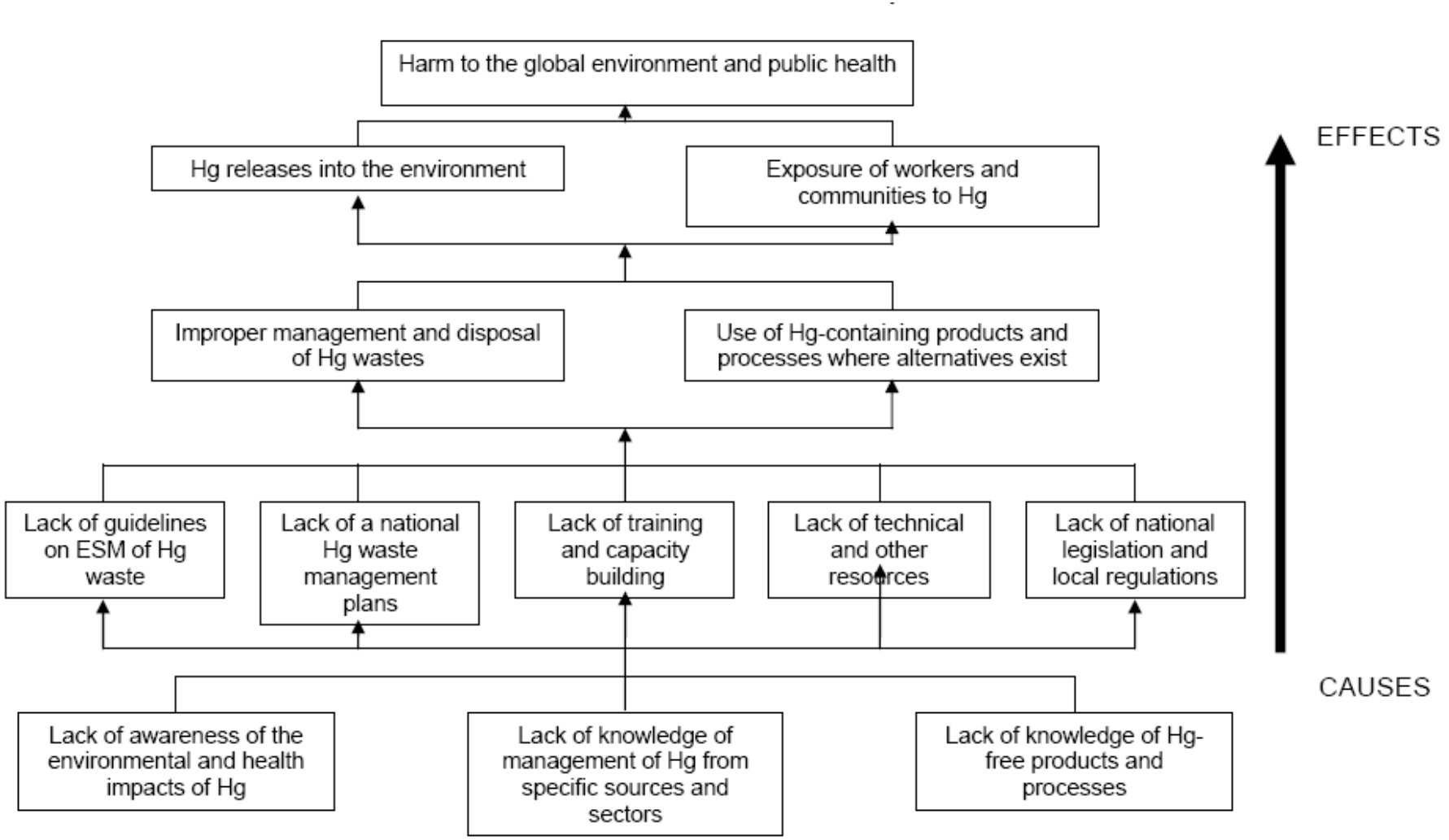
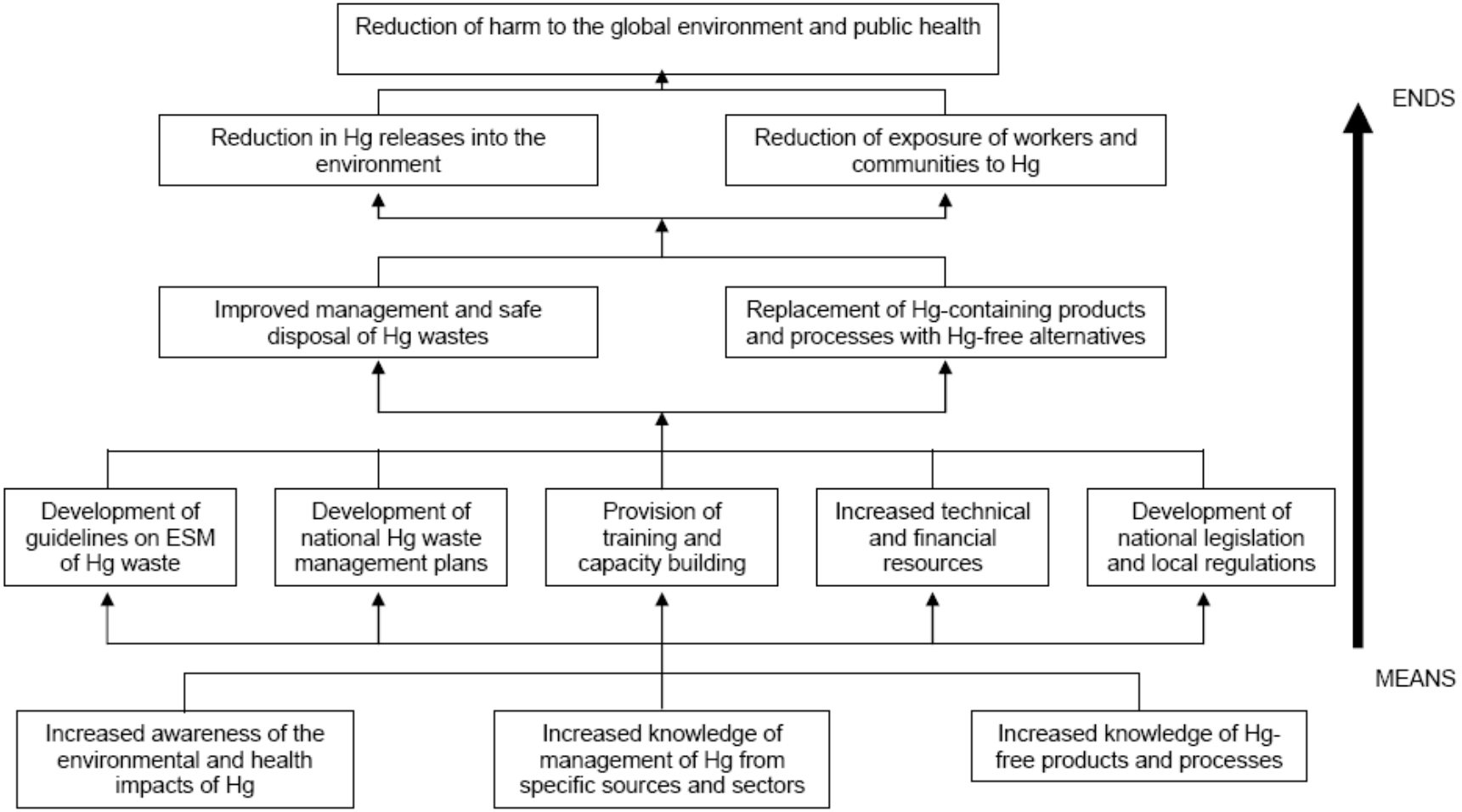
Annex 1: SITUATIONAL ANALYSIS

