

2007

-Report of the Investigation into the Presence and Influence of Lead in the Silvermines Area of County Tipperary. Department of Agriculture, Food and Rural Development, 2000. Available from [www.agriculture.gov.ie](http://www.agriculture.gov.ie)

-National Hazardous Waste Management Plan 2008-2012 – Available from [www.epa.ie](http://www.epa.ie)

-Final Report of Expert Group for Silvermines, Co. Tipperary: Lead and Other Relevant Metals (2002) – Available from [www.epa.ie](http://www.epa.ie)

-Report of the Investigation into the presence of Lead and Other Heavy Metals in the Tynagh Mines Area – Available from [www.epa.ie](http://www.epa.ie)

-Irish EPA ERDTI Research programme. Methodology for the assessment of hazardous waste disposal sites

-[http://www.epa.ie/downloads/pubs/research/waste/EPA\\_hazardous\\_waste\\_sites\\_ERDT116synthesis.pdf](http://www.epa.ie/downloads/pubs/research/waste/EPA_hazardous_waste_sites_ERDT116synthesis.pdf)

-Irish EPA ERDTI Research Programme. Procedure for the identification of hazardous components of waste.

[http://www.epa.ie/downloads/pubs/research/waste/EPA\\_hazardous\\_waste\\_ERDTI12\\_main.pdf](http://www.epa.ie/downloads/pubs/research/waste/EPA_hazardous_waste_ERDTI12_main.pdf)

Irish EPA Current Research Programme (STRIVE). See theme B at attached link,

<http://www.epa.ie/downloads/pubs/research/STRIVE-%20low%20res%%20version%20for%20web%2009.10.071.pdf>

For further information, documents and reports please see [www.epa.ie](http://www.epa.ie).

## **Israel**

2007

## **Italy**

2007

## **Luxembourg**

2007 Information is not available.

## **Malta**

2007 N/A

## **Monaco**

2007

Information is not available.

## **Netherlands**

2007 Information can be found on:

[www.rivm.nl](http://www.rivm.nl)

[www.minvrom.nl](http://www.minvrom.nl)

[www.senternovem.nl](http://www.senternovem.nl)

[www.uitvoeringafvalbeheer.nl](http://www.uitvoeringafvalbeheer.nl)

## **Norway**

2007 Information is not available.

**Portugal**

2007 Monitoring environmental, epidemiological and psychosocial programs are being implemented since 1999 by LIPOR (in the metropolitan area of Oporto) and VALORSUL (in the metropolitan area of Lisbon) regarding the impacts of municipal solid waste incineration facilities on human health.

**Spain**

2007  
Information is not available.

**Sweden**

2007  
Information is not available.

**Turkey**

2007

**United Kingdom of Great Britain and Northern Ireland**

2007 The Prime Minister's Strategy Unit, in its report "Waste not, Want not", recommended that an independent body should bring together the literature and evidence on the relative health and environmental effects of all the different waste management options; relative both to each other and to other activities affecting health and the environment. The Government made a commitment in the pre-budget report 2002 to commission a review.

This was a two stage process. The first stage assessed the scientific evidence of the physical health and environmental effects of options to manage municipal solid waste and similar wastes, and a report was published in May 2004.

An economic study completed the second stage. This report provided an assessment of the external costs and benefits to health and the environment of waste management options valued in monetary terms. Both studies are available at:  
<http://webarchive.nationalarchives.gov.uk/20081105144808/http://www.defra.gov.uk/environment/waste/research/health/index.htm>

Small Area Health Statistics Unit (SAHSU) epidemiological study on health effects in human populations living close to landfill sites in the UK – this looks at the rates of birth defects, low birth weight, stillbirths and of certain cancers in populations living within 2km of landfill sites in operation between 1982 and 1997. The report was published in 2001 and can be found at  
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4120607](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4120607);

Statement by the Committee on Carcinogenicity of Chemicals and Food, Consumer Products and the Environment (COC) entitled 'Cancer incidence near municipal solid waste incinerators in Great Britain'. This is a review of a SAHSU epidemiology study investigating cancer incidence or mortality amongst individuals living in proximity to municipal solid waste incinerators in Great Britain. More information on this and other relevant studies can be obtained from  
<http://www.advisorybodies.doh.gov.uk/coc/statements.htm>

The Environment Agency has funded work to measure the emissions of airborne chemicals, dusts and micro-organisms from two landfill sites. The draft report and the results are being reviewed by the Committee on Toxicology, who asked for further data. The Committee expects to publish a statement on landfill sites and health impacts when it has completed its review. The Environment Agency work will not be published until then.