I. Problem Analysis



II. Objectives Analysis



III. Country Description

1. CAMBODIA

A. Country Profile

Government

Country name:	Cambodia (former: Khmer Republic, Democratic Kampuchea, People's Republic of Kampuchea, State of Cambodia)
Capital:	Phnom Penh

Geography

Location:	Southeastern Asia, bordering the Gulf of Thailand, between Thailand, Vietnam, and Laos border countries: Laos 541 km, Thailand 803 km, Vietnam 1,228 km
Geographic coordinates:	13 00 N, 105 00 E
Area:	total: 181,040 sq km, land: 176,520 sq km, water: 4,520 sq km Coastline: 443 km
Climate:	tropical; rainy, monsoon season (May to November); dry season (December to April); little seasonal temperature variation
Terrain:	mostly low, flat plains; mountains in southwest and north lowest point: Gulf of Thailand 0 m, highest point: Phnum Aoral 1,810 m
Natural resources:	oil and gas, timber, gemstones, some iron ore, manganese, phosphates, hydropower potential
Land use:	arable land: 20.44%, permanent crops: 0.59%, other: 78.97% (2005)
Natural hazards:	monsoonal rains (June to November); flooding; occasional droughts
Environment - current issues:	illegal logging activities throughout the country and strip mining for gems in the western region along the border with Thailand have resulted in habitat loss and declining biodiversity; soil erosion; in rural areas, most of the population does not have access to potable water; declining fish stocks because of illegal fishing and overfishing
Environment - international agreements:	party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Marine Life Conservation, Ozone Layer Protection, Ship Pollution, Tropical Timber 94, Wetlands, Whaling signed, but not ratified: Law of the Sea

People

Population:	13,995,904 (note: highly uncertain due to excess mortality due to AIDS)
Population growth rate:	1.729% (2007 est.)
Life expectancy at birth:	total population: 61.29 years; male: 59.27 years, female: 63.4 years (2007 est.)
Ethnic groups:	Khmer 90%, Vietnamese 5%, Chinese 1%, other 4%
Religions:	Theravada Buddhist 95%, other 5%
Literacy:	definition: age 15 and over can read and write; total population: 73.6%, male: 84.7%, female: 64.1% (2004 est.)

Economy

Overview:	In 1999, the first full year of peace in 30 years, the government made progress on economic reforms. From 2001 to 2004, the economy grew at an average rate of 6.4%, driven largely by an expansion in the garment sector and tourism. The garment sector had more than 13% growth in 2006. The tourism industry continues to grow rapidly. In 2005, exploitable oil and

	natural gas deposits were found. Mining also is attracting significant investor interest. More than 50% of the population is less than 21 years old. The population lacks education and productive skills, particularly in the poverty-ridden countryside.
GDP - per capita:	$2,800 (2006 est.)
GDP - composition:	agriculture: 35.1%, industry: 26.2%, services: 38.6% (2006 est.)
Labor force composition:	agriculture: 75%, industry: NA%, services: NA% (2004 est.)
Agriculture - products:	rice, rubber, corn, vegetables, cashews, tapioca
Industries:	tourism, garments, rice milling, fishing, wood and wood products, rubber, cement, gem mining, textiles

Sound management of chemicals in Cambodia:

Cambodia has a national chemicals profile in place and the current SAICM focal point rests in the Ministry of Environment.
Cambodia is one of the Asian countries involved in the "UNDP-UNEP Partnership in the Integration of the Sound Management of Chemicals' Consideration in the Development Process: Maximizing Return of Investment"

Waste projects implemented in Cambodia:

1. Project on a Survey of the Import and the Environmentally Sound Management of Electronic Waste in 2004. The Project studied and surveyed second hand equipment.
2. Project on the Inventory of Used Lead Acid Battery Management in Cambodia in 2004
3. Project on a National Inventory on Used Electronic and Electric Equipment in Cambodia in 2007

B. Stakeholder Analysis

Stakeholder in Cambodia	*Characteristics*	*Interest and expectations*	*Sensitivity to and respect of cross-cutting issues*	*Potentials and deficiencies*	*Implications and conclusions for the project*
1-Ministry of Environment 2-Ministry of Health 3- Ministry of Mine Energy and Industry 4-Ministry of Agriculture 5- Ministry of Religion Affair 6- Ministry of Commerce 5- Ministry of Interior 6-Ministry of Economy and Finance 7-Ministry of Agriculture 9- NGOs 10-Waste collection company, etc.		• Interests, Objectives: - to improve capacity building and public awareness on environmental soundly management of mercury waste - to encourage and gain the participation of various concerned agencies, NGOs, and private sectors to measure, reduce and prevent mercury releases and harmful effects • Expectations: - a good understanding of environmentally sound management of mercury waste - a Multi-Strategy National Plan on Mercury Waste Management	- to encourage women's participation in waste management - to reduce environmental pollution which has a harmful effect on human health especially of women and children	• Resources: -Lack of human resources - Capacity building staff are still limited - Financial budget is still insufficient for preparing facilities to properly manage Hg waste • Knowledge and experience are still limited regarding mercury waste management. • Possible contribution is still limited among relevant ministries and stakeholders	• Possible action: a mercury waste management national plan or technical guidelines for mercury waste management using ESM is needed • How to deal with the group: participation of concerned institutions and all stakeholders in the waste management program and implementation is needed
PARTNER: National government in Cambodia: 1-Ministry of Environment 2-Ministry of Health 3- Ministry of Mine Energy and Industry 4-Ministry of Agriculture 5- Ministry of Religion Affair 6- Ministry of Commerce 5- Ministry of Interior	• The environment ministry deals with hazardous waste, including mercury • The Environment ministry is responsible for implementing the Basel Convention • The environment ministry regulates air and wastewater releases as well as solid waste	• Project must be in line with the national development agenda • Environment, health and/or labor ministries are concerned with the health and safety of workers • The legislative and regulatory framework is conducive to the adoption of regulations and technical guidelines for ESM or	• Project must be in line with national poverty reduction strategies • Other pressing environmental and health issues may result in conflicting priorities that may pose a challenge to the project	• The government may lack the national infrastructure • The environment, health and industry ministries lack human, technical and financial resources •	• Work to get good buy-in on a national mercury waste management policy and plan • Support coordination between environment, health and other ministries to maximize the benefits for the countries

Stakeholder in Cambodia	*Characteristics*	*Interest and expectations*	*Sensitivity to and respect of cross-cutting issues*	*Potentials and deficiencies*	*Implications and conclusions for the project*
6-Ministry of Economy and Finance 7-Ministry of Agriculture	disposal • Other ministries, in particular, health and industry, also have interests in mercury waste • Health ministries generally regulate health facilities, which are a source of mercury and approach regulation from a public health perspective	mercury waste • The environment ministry focuses on media-specific impacts of contaminants but less on the synergistic impacts or health consequences			
PARTNER: Sectoral representatives-industry, waste handlers/waste treaters, disposal site workers and facilities: Waste collection companies	• The industrial sector generally includes manufacturing and production involving mercury • Waste handlers and disposal facilities generally deal with mercury waste	• The industrial sector generally resist new regulations on waste management and disposal that my result in increased cost • Some industries may not be aware of the health and environmental impacts of their waste • Waste handlers and disposal facilities may not be fully aware of the consequences of their waste handling and disposal	• Regulations and guidelines may result in increase costs to industry • Awareness of the occupational health issues related to mercury could be an incentive for waste handlers and waste disposal workers to participate in the project	• Industries may have technical and manpower resources that could be enhanced or tapped for the project • Workers federations and unions in specific industrial sectors may support the objectives of the project; once trained and properly equipped, workers can help sustain and improve management practices in a sector • Waste workers generally receive little training	• Involve the relevant representatives of the private sector in the source/sector-specific activities • Provide information, where available, on the cost-effectiveness of alternative products and processes • Raise awareness of the environmental and health impacts of mercury waste, which are often treated as cost externalities by industry • Involve technical experts from industry • Involve professional associations and unions where possible • Encourage industry to assist in the long-term sustainability of the project outcomes
PARTNER: Environment NGOs: Local and International	• NGOs are open and transparent, and non-threatening to	• NGOs are generally sensitive to the need for community and other	• NGOs are generally sensitive to the need for gender	• NGOs often have limited financial resources • Due to financial and time	• Involve NGOs in all aspects of the project • Maximize participation and

Stakeholder in Cambodia	*Characteristics*	*Interest and expectations*	*Sensitivity to and respect of cross-cutting issues*	*Potentials and deficiencies*	*Implications and conclusions for the project*
NGOs	community	stakeholder participation	and geographic balance	constraints, some NGOs may participate in a limited capacity	technical expertise available among NGOs • Encourage NGOs to provide long-term sustainability of the project outcomes
PARTNER: Educational institutions	• Cambodia has a few established colleges and universities that are a source of knowledge • Some institutions are interested specifically in research and training	• Educational institutions may not be initially interested in issues related to mercury waste • Some educational institutions (e.g., chemistry or engineering departments, medical schools) may also be sources of mercury waste	• Educational institutions are generally sensitive to gender and geographic balance	• Educational institutions do not have the lab capability or manpower to conduct mercury sampling and testing	• Assist in the assessment of the laboratory and manpower capabilities of educational institutions • Encourage educational institutions to assist in guideline dissemination and training of professionals
Indirect: BENEFICIARIES workers/waste handlers/waste pickers	• Waste workers and waste pickers have little training or personal protection • Waste workers and pickers are generally exposed to hazardous materials, including mercury • Waste workers and waste pickers may include women and children	• Many waste workers and waste pickers have little or no formal education • Waste workers and waste pickers have minimal financial resources	• Of special concern for waste pickers are women and children	• It may be difficult to get waste workers and waste pickers to attend meetings and workshops • Some waste workers or pickers may have difficulty understanding technical information	• Include ESM application of Hg waste in specific settings related to waste workers and waste pickers, if appropriate • If appropriate, increase awareness of waste workers and waste pickers on health and environmental impact of improper waste handling • Ensure that the information provided is appropriate to the level of education and language of waste workers and waste pickers • Hold meetings or workshops in places that would encourage maximum participation
Direct : BENEFICIARIES community around dumpsites, landfills, disposal sites and some areas such as gold mining	• Communities around dumpsites may have access to waste • These communities are exposed to hazardous waste, including mercury	• Many members of communities around dumpsites have little or no formal education • These communities have minimal financial resources	• Of special concern are the vulnerable populations--women and children	• It may be difficult to get communities around dumpsites to attend meetings and workshops • Some community members may have difficulty	• Include ESM application of Hg waste in specific settings related to communities around dumpsites, if appropriate • If appropriate, increase awareness of communities around dumpsites on

Stakeholder in Cambodia	*Characteristics*	*Interest and expectations*	*Sensitivity to and respect of cross-cutting issues*	*Potentials and deficiencies*	*Implications and conclusions for the project*
areas and other places which are polluted sources	• Many members of these communities may have little or no training and personal protection			understanding technical information	health and environmental impact of improper waste handling • Ensure that the information provided is appropriate to the level of education and language of the community members • Hold meetings or workshops in places that would encourage maximum participation

2. PAKISTAN

A. Country Profile

Government

Country name:	Pakistan (former: West Pakistan)
Capital:	Islamabad

Geography

Location:	Southern Asia, bordering the Arabian Sea, between India on the east and Iran and Afghanistan on the west and China in the north border countries: Afghanistan 2,430 km, China 523 km, India 2,912 km, Iran 909 km
Geographic coordinates:	30 00 N, 70 00 E
Area:	total: 803,940 sq km, land: 778,720 sq km, water: 25,220 sq km Coastline: 1,046 km
Climate:	mostly hot, dry desert; temperate in northwest; arctic in north
Terrain:	flat Indus plain in east; mountains in north and northwest; Balochistan plateau in west lowest point: Indian Ocean 0 m, highest point: K2 (Mt. Godwin-Austen) 8,611 m
Natural resources:	land, extensive natural gas reserves, limited petroleum, poor quality coal, iron ore, copper, salt, limestone
Land use:	arable land: 24.44%, permanent crops: 0.84%, other: 74.72% (2005)
Natural hazards:	frequent earthquakes, occasionally severe especially in north and west; flooding along the Indus after heavy rains (July and August)
Environment - current issues:	water pollution from raw sewage, industrial wastes, and agricultural runoff; limited natural fresh water resources; a majority of the population does not have access to potable water; deforestation; soil erosion; desertification
Environment - international agreements:	party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Wetlands signed, but not ratified: Marine Life Conservation