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***UN Region: Central and Eastern Europe***

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**Albania**

2007 During these years are done several surveys, studies , monitoring programs on state of environment and feasibility studies for remediation of areas with significant environmental degradation:

1-In Autumn 2000, UNEP performed an assessment of Albania's environment. The results were detailed in the report "Post-Conflict Environmental Assessment - Albania". During this assessment, UNEP investigated nine potential 'hot spot' sites that had been identified during a pre-mission conducted in cooperation with national / Albanian authorities. The assessment determined that five of the nine sites were, in fact, 'hot-spots' posing imminent risks to public health and the environment. The assessment report also presents findings regarding the impacts of the Kosovo conflict on Albania's environment and Albania's institutional capacity for environmental protection. The report concluded with a series of recommendations for improving the state of Albania's environment.

2-In order to catalyze urgently needed environmental action, UNEP performed a follow-up risk reduction assessment in Spring 2001. This feasibility study, focused on the hot spots identified in Durrës and Vlorë as well as the more general challenge of creating hazardous waste management infrastructure in Albania.

3-In September 2001, building on previous work by UNEP as well as national and international partners, the Government of Albania, supported by the Swedish International Development Cooperation Agency (SIDA), requested UNEP to conduct a feasibility study at Sharra Landfill, at one of the identified "hotspots" of Albania, that would identify and catalyze urgently required environmental measures.

4- The Environmental Performance Reviews in Albania carried out in 2002. There is a chapter on waste management.

5-The project of Institute of Environment carried out in 2002 "Monitoring of quality of air, surface and underground water in Sharra dumpsite",

6-The project of Institute of Environment done in 2002 "Monitoring of air, surface water, underground water, and soil in metallurgical cooper plant in Rubik"

7- The project of Institute of Environment in 2004 "On environmental assessment on industrial dumpsites in Metallurgical Complex in Elbasan, Superphosphate plant in Lac, Metallurgical Cooper plant in Rubik, Iron- nickel enrichment plant in Pogradec".

8-The project of NGO "Health 2000 " The assessment of human health in Chemical Plant in Durres" (one of the hot-spots). This project was financed from state budget in 2004.

9-The project of Institute of Environment "The assessment of environmental pollution in area of Bisht-Palla storage". About 370 ton of expired chemicals and pesticides are stored in open storehouses 1,5 km from former chemical plant in Durres.

10. The project on "Feasibility study on remediation of former chlor -alkali and polyvinyl chloride plant (PVC) in Vlora", financed from World Bank. The project started in 2003 and continued during 2004.

11. Project on "Feasibility study on remediation of former chemical plant in Durres" started in 2003 and continued during 2004. In 2005 has started the project for remediation of this contaminated area by pesticides and chromium.

12. Project on "Repackaging and removal from Albania of pesticides and other chemicals in Bishti I Palles" financed by Dutch government . The removal was finalized in July 2006.

## **Belarus**

2007 In Belarus from three components of the environment the basic attention of ecologists at inspection of objects of waste disposal is given studying of the level of their influence on ground water, less often surface waters and in a smaller measure on soil and air. For monitoring of quality of the ground waters observation posts are equipped (basically chinks). From which water tests for analytical researches are periodically selected. The regime network of observant chinks is created on 80 municipal waste disposal objects and 46 objects with industrial wastes. As a rule, the network will consist of 2-5 chinks on the municipal waste disposal objects and 4-10 - on objects with industrial wastes; on some objects the quantity of chinks exceeds 50-60 (salt spoil heap of the Production Society "Belaruskaliy", phosphogypsum heap of the Gomel chemical plant, a complex on processing and landfilling of hazardous wastes of Chechersk region and other). For ground and surface waters the set of the certain components is regulated and maximum permissible concentration are established. Monitoring of soils, air and surface waters in a zone of influence of waste landfilling objects is not conducted. However, on many objects where ecological inspection was carried out and ecological passports were developed, there are single definitions of maintenances of heavy metals in soil and definitions of quality of superficial waters (from streams, fire reservoirs) and atmospheric air. Now the extensive material about the basic chemical soil pollutants - microelements (Ni, Co, V, Mn, Cr, Pb, Mo, Cu, Zn, etc.), some inorganic (Na, NH<sub>4</sub>, Cl, SO<sub>4</sub>, NO<sub>3</sub>, etc.) and organic (mineral oil) substances is saved up. Environmental impact of waste disposal facilities are stated in the report on scientific research work "To Develop the Forecast of Change of the Condition of the Surrounding environment and a Complex of Actions with the Purpose of Maintenance of Ecological Safety of Belarus for 2010-2020". Ecological passports are developed for working objects. They are contain an information allowing to make an environmental impact assessment of object. For projected facilities (sources of waste production, objects on their processing and (or) disposal), the estimation of their possible environmental impact is carried out. Contact information: Institution BRC "Ecology", V. Khoruzhey Str.31a Minsk 220002 tel: (375 17) 234 70 65; tel/fax (375 17) 234 78 18 e-mail: belnic@mail.belpak.by