People

Population:	164,741,924 (July 2007 est.)
Population growth rate:	1.828% (2007 est.)
Life expectancy at birth:	total population: 63.75 years; male: 62.73 years, female: 64.83 years (2007 est.)
Ethnic groups:	Punjabi, Sindhi, Pashtun (Pathan), Baloch, Muhajir (immigrants from India at the time of partition and their descendants)
Religions:	Muslim 97% (Sunni 77%, Shi'a 20%), other (includes Christian and Hindu) 3%
Literacy:	definition: age 15 and over can read and write, total population: 49.9%, male: 63%, female: 36% (2005 est.)

Economy

Overview:	Pakistan has suffered from decades of internal political disputes, low levels of foreign investment, and a costly, ongoing confrontation with neighboring India. However, the government has made substantial macroeconomic reforms since 2000, most notably privatizing the banking sector. Poverty

	levels have decreased by 10% since 2001. Inflation remains the biggest threat to the economy.
GDP - per capita:	$2,600 (2006 est.)
GDP - composition:	agriculture: 19.4%, industry: 27.2%. services: 53.4% (2006 est.)
Labor force composition:	agriculture: 42%, industry: 20%, services: 38% (2004 est.)
Agriculture - products:	cotton, wheat, rice, sugarcane, fruits, vegetables; milk, beef, mutton, eggs
Industries:	textiles and apparel, food processing, pharmaceuticals, construction materials, paper products, fertilizer, shrimp

Chemicals management: Pakistan has a **national** chemicals profile in place and the current SAICM focal point rests in the Ministry of Environment.

B Stakeholder analysis

Pakistan identified the following stakeholders for the proposed mercury waste project:

#	NAME OF INSTITUTE OR DEPARTMENT
1	Director General, Pakistan EPA, Islamabad.
2	Director General, Environmental Protection Department, Lahore
3	Director General, Environmental Protection Agency, Korangi Industrial Area,Karachi
4	Director General ,Environmental Protection Department, Peshawar.
5	Director General, Environmental Protection Department, Quetta
6	Secretary (Customs Tariff -1), Federal Board of Revenue (FBR) Islamabad
7	Deputy Chief (Facilitation), Ministry of Industries, Production and Special Initiatives, Government of Pakistan, Islamabad.
8	Director, Institute of Chemistry, University of the Punjab, Lahore
9	Ministry of Health, Islamabad
10	Dr. Ejaz Ahmed, Health Services Academy, Islamabad
11	Executive Director, Pakistan Institute of Medical Sciences, Islamabad.
12	Secretary, Pakistan Medical and Dental Council, Islamabad.
13	Executive Director, Pakistan Medical Research Council (PMRC), Islamabad
14	Director General, Department of Plant Protection, Ministry of Food, Agricultural and Livestock, Karachi
15	Pakistan Agricultural Research Council, Islamabad.
16	Deputy Technologic Adviser, Ministry of Science & Technology, Islamabad
17	Principal, Institute of Environment Science & Engineering (NUST), Rawalpindi.
18	Pakistan Council of Scientific and Industrial Research (PCSIR), Islamabad.
19	Director, Pakistan Scientific & Technological Information Centre (PASTIC), National Centre, Islamabad
20	Director (Admn), Higher Education Commission (HEC), Islamabad.
21	Deputy Secretary (Import), Ministry of Commerce, Islamabad
22	Mr. Shabir Ahmed, Secretary, Islamabad Chamber of Commerce & Industry, Islamabad
23	President, Tanneries Association, Din-Gargh (TAD), KASUR.
24	Shahid Rashid, Incharge Cleaner Production Technologies, Lahore
25	General Manager, Kasur Tannery Waste Management Agency (KTWMA), Kasur
26	Managing Director, Water and Sanitation Agency (WASA), Lahore Development Authority (LDA), Lahore
27	Managing Director, Water and Sanitation Agency (WASA), Karachi Development Authority (KDA), Karachi
28	Mr. Mahboob Elahi, Managing Director (MD), Water and Sanitation Agency (WASA), Faisalabad Development Authority (FDA),Faisalabad
29	Dr. Javed Iqbal, Manager Director (MD), Water and Sanitation Agency (WASA), Multan Development Authority (MDA), Multan
30	Managing Director, Water and Sanitation Agency (WASA), Balochistan Development Authority (BDA), Quetta

31	Managing Director, Water and Sanitation Agency (WASA), Sarhad Development Authority (SDA),Peshawar
32	Shahid Khalil, Regional Manager (Chemicals), BU-Chemicals & Diagnostic, Merck Marker (Pvt) Ltd, Lahore
33	Dr. Mahmood A. Khawaja, Islamabad (NGO)
34	WWF-Pakistan, Islamabad (NGO)
35	IUCN- Pakistan, Islamabad (NGO)
36	LEAD Pakistan, Islamabad (NGO)
37	Deputy General Manager (HR), Sitara Chemical Industries Ltd, Faisalabad.
38	President,Federation of Pakistan Chamber of Commerce, & Industry (FPCCI), Federation House, Karachi

Pakistan Universities/Research Institutions

	Name of University / Institute	**Programmes**
1	University of the Punjab, Lahore	BS, MS, M.Phil, Ph.D
2	International Islamic University, Islamabad	MS, M.Phil, Ph.D
3	Karachi University, Karachi	MS, M.Phil, Ph.D
4	National University of Science and Technology (NUST), Rawalpindi	BS (Env. Engg.), MS (Env. Engg.), Ph.D (Env. Engg.).
5	University of Engineering and Technology, Lahore	BS (Env. Engg.), MS (Env. Engg.), Ph.D (Env. Engg.).
6	Fatima Jinnah Women University, Rawalpindi	BS, MS
7	Comsat Institute of Information Technology, Abbottabad	BS
8	Comsat Institute of Information Technology, Lahore	BS, MS.
9	University of Arid, Rawalpindi	MSc.
10	Lahore College for Women University, Lahore	MSc.
11	Kinnaird College University, Lahore	BS, MSc.
12	Government College University, Lahore	M.Sc, M. Phil
13	Peshawar University, Peshawar	M.Sc, M.Phil
14	Balochistan University of Information Technology, Quetta.	MS
15	Allama Iqbal Open University, Islamabad	MSc, M.Phil
16	Bahria University, Islamabad	BS
17	Federal Urdu University, Islamabad	MSc, M.Phil.

3. PHILIPPINES

A. Country Profile:

Government

Country name: Republic of the Philippines
Capital: name: Manila

Geography

Location: Southeastern Asia, archipelago (made up of 7,107 islands) between the Philippine Sea and the South China Sea, east of Vietnam
Geographic coordinates: 13 00 N, 122 00 E
Area: total: 300,000 sq km; land: 298,170 sq km; water: 1,830 sq km
coastline: 36,289 km
Climate: tropical marine; northeast monsoon (November to April); southwest monsoon (May to October)
Terrain: mostly mountains with narrow to extensive coastal lowlands
lowest point: Philippine Sea 0 m; highest point: Mount Apo 2,954 m
Natural resources: timber, petroleum, nickel, cobalt, silver, gold, salt, copper

Land use:	arable land: 19%; permanent crops: 16.67%; other: 64.33% (2005)
Irrigated land:	15,500 sq km (2003)
Natural hazards:	astride typhoon belt, usually affected by 15 and struck by five to six cyclonic storms per year; landslides; active volcanoes; destructive earthquakes; tsunamis
Environment - current issues:	uncontrolled deforestation especially in watershed areas; soil erosion; air and water pollution in major urban centers; coral reef degradation; increasing pollution of coastal mangrove swamps that are important fish breeding grounds
Environment - international agreements:	party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands, Whaling signed, but not ratified: Air Pollution-Persistent Organic Pollutants

People

Population:	91,077,287 (July 2007 est.)
Population growth rate:	1.764% (2007 est.)
Life expectancy at birth:	total population: 70.51 years; male: 67.61 years; female: 73.55 years (2007 est.)
Ethnic groups:	Tagalog 28.1%, Cebuano 13.1%, Ilocano 9%, Bisaya/Binisaya 7.6%, Hiligaynon Ilonggo 7.5%, Bikol 6%, Waray 3.4%, other 25.3% (2000 census)
Religions:	Roman Catholic 80.9%, Muslim 5%, Evangelical 2.8%, Iglesia ni Kristo 2.3%, Aglipayan 2%, other Christian 4.5%, other 1.8%, unspecified 0.6%, none 0.1% (2000 census)
Literacy:	definition: age 15 and over can read and write, total population: 92.6% male: 92.5%; female: 92.7% (2000 census)

Economy

Overview:	The Philippines was less severely affected by the Asian financial crisis of 1998 than its neighbors. Average GDP growth accelerated to about 5% between 2002 and 2006 reflecting the continued resilience of the service sector, and improved exports and agricultural output. The Philippines also faces higher oil prices, higher interest rates on its dollar borrowings, and higher inflation. Large unprofitable public enterprises, especially in the energy sector, contribute to the government's debt because of slow progress on privatization.
GDP - per capita:	$5,000 (2006 est.)
GDP - composition:	agriculture: 14.1%, industry: 31.6%, services: 54.2% (2006 est.)
Labor force composition:	agriculture: 36%, industry: 15%, services: 49% (2004 est.)
Agriculture - products:	sugarcane, coconuts, rice, corn, bananas, cassavas, pineapples, mangoes; pork, eggs, beef; fish
Industries:	electronics assembly, garments, footwear, pharmaceuticals, chemicals, wood products, food processing, petroleum refining, fishing

B. **Stakeholder Analysis**

Mercury and other Chemicals Management Profile

The Philippines has a national chemical profile in place. Coordination on chemical management issues rests with the Environment Management Bureau, under the Ministry Environment, who is likewise the SAICM National Focal Point.

Current environmental **laws which relate to this project are**:

- Chemical Control Order (CCO) for Mercury & Mercury Compounds: This CCO applies to the importation, manufacture, processing, use and distribution of mercury and mercury compounds. It also addresses the treatment, storage and disposal of mercury-bearing or mercury contaminated wastes in the Philippines. This order covers the following sectors:(1) importers and distributors,(2) manufacturers, processors and industrial users, (3) transporters,(4) treaters and disposers: permitted end users of Hg in the Philippines are chlor-alkali plants, mining and metallurgical industries, electrical apparatus (lamps, arc rectifiers, battery cells and others), industrial and control instruments, pharmaceuticals, paint manufacturing, pulp and paper manufacturing, dental amalgam, industrial catalyst, pesticides (fungicide) production or formulation
- Ecological Solid Waste Management Act of 2000
- Toxic and Hazardous Substances Act
- Clean Air Act of 1999 - bans the use of incinerator (except crematoria) for waste treatment

Stakeholders identified in waste management projects.

Ministries of Environment, Health, Labor, Industry- the Philippines has a very organized "Interagency Committee on Environment Health" and projects like this, cross cutting several agencies could be addressed by the current structure and mechanism. Environmental NGOs such as the EcoWaste coalition, professional organizations such as the Philippine Nursing Association, and educational/research institutions/universities could likewise be tapped to assist in the project.

The Philippines has participated in waste related projects such as the Asian Development Bank project on integrated solid waste management, the UNDP-GEF project on reducing health care waste to avoid releases of dioxins and mercury, among others. A project on ASM clean technologies was recently approved under the SAICM Quick Start Program.

4. BURKINA FASO

A. Country Profile

Government

Country name:	Burkina Faso (former: Upper Volta)
Capital:	Ouagadougou

Geography

Location:	Western Africa, north of Ghana; landlocked border countries: Benin 306 km, Cote d'Ivoire 584 km, Ghana 549 km, Mali 1,000 km, Niger 628 km, Togo 126 km
Geographic coordinates:	13 00 N, 2 00 W
Area:	total: 274,200 sq km, land: 273,800 sq km, water: 400 sq km
Climate:	tropical; warm, dry winters; hot, wet summers
Terrain:	mostly flat to dissected, undulating plains; hills in west and southeast
Natural resources:	manganese, limestone, marble; small deposits of gold, phosphates, pumice, salt
Land use:	arable land: 17.66%; permanent crops: 0.22%; other: 82.12% (2005)
Natural hazards:	recurring droughts
Environment - current issues:	recent droughts and desertification severely affecting agricultural activities, population distribution, and the economy; overgrazing; soil degradation; deforestation
Environment - international agreements:	party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Life Conservation, Ozone Layer Protection, Wetlands signed, but not ratified: none of the selected agreements

People

Population:	14,326,203 (note: highly uncertain due to excess mortality due to AIDS)
Population growth rate:	2.997% (2007 est.)
Life expectancy at birth:	total population: 49.21 years; male: 47.68 years; female: 50.8 years (2007 est.)
Ethnic groups:	Mossi over 40%, other approximately 60% (includes Gurunsi, Senufo, Lobi, Bobo, Mande, and Fulani)
Religions:	Muslim 50%, indigenous beliefs 40%, Christian (mainly Roman Catholic) 10%
Literacy:	definition: age 15 and over can read and write, total population: 21.8%; male: 29.4%; female: 15.2% (2003 est.)