## **Bosnia & Herzegovina**

2007 Study on "Environmental Protection Assessment of Industrial, Medical and other hazardous wastes in Bosnia and Herzegovina" which contains three thechnical reports: Industrial and other Hazardous wastes (IHW and OHW); Medical hazardous wastes; and Executive summary.

## **Bulgaria**

2007 Such kind of information can be obtained from Executive Environmental Agency, "Waste" Sector:136, "Tsar Boris III" blvd., Sofia 1618; e-mail: ncesd@nfp-bg.eionet.eu.int; tel.: (3592) 940-6488, (3592) 955-9396; fax: (3592) 955-9015

## **Croatia**

2007

Information can be obtained from the Ministry of Health, Ksaver 200/a, 10000 Zagreb.

### **Czech Republic**

2007

There are no special statistics on the effects of hazardous wastes and other wastes on human health and the environment.

Contact information: National Institute of Public Health, Srobarova 48, CZ-10042 Prague 10

### **Estonia**

2007

National Waste Management Plan, Yearly statistics, Health Care Waste Management Strategy.

### **Georgia**

2007 In frames of project “BWPP-Biological Weapon spread Prevention Program” (Finance by US Government, 2004-2010) was delivered 2 incinerators for treatment of medical wastes and is planed to deliver 6 more devices.

### **Hungary**

2007

On the basis of the material balance and other documents, the owner of the waste shall submit a quarterly and annual report, to the regional environmental protection authority.

The annual reports are collected and registered in the database which is operated by the Ministry of Environment and Water.

All information on waste classification can be found at National Inspectorate for Environment and Nature Conservation.

### **Latvia**

2007

Information is not available.

### **Lithuania**

2007 According to the Law No X-595 on the Amendment of the Law on Environmental Monitoring adopted on 4 May 2006, every enterprise pursues the monitoring on local level and it is appreciable like their self-control implement. The reporting data must be submitted to Environmental Protection Agency under the Ministry of Environment annually for the last year period.

### **Montenegro**

2007

### **Poland**

- 2007 Multi-annual governmental research programme "Environmental and Health" is under way and will be continued in 2006. The programme of environment and health actions in Poland is implemented within the framework of basic strategy setting priorities for national health policy, namely the National Health Programme (NHP). The NHP was adopted by the Government of Poland for the years 1996-2005. The programme covers the following implementation actions:
- improvement of legal system on human protection in occupational environment (system of radiological protection, management of occupational safety and health in enterprises, prevention of biological hazards, safety in case of serious industrial accidents);
  - development and implementation of a modern system for identification and assessment of occupational hazards;
  - development of methodology for early diagnosis and prevention of occupational diseases and health promotion at workplace;
  - development or up-dating of educational systems essential for national social policy in relation to occupational safety and hygiene as well as ergonomics.

### **Republic of Moldova**

- 2007 Information not available.

### **Romania**

- 2007 Information is not available.

### **Serbia**

- 2007 The enormous destruction of chemical and power generators and their bombing in 1999, was reflected on the quality of the environment. The most quantities of hazardous wastes (PCBs, PBBs) were exported for treatment and final disposal. Priority activities on decontamination of hot spots are underway and supported by financial assistance through the projects, studies and other international activities.