Economy

Economy - overview:	One of the poorest countries in the world, landlocked Burkina Faso has few natural resources and a weak industrial base. About 90% of the population is engaged in subsistence agriculture, which is vulnerable to periodic drought. Cotton is the main cash crop. Industry remains dominated by unprofitable government-controlled corporations.
GDP - per capita:	$1,400 (2006 est.)
GDP - composition:	agriculture: 30%; industry: 19%; services: 51% (2006 est.)
Agriculture - products:	cotton, peanuts, shea nuts, sesame, sorghum, millet, corn, rice; livestock
Industries:	cotton lint, beverages, agricultural processing, soap, cigarettes, textiles, gold

B. Stakeholder Analysis

Burkina Faso has a National Action Plan for the Environment which was adopted in 1991 and revised in 1994 based on Agenda 21. Its main goal is to provide a balanced and sustainable socio- ecologic and socio-economic development that will be provide a better life for its population. This is guided by the Declaration of Rio of 1992 on the environment and development. Burkina Faso adopted the most important principles applicable to the State. Among these principles are the principle of sustainable development, the principle of the common but differentiated responsibility, the principle of the non detrimental use of the national territory and the principle of co-operation. The most important principles adopted by Burkina Faso are the principle of prevention, the precautionary principle, the principle of pollutant payer and the principles of information and participation. The Department of the Environment sets the policy as regards management of waste and supports local councils with regard to the municipalities. The Department of the Environment has great experience in the field of the management of waste projects such as the project of management of household refuse, project of management of plastic waste, project management of dangerous waste in cooperation with Stockholm and Basel conventions.

The following agencies are identified to play important roles in the sound management of chemicals and chemical waste:

- Ministry of Economic Development
- Ministry of Local Government
- Ministry of Mines, Quarry and Energy
- Ministry of Agriculture and Water Resources

The SAICM focal point for Burkina Faso is the Ministry of Environment.

Annex II: MERCURY INVENTORY RESULTS

I. CAMBODIA

The inventory report is focused on the preliminary survey of mercury releases into atmosphere within Cambodian territory. Such survey was undertaken from July to December 2007 throughout Cambodia by the mercury task team of the Department of Environmental Pollution Control of the Ministry of Environment, which is led by a national coordinator. This team went through a three-day training course (including field study), which was conducted by the international consultant immediately before the survey took place. The team was also provided questionnaire forms for recording the findings and the inventory was undertaken within the selected twelve provinces and municipalities, which were assumed to have potential mercury releases.

It was remarkable that products and equipment containing mercury or mercury compounds have been used in Cambodia; however, there is no official record that could confirm when such equipment was first introduced in Cambodia. Nevertheless, there is no doubt that equipment containing mercury and mercury compounds have been imported to Cambodia, which resulted in mercury releases into the environment after disposal of such equipment. In addition, extraction of mining activities (*i.e.*, gold extraction, lime production, *etc.*) and other manufacturing, processing and combustion activities could cause the release of mercury into the atmosphere as well.

Based on the preliminary survey, the total release of mercury in Cambodia is approximately **769.51 kg** minimum and about **14845.178 kg** maximum per year (see Table 1). The first major source of the maximum mercury release into the atmosphere is consumer products with intentional use of mercury; this source accounts for the release of mercury of about 8485.362 kg. This source is followed by the disposal of wastes that could release approximately 4665.56 kg of mercury, and then the third source of mercury release is gold extraction that emits mercury into the environment at about 1182 kg per year (see Table 1 below). Concerning the maximum release, the survey team thought that this amount may be a reasonable figure because the maximum input factors have been used to calculate for the release of such mercury, and it can be assumed that estimates can be extrapolated for some fields where information needed for calculation was not obtained, such as electrical and electronic switches, light sources with mercury, biocides and pesticides, paints, pharmaceuticals for human and veterinary uses, cosmetics and related products, etc.

On the management of mercury release into the environment, Cambodia has no any specific provision dealing with safe and sound management and use of either products/equipment containing mercury or mercury compounds nor other specific chemicals so far. The existing legislation available is generally focused on the overall management of chemicals particularly related to pesticides (for agricultural purposes) and general waste management (for the environmental purposes). In terms of the infrastructure, there are six main laboratories available in Cambodia, which belong to technical ministries but none of these laboratories have the capacity to analyze mercury due to a number of deficiencies.

In summary, as Cambodia is faced with several constraints related to the national budget and lack of knowledgeable experts in this area. The country requires further assistance in terms of both budget and technical support from GEF/UNEP and other international organizations and development partners, in order to undertake further detailed inventories as well as designing and implementing mercury management plans. This project will assist Cambodia in the sound management of mercury, which will provide benefits not only for the current generation, but also for the next generations nationally, regionally and globally.

Table 1: Summary of mercury release from all categories (Cambodia, 2008)

No	Category and Sub-category	Activity rate	Input factor		Amount (kg Hg/yr)	
			Min	Max	Min	Max
1	**Extraction and use of fuel/energy sources**					
1.1	Use of crude oil (Power plant)	240,748 t/yr	10 mg/t	300 mg/t	2.407	72.224
1.2	Use of gasoline, diesel and other distillates (Power plant)	186,344.87 t/yr	1 mg/t	100 mg/t	0.186	18.634
1.3	Use of gasoline, diesel and other distillates (transportation)	284,737.85 t/yr	1 mg/t	100 mg/t	0.285	28.474
1.4	Use of pipeline gas (consumer quality)	34,176,062.25 Nm^3	0.03 $\mu g/Nm^3$	0.40 $\mu g/Nm^3$	0.001	0.014
1.5	Biomass fired power and heat production	5,511,201 t/yr	0.007 mg/t	0.03 mg/t	0.039	0.165
2	**Primary metal production**					
2.1	*Maximum mercury use per year*	6,000 miners	N/A	N/A	34.5	1182
3	**Production of other minerals and materials with mercury impurities**					
3.1	Lime production	240	0.009 g/t	0.055 g/t	0.002	0.013
4	**Intentional use of mercury in industrial purposes**				N/A	N/A
5	**Consumer products with intentional use of mercury**					
5.1	*Thermometers*	6,141 items/yr	0.5 g/item	1.5 g/item	3.071	9.212
5.2.1	*Batteries*	635.599 t/yr	0.25 kg/t	10 kg/t	158.900	6,355.99
5.2.2	*Other type batteries*	13.251 t/yr	3.4 kg/t	160 kg/t	45.053	2,120.16
6	**Other intentional products/process uses**					
6.1.1	Amalgam fillings in capsule	0.8 g per capsule	2,790 capsules	141,224 capsules	2.232	112.979
6.1.2	Free metal mercury consumption		5.741 kg	50.040 kg	5.741	50.040
7	**Production of recycled metals (secondary metal production)**					
7.1	*Production of recycled ferrous metal (iron and steel)*	8,358.80 t/yr	N/A		0	0
7.2	*Production of other recycled metals (aluminum, copper, etc.)*	2,197 t/yr	N/A		0	0
8	**Waste incineration**					
8.1	*Incineration of municipal/general waste*	3,525.60 t/yr	1 g/t	10 g/t	3.526	35.256
8.2	*Incineration of medical waste*	801.82 t/yr	8 g/t	40 g/t	6.415	32.073
9	**Waste deposition/land filling and waste water treatment**					
9.1	*Solid waste disposal*	466,556 t/yr	1 g/t	10 g/t	466.556	4,665.56
9.2	*Waste water treatment*	N/A	0.5 mg/m^3	10 mg/m^3	0	0
10	**Crematoria and cemeteries**					
10.1	*Cremation*	40,596 corpse/yr	1 g/corpse	4 g/corpse	40.596	162.384
11	**Identification of potential hot-spots**				N/A	N/A
	Total release from all categories				**769.51**	**14845.178**

II. PAKISTAN

The first mercury for Pakistan is presently under development. Data collection is being done by the Ministry of Environment, in collaboration with the Ministries of Health, Industry, Science and Technology, and as well as the Pakistan Research Institute of Chemistry. Provincial EPAs are involved as well. The sites include the markets of Lahore and Rawilpindi. Quantitative estimates are not yet available but are expected to be submitted to UNEP Chemicals at the end of June 2008.

An initial screening revealed that chloralkali plants could be a significant source of mercury release. Three plants have been identified, namely:

1. Sitara Chemicals (180,000 tons capacity) 100% production
2. Ittehad Chemicals (Capacity is 132,000 tons) 60% production
3. Nimir Chemicals (Capacity is 10,000 tons) 100% Production

Total capacity of Pakistan is 322,000 million tons chloralkali of which 20% is based on mercury cell technology.

The first inventory results also revealed that with a population of 160 mio and the ranges of emission factors provided in the Toolkit, the ranges of mercury emissions in Pakistan are too large to draw conclusions as to the management plan and the priorities. Therefore, Pakistan has collected some samples of raw materials, residues and products to analyze them for the content of mercury to reduce the range of inputs and emissions. Among the activities/industries sampled are the following:

1. Raw materials: coal used in the power plants, crude oils from refineries, zinc and copper ores, raw material mix from cement industry, paper industry, lime kilns, and cosmetics

2. Products: fuel oil, cement, lime, batteries, biocides, paints, cosmetics, dental amalgam

Waste: ash and sludge from coal combustion, refineries, pulp and paper, polymer industry, paints, cosmetics, laboratories

Waste water: chloralkali production, tanning, leachates from landfills.

The development of the inventory also includes the component of chemical analysis of the different types of samples.

III. PHILIPPINES

In the Philippines, under Republic Act 6969 of 1990 and DENR Administrative Order (DAO) No. 29, Series of 1992, the Chemical Control Order (CCO) is being issued on the basis of authorities given to the Department of Environment and Natural Resources (DENR 1997). The CCO, in addition to all the other requirements, is concerned on mercury and mercury compounds; their importation, manufacture, distribution and use. It is meant to control their use and dispersion into the environment to avoid adverse consequences.

The Environmental Management Bureau (EMB) of the DENR, as part of the CCO, has records of all the importer, manufacturer, distributor and purchaser, the end-use category of mercury or mercury - containing products, quantity of products supplied, and the quantity of wastes produced as a result of manufacturing and industrial use (DENR 1997). An inventory of mercury and mercury compounds is undertaken within the country.

Using the UNEP Mercury Inventory Toolkit, the following were found to be the Major Sources of Mercury Releases

- Extraction and use of fuels/energy sources
    1. coal combustion in large plants: using maximum default input factor of .5gHg/ton coal, estimated emission is 5,387 kg Hg/yr, mostly in air, comprising 90%, and general waste for the remaining
    2. other coal use
    3. extraction, refining and use of mineral oil: using default input factor of 100 mg Hg/ton, estimated emission is 200kg/yr, in air, comprising 90%, and general waste in the remaining

4. natural gas extraction: using default input factor of 200 µg Hg/Nm³, estimated emission is 846.795 kg Hg/yr
5. geothermal power production: using a value of 3-4 Hg/MWh, a total of 46,372 kg Hg/yr was emitted