### **Slovakia**

- 2007 Special statistics on the effects of hazardous wastes and other wastes on human health and the environment do not exist in Slovakia. The following information sources regarding wastes are available:
- Statistical Yearbook of the Slovak Republic, national, annual, Statistical Office of the Slovak Republic;
  - Report on Status of Environment of the Slovak Republic, national, annual, Ministry of Environment of the Slovak Republic;
  - Wastes in the Slovak Republic, national, annual, Statistical Office of the Slovak Republic;
  - Waste Management Programme of the Slovak Republic for the time period 2006-2010, national, Ministry of Environment of the Slovak Republic
  - [www.enviro.gov.sk](http://www.enviro.gov.sk)
  - [www.enviroportal.sk](http://www.enviroportal.sk)
  - [www.sazp.sk/COH](http://www.sazp.sk/COH)
  - [www.nczisk.sk](http://www.nczisk.sk)
  - Office for public relations established at the Ministry of Environment of the Slovak Republic – a public service.

### **Slovenia**

- 2007 Information is not available.

### **Ukraine**

2007 This information can be found in the National Report on the State of Environment in Ukraine (for years 1999-2007).

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***UN Region: Latin America and the Caribbean***

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**Argentina**

2007

There are no statistics on waste generation. However, there is a register of generators, operators and transporters subject to National Jurisdiction (this information can be found on Web Page: [www.medioambiente.gov.ar](http://www.medioambiente.gov.ar)).

In general most of the Argentine Provinces have no statistics or register, so there are no data for the whole country. However, there is a National Profile on human health elaborated by Ministry of Health and Social Action for OPS. Project (INTOX - OMS/OIT/PNUMA). Country additional data can be found in the Red Argentina de Toxicología (REDARTOX) (Argentine Toxicology Network).

**Barbados**

2007

None.

**Belize**

2007 Information is not available.

**Bolivia**

2007 No se cuenta con estadísticas de este tipo.

Sin embargo se puede indicar que se ha encontrado desechos peligrosos y algunos posibles efectos:

En relación a Plaguicidas y otros productos contaminados:

Bolivia con apoyo de la FAO, realizó un relevamiento de información de plaguicidas obsoletos (POs), encontrando 479 toneladas, a la fecha se esta realizando una actualización de información.

En relación a PCB's, se ha encontrado:

peso total (carcaza y aceite contaminado con PCB's) (kg) 409.194,00  
Cantidad de aceite contaminado existente (lt)\* 71.514,00

Todas estas existencias deben ser eliminadas y/o tratadas.

Sustancia	Número de Muestras	Valor Promedio ng/g	Rango ng/g
DDT	5	<30	30-30
DDD	5	44	-7
DDE	5	72.488	-131
Mirex	5	<11	11-11
Clordano	5	<11	11-11

Problemática encontrada en el área de salud:

Muestreos aleatorios y los resultados muestran concentraciones de COP's en sangre de personas.

- En el hospital oncológico de Santa Cruz de la Sierra se informo que se cuenta con varios casos y en aumento de Cáncer en zonas agrícolas.
- Asimismo en la ciudad de Tarija se nos informo de muchos casos de Cáncer.

## **Brazil**

2007 a) In depth studies considering the contamination of soil, water, air and human exposure to hexachlorocyclohexane (lindane - HCH) due to environmentally unsound disposal of HCH wastes: Department of Science and Technology in Health (DECIT)/ Health Policy Secretariat (SPS) of the Health Ministry (MS).  
Phones: + 55 (61) 3315-2852, 3315-2273, 3224-4692; Fax: + 55 (61) 3225-1167;  
e-mail: [ciencia@saude.gov.br](mailto:ciencia@saude.gov.br)

b) Contamination of lead, cadmium, zinc, copper in Santo Amaro da Purificação city/Bahia:

Health Secretariat of the State of Bahia

Phone: 0800 2840011; site: [www.saude.ba.gov.br](http://www.saude.ba.gov.br)

AVICCA - Association of contaminated victims of lead, cadmium, zinc, copper and other chemicals elements.