- Primary (virgin) metal production
  1. gold and silver production: using default input factor of 3 kg Hg/kg gold produced, a total of 113,490 kg Hg/yr is emitted with 60% emission in air, while the remaining in land and water
  2. copper extraction and initial processing: using maximum default factor of 15, a total of 244.80 kg Hg/yr is emitted, with 80% release in land and water, 20% emission in air
  3. lead extraction and initial processing: using maximum default factor of 200 g Hg/ton, the total emission is 15,000 kg Hg/yr, with 10 % emission in air, while the 90% in land, products, other sector specific treatment or disposal
- Production of other minerals and materials with mercury impurities
  1. cement production: using maximum default factor of .1 g Hg/ton, the total emission is 1,203 kg Hg/yr, totally emitted in air
  2. pulp and paper production: using input factor of 1.95×10^{-5} kg/Hg ton, total emission is 6.171 kg Hg/yr, totally emitted in air
  3. lime production: using input factor of 5.5×10^{-5} kg Hg/ton, total emission is 2.64 kg Hg/yr, totally emitted in air
- Intentional use of mercury in industrial processes: (chlor alkali plant): using maximum default input factor of 400 g Hg/ton, total emission is 8,400 kg Hg/yr with emission distributed in air, land, water, and products
- Consumer products with intentional use of mercury
  1. thermometers: using default input factor of 1.5 g Hg/item, total emission is 198 kg Hg/yr in air, land, water, product
  2. electrical switches: using default input factor of .25 g Hg/yr/inhabitant, total emission is 22.17 tons Hg/yr in air, land, water, and general waste
  3. light sources with mercury: for double end fluorescent lamps, using the maximum default factor of 40 mg Hg/unit, 23.5 tons Hg are used and disposed each year, emitted in air, land, and general waste; for single end compact fluorescent lamps, using maximum default factor of 15 mg Hg/item, about 2.2 tons Hg are used and disposed per year
- Other intentional product/process use
  1. dental amalgam: using a default value of .20 g Hg/yr/inhabitant, a total of 17,741 kg Hg/yr are used and disposed per yr, with emission in air, land, product, sector specific treatment or disposal
  2. manometers and mercury containing gauges: using maximum default of 600 g Hg/unit, total of 104 kg Hg/yr is emitted into land, air, general waste
  3. laboratory chemicals and equipment with mercury: using maximum default factor of 6 g Hg/unit, 65.5 tons of Hg are used and disposed from thermostats per year, with emissions in air, land, general waste
- Waste deposition/land filling and waste water treatment
  1. controlled land fill, informal local disposal of industrial production waste: 4.5 tons Hg/yr and 8.09 tons Hg/yr
  2. wastewater system treatment: using maximum default of 10 mg Hg/ cubic meter of wastewater, total of 19,615 kg/yr is emitted
- Crematoria and cemeteries: using maximum default input factor of 4 g Hg/corpse, total emission is 1.3 tons Hg/yr

IV. BURKINA FASO

The following categories were used in building the mercury inventory:
5.1 “Extraction and use of fuels/energy sources”
5.2 “Primary (virgin) metal production”
5.3 “Production of other minerals and materials with mercury impurities”
5.5 “Consumer products with intentional use of mercury”
5.6 “Other intentional products/process uses”
5.7 “Production of recycled metals ("secondary" metal production)”
5.8 “Waste incineration”
5.9 “Waste deposition/landfilling and waste water treatment”

Of all sources of mercury release in Burkina Faso, the most significant are from intentional products, specifically mercury containing batteries. Primary sources of these batteries are from China and Asia in general. At the end of their life, these batteries are disposed indiscriminately by the population, mostly by open burning. The statistics provided by the IGAE (General Inspection of the Economic Affairs) indicate that between 2004 and June 2007, about 3,521,106 batteries with mercury were imported. With each battery weighing 47 grams, the total quantity of batteries is 165 tons. The estimated quantity of mercury is 10 kg per ton or estimated 1,650 kg mercury is emitted per annum, mostly released in soil/land. These batteries enter the country through illegal means. In Bobo Dioulasso for example, the regional inspection of trade seized large quantities of these mercury containing batteries which are stored in a building. Once seized, these batteries are often burned by the population, often not conscious of their effects on health and the environment.

Button cell mercury containing batteries also circulate freely in the country. The quantities used are ignored in national statistics office. These button cell batteries coming primarily from Asia are used in watches, in remote controls and other goods. It is estimated that the total quantity is nearly 4 million per annum. They are especially imported by the informal sector and circulate without control. In the absence of accurate information, button cell batteries are estimated to have mercury content of 7 kg per ton. The total weight evaluated per annum with 20 tons batteries is about 140 kg mercury release per annum.

The inventory results reveal that it is this battery sector that constitutes the priority of all mercury sources for release. Mercury is also released in small scale gold mining where it is being used as a catalyst or to amalgamate the gold. The gold washers burn the ore containing gold, thereby exposing the miners and others to the mercury vapors. The waste goes into the rivers poisoning the fish and other seafood.

Burkina Faso MOE recommends urgent actions to protect pubic health and the environment from the hazards of mercury release. All stakeholders in the chain of waste management should be involved in finding a solution appropriate to the problems caused by the management of the batteries. These include the political municipalities, decision makers, civil society, general population, gold miners and mining companies, ministries of health, industry, territorial administration, finances, and scientific research, among others. Activities include organizing information- education workshops, training of the public on the good practices as regards management of waste containing of mercury.

The preliminary quantitative inventory is shown in Table 2 below:

Table 2: Preliminary Hg inventory (Burkina Faso, 2008)

Source Cat.	Source category /phase	Enter activity rate	Unit	Calculat. Hg input (kg/y)	Calculated Hg output (kg/yr)					
					Air	Water	Land	Product	General waste	Sector specific treatment disposal
5.1.2	Other coal use: coke production	264 342	t coal/yr	132.17	132.17	0	0	0	0	0
5.1.3	Use of crude oil: Uses (other than combustion)	621 449	t oil/yr	62.14	62.14	0	0	0	0	0
5.1.6	Biomass fired power and heat production	336 429	tonnes	0.87	0.87	0	0	0	0	0
5.2.2	Gold and silver extraction with mercury amalgamation processes From whole ore	200	kg gold produced/yr	400	240	80	80	0	0	0
5.5.1	Medical thermometers	296 418	items/yr	444.63	4.45		4.45			
5.5.3	Fluorescent tubes (double end)	573 238	items/yr	22.93	0	0	21.85	0		
5.5.4	Zinc-air button cells	20	t bat/yr	140	0	35.00	70	0		
5.5.4	Alkaline, other than button cell shapes	165	t bat/yr	1 650	0	0	1 650			
	Cosmetics and related products with mercury - Use+disposal	5	t cream or soap/yr	100	95	5.00	0	0		
5.6.1	Dental mercury-amalgam fillings - Preparations of fillings at dentist clinics (share of current mercury supply for amalgam fillings)	8	kg Hg	8.25	0.36	2.49	0	10.65	2.13	2.13
5.6.1	Use - from fillings in the mouth (releases from mercury supply for fillings 5-15 years ago)	17.75	kg Hg	17.75	0	0.36	0	0	0	0
5.6.1	Disposal (releases from mercury supply for fillings 10-20 years ago)	17.75	kg Hg	17.75						
5.8.3	Incineration of medical waste	1 022	t waste incinerated/yr	40.88	40.88	0	0	0	0	0
5.8.5	Informal waste incineration	32 631	t waste incinerated/yr	326.31	1.10	0	0	0	0	0
5.9.1	Controlled landfills/deposits	198 095	t waste landfilled/yr	1 980.95	0.99					
5.9.4	Informal dumping of general waste	73 000	t waste dumped/yr	730	0	0	0			
5.9.5	Waste water system/treatment	2 526 950	m^3 waste water/yr	7.58	0	7.58	0	0	0	0
Total				6 082.23	577.97	130.42	1 826.30	10.65	2.13	2.13