Phone: + 55 (75) 3241-2920; e-mails: [avicca@uol.com.br](mailto:avicca@uol.com.br) / [avicca@bol.com.br](mailto:avicca@bol.com.br)

CRA - Environmental Resources Center of the State of Bahia

Phone: + 55 (71) 3117-1200; site: [www.cra.ba.gov.br](http://www.cra.ba.gov.br)

Federal University of the State of Bahia

Phone: + 55 (71) 3263-7072; site: [www.ufba.br](http://www.ufba.br) .

c) Mantovani Landfill- disposal of industrial wastes (oil, sewage sludge, etc)

CETESB - Company of Technology and Environmental Sanitation

Phones: + 55 (11) 3030-6000 and (19) 3772-6600; site: [www.cetesb.sp.gov.br](http://www.cetesb.sp.gov.br)

## **Colombia**

- 2007 “Study of economic evaluation of the impacts of public and occupational health associated to the Persistent Organic Pollutants –COP- (2006)”.
- The pathologies which showed a strong association with the exposition to COP were identified, by means of the revision of secondary sources of information, ( such as chloracne, fibrosis and cirrhosis, lymphoma non Hodgkin, polyneuropathy, hypothyroidism, others porphyries)
  - With the previous information and the identification of the Colombian potentially exposed population to COPs, it was estimated the fraction of cases of such diseases attributable to each group of COPs
  - The costs of medical attention caused by those diseases were estimated

"Study over hazardous wastes in Colombia: a first step for action", elaborated by the National Planning Department and the Engineering Department of the National University of Colombia on July 1998. This study has a first overview of the issue of hazardous wastes in Colombia, the nature and volume of hazardous wastes generated in the country, etc. The full version of the document can be found in the web page of the Ministry of Environment of Colombia: [www.minambiente.gov.co](http://www.minambiente.gov.co)

"Methodology to classify the Risk Associated to the Exposure to Cancerous agents and other Chemical Toxic Substances", elaborated by Elizabeth Anderson in 1984. This study present a methodology based on the indicators of danger defined as the general indicator of potential harm that a hazardous substance poses to humans and to the environment. This document can be found at the library of the Ministry of Health of Colombia.

"Project for the Safe Management of Residues by Health Institutions", presented by the Ministry of Health in 1997. This document refers mostly to solid wastes and identifies as the main problem for their sound management the fact that they are essentially heterogeneous, and present characteristics of high humidity and important absorption capacity. The increased use of non re-usable materials adds to the problem. The document establishes a clear connection between the risks generated by such wastes and the type of hospitals involved, taking into account their medical specificity, the occupancy rate and the coverage of their service. It refers also to the biosafety rules applied to the percentage of accidents and professional diseases due to incorrect management or procedures, and insufficient working staff. This document proposes a waste management plan, which includes administrative, financial, planning and legal functions, based on the development of the generation, classification and security, collection, transportation and treatment, final disposition and advantage. As for the quantity and quality of wastes, the study refers to the results obtained at the "Pablo Tobón Uribe" Hospital. This document can be found at the Library of the Ministry of Health of Colombia.

Article "Treatment and Disposal of Solid Industrial Wastes", elaborated by Martha Espitia on March 1992. This document presents the problem of wastes as for their generation, characterization, collection, storage, pre-treatment and treatment. Though it presents some indicators over the generation and characterization of hazardous wastes, these are not specific enough. This document can be found at the Documentation Center of the Colombian Security Council.

Article "Management of Hazardous Wastes in Cement Furnaces", written by Sandra Escobar and Diego Ramírez in 1997, and published by the Colombian Security Council. It presents the benefits of hazardous wastes treatment in the cement industry for other furnace industries. It presents a study from the Panamerican Health Organization (PAHO) with an annual calculation over the wastes generation in three different countries. It does

not include the methodology used to obtain such results.

"Health and Work Environment, a Research of Cancerous Risk Factors in Industry", made by the Corporation "Penca de Sábila" (NGO) and the Social Security Institute in 1996. The research was carried out in the metropolitan area of the city of Medellín, in the city of Barranquilla and the municipality of Soledad. It focused in the enterprises classified in risk III, IV and V, according to the Decree 1295 of 1994. A survey was achieved for 120 enterprises, followed by 40 technical visits, and the result was the determination of the exposure levels to chemical substances or wastes considered cancerous according to the International Research Agency. The document can be found at the Center of Documentation of the CENSAT (NGO).

Seminar "Management and Disposal of Hazardous Wastes", organized in Bogotá by the Ministry of Health of Colombia and the Panamerican Health Organization (PAHO) in 1996. The presentations, where, inter alia, on: disposal of solid hazardous wastes, repercussions of such wastes on health, hospitable wastes management, transportation of hazardous wastes, legal requirements over polluting reduction, processing and treatment, state emergency plans.

Study over Hazardous Wastes in Latin America and the Caribbean, Colombia. It includes the evaluation of the generation and management of hazardous wastes in Bogotá, made by the National Planning Department in 1993. This study presents the hazardous wastes management in Bogotá, involving production aspects, and treatment, administration and control systems. It also presents a management and disposal evaluation of biomedical and health-care waste.

Guide for the Management of biomedical and health-care Solid Wastes of the "Pablo Tobón Uribe" Hospital in 1998. This guidebook includes a management plan for hospital residues, with the purpose to reduce its risks to health and the environment. It can be found at the Library of the Ministry of Health of Colombia.

"Impact of Industrial Wastes: Worker's Health and the Environment". This was a research carried out by the CENSAT (NGO) and the Social Security Institute in 1996. Ninety-six industries from Yumbo and Cauca were involved, and the main industrial wastes, the generating spots and the possible control mechanisms could be determined by a survey. This document can be found at the Documentation Center of the CENSAT.

Information related to effects of the generation, transportation and disposal of hazardous wastes and other wastes on human health and the environment.

In accordance to the National Legislation, an environmental permit is required in Colombia for: "Construction and operation of the management systems, storage, treatment and final disposal of solid, industrial, domestic and hazardous wastes"; those permits are issued by Regional Environmental Authorities (Regional Autonomous Corporations). This means that, any person, entity or municipality that wishes to construct or operate a solid wastes (common or dangerous) disposal system, have to elaborate an Environmental Impact Assessment. This EIA is required to follow criteria set forth in the Basel Convention for providing information particularly on the possible effects on water, air, soil, flora and fauna, and human beings.

The main landfills in Colombia are: 1) "Doña Juana Landfill" in Bogotá, under the jurisdiction of the Regional Autonomous Corporation of Cundinamarca (CAR), and, 2) The "Curva de Rodas Landfill" in Medellín, under the jurisdiction of the regional

environmental entity in Antioquia. So, these two regional environmental entities have direct access to the information related to studies, statistics, monitoring, etc, of the landfill.

The MAVDT and the Regional Environmental Authorities can provide more specific information about these studies, upon request.

### **Costa Rica**

2007

At present there are two research centres on state universities, such as CICA (Centro de Investigación en Contaminación Ambiental) at the Universidad de Costa Rica and IRET (Instituto Regional para el Estudio de Sustancias Tóxicas) at the Universidad Nacional (UNA), which can provide information on this topic.

The Ministry of Health is in the process of preparing a database related to all the wastes produced by the industrial and agro-industrial sectors that will reveal the current situation of Costa Rica.

### **Cuba**

2007

None.

### **Dominican Republic**

2007

The lead acid batteries project revealed some interesting results in respect of the percentage of lead present in the blood of communities exposed to lead contamination. There are also some areas where lead is found in the blood of the surrounding population.

### **Ecuador**

2007 Research about the effects of the generation, transportation and disposal of clinical wastes on human health and the environment by Fundacion Natura, Av. República 481 y Almagro, Quito - Ecuador, (593 2) 503391, e-mail: natura@fnatura.org.ec.

### **Guatemala**

2007 In 1998, a social conflict arose between the people of a community living near a factory making accumulators and the factory, which was accused of being responsible for neighbourhood health problems. A lengthy health investigation ensued, entailing measurements of the levels of lead in children's and adults' blood and water and soil measurements. Those analyses showed high levels of lead, and the factory was closed down and told it could not continue to operate in such circumstances. The owners made a substantial investment in order to rehabilitate the plant in respect of production equipment, pollution control and industrial safety, and the factory is operating again, and presents quarterly reports as requested by the Ministry of Environment of Guatemala.

### **Guyana**

2007 Mercury Effects on Human Health

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Assessment of Marine Litter in Guyana

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**Honduras**

Abstract

The review on lead and cadmium, promoted by the United Nations Environment Program (UNEP) Chemicals' Programme, is a very important initiative to know the situation of those chemical substances and the environment and health risks that involve, at the global, regional or national levels. Honduras, like State member of the United Nations, has been added to that noble effort, through the search, identification, selection, compilation and analysis of technical and scientific information generated by governmental, nongovernmental organizations and national and international academic institutions related to these chemical substances object of examination and evaluation.

This first review of the scientific information on lead and cadmium is of extreme importance to the country, because it has allowed to integrate information that was spread, forgotten or simply was not considered a source of useful consultation for relating to economical, social and environmental aspects in which finally the management of those chemical substances converges.

Although it is certain, much of the compiled and analyzed information is not systematic, nor has criteria of scientific rigor necessary to determine risk for human health and the environment; at least has been useful to establish a base line of the current national situation on lead and cadmium and additionally it has allowed to identify political, technological, scientific and information aspects, that must be strengthened to improve the knowledge of those substances and to understand the life cycle, in order to promote its environmental sound management.

In the different sections in which the review was organized according to UNEP's guidelines, will be found information generated by governmental and nongovernmental organizations related to mining, which exports lead and other metals that contributes with an important percentage of the gross domestic product. Also, are shown a series of studies published in different periods by governmental organizations, such as national and international academic institutions, whose intention has been to evaluate and to try to demonstrate the environment and health risks caused by lead in the different environmental components, to say, air, water, ground, ecosystems, foods and in addition to evaluate the general and occupational health effects. Also, some precise studies appear, that denote the effort of the governmental organizations to know the magnitude of the anthropogenic sources that release lead to the environment, especially in urban areas of the country, where an important industrial and commercial activity is concentrated. In an analogous way current actions and strategies and future plans are shown for preventing or controlling releases of lead.

Finally, it is important to mention that Honduras Government signed the Basel Convention on March 22, 1989 and ratified it on October 28, 1995 (Decree 31 - 95), which can be considered the main legally binding instrument to prevent or to control releases and to limit the use and exposures to lead and cadmium. This Review can be accessed in the following address:

[http://www.chem.unep.ch/Pb\\_and\\_Cd/SR/Files/Submission%20GOV/Submis\\_GOV\\_HN D.pdf](http://www.chem.unep.ch/Pb_and_Cd/SR/Files/Submission%20GOV/Submis_GOV_HN D.pdf)

2007 The International Centre for Environmental and Nuclear Sciences has done studies on the blood lead levels of primary school children across the island.

Information on the studies should be obtained from the Centre ([www.icens.org](http://www.icens.org)).

### **Mexico**

2007 The Federal Commission for the Protection against sanitary risks (COFEPRIS) from the Secretary of Health has national vulnerability map of exposure to hazardous wastes, specifically heavy metals.

Likewise, COFEPRIS carries out risk evaluation in contaminated sites with hazardous wastes in different federal entities of the country, for example: State of Mexico by chromium waste exposure; Coahuila and Morelos for exposure to lead wastes and San Luis Potosi by wastes of hydrocarbons.

The COFEPRIS collaborated with the Secretary of Environment and Natural Resources (SEMARNAT) in the making of the "Official Mexican Regulation for the restoration of polluted grounds", through the development of the basic guidelines for Risk Evaluation to human health by exposure to wastes.

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### **Panama**

2007 Se han realizado inventario para obtener información actualizada de la situación de :  
Compuesto orgánico persistente, PCBs, Dioxina y Furano en la actualidad se cuenta con una base de dato a nivel nacional sobre los temas antes señalados. Así como la realización del Plan Nacional de Aplicación del convenio de Estocolmo en la República de Panamá y el perfil Nacional de Gestión de Sustancias Química.

El seguimiento a este inventario, se revisara periódicamente debido a que se están realizando actividades para exportar equipo y sustancia peligrosa y se está realizando esfuerzo para adecuar los vertederos a cielo abierto existente.

### **Saint Lucia**

2007 None.

### **Trinidad and Tobago**

2007

- Lead contamination at Demerara Community in East Trinidad. Soil samples tested and remediated, human blood samples tested in 1991-1999. E.M.A. reports 2000 and 2005.
- Lead contamination at residential premises. East Trinidad remediated in early 2007.
- Asbestos remediation in Schools and Public buildings 1999-2002. Ministry of Health Report;
- Illegally dumped spent catalyst was recovered and shipped for regeneration. E.M.A. Incident Report.;
- 24 tons of DDT housed in Chaguaramas awaiting final disposal. F.A.O inventory of obsolete chemicals made in 1999; and
- Explosion at Chemical Storage Site in South Trinidad, 2005. All hazardous materials removed and disposed using environmentally sound practices. Site fully rehabilitated in 2006.

### **Uruguay**

2007 No information available.

### **Venezuela**

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