



United Nations Environment Programme

برنامج الأمم المتحدة للبيئة • 联合国环境规划署
PROGRAMME DES NATIONS UNIES POUR L'ENVIRONNEMENT • PROGRAMA DE LAS NACIONES UNIDAS PARA EL MEDIO AMBIENTE
ПРОГРАММА ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ ПО ОКРУЖАЮЩЕЙ СРЕДЕ

WORKSHOP TO REDUCE USE AND RELEASE OF MERCURY IN PRODUCTS

**Bangkok, Thailand
17-19 May 2007**

Workshop Proceedings Executive Summary

Introduction

The workshop was in response to the call of the United Nations Environment Program (UNEP) Governing Council (GC) 24th session, for increased efforts to address the global challenges to reduce risks from releases of mercury by reducing the global mercury demand related to use in products and production processes.

The workshop was conducted by UNEP Chemicals in coordination with the Thailand Ministry Pollution Control Department- Ministry of Environment and Natural Resources (PCD-MNRE) and with support from the United States Environmental Protection Agency (USEPA), last 17-19 May 2007 in Bangkok, Thailand. It was [attended](#) by

- 24 Governments -national focal points and representatives of the Strategic Approach to International Chemicals Management (SAICM) ; representatives from the environment , pollution control, science and technology, industry and trade, and health Ministries in the Asia Pacific (Bangladesh, Bhutan, Cambodia, China, Iran, Iraq, Japan, Kiribati, Kuwait, Laos, Malaysia, Mongolia, Myanmar, Nauru, Nepal, Oman, Palestine, Pakistan, Philippines, Qatar, Singapore, Thailand, Tuvalu) ; Canada
- 6 Non Governmental Organizations dealing with sound management of chemicals - Environmental Health Fund (EHF), Toxics Link, Basel Action Network(BAN), Sustainable Development Policy Institute (SDPI), Institute for Global Environment Strategies (IGES), Asian Institute of Technology (AIT)
- 2 Intergovernmental Organizations- World Health Organization (WHO) and the United Nations Institute for Training and Research (UNITAR); 1 from the Secretariat of the Basel Convention (SBC)
- 2 Industry organizations- National Electrical Manufacturers Association (NEMA) and the International Council of Mining and Metals (ICCM)
- Resource speakers representing other organizations- the USEPA, Mercury Policy Project (MPP), the Health Care without Harm (HCWH), the Concorde East West SPRL, the Pacific Basin Consortium for Environment Health Science , Sweden KEMI

Objectives of the workshop were to:

1. Strengthen awareness on mercury toxicology, exposure pathways, use and release in products and processes
2. Gain an understanding of mercury flow in trade as well as on mercury inventories and databases
3. Promote the exchange of information on mercury product substitution and best Management practices to reduce mercury from products

4. Present UNEP mercury programme and its current activities including partnership activities on mercury
5. Develop national and sub regional action plans aimed at reducing mercury use and release from products

Session 1: Opening of the Workshop

The workshop was [opened](#) by Mingquan Wichayarangsaridh, Deputy Director-General of Thailand PCD-MNRE at 9.30 in the morning of 17 May 2007. She welcomed participants and underscored the fact that the Government of Thailand is very supportive of UNEP work on the sound management of chemicals, including work to reduce pollution brought about by the use and release of mercury in products.

Participants were also officially welcomed by Atul Bagai, on behalf of the UNEP Regional Director for the Asia Pacific and Desiree Narvaez of UNEP Chemicals Mercury Programme. [UNEP's opening remarks](#) centered on the need for substitutes for mercury in products, considering mercury toxicity and its capacity to cycle globally. It emphasized that in considering the best way to protect human health and the environment, GC 24 had looked at two main ways forward. One approach to the global management of mercury is through partnerships, with an important partnership area being products. Partnerships are voluntary structures which provide a framework to work towards agreed objectives to reduce mercury releases to the environment. The other approach to manage mercury is a consideration of the need for a legally binding instrument. A meeting will be held later this year to start to discuss the options for enhanced voluntary measures and new or existing legally binding instruments. UNEP requested Governments to explore the national management of mercury, and come up with national action plans focused on mercury in products, as part of workshop output.

The [workshop overview and organization of activities](#) was presented by Desiree Narvaez, and participants were asked to introduce themselves.

The opening session was moderated by Pattanan Tarin of the Thailand PCD-MNRE.

Session 2: Mercury: Toxicology, Exposure Pathways, Uses and Releases Synthesis of presentation and highlights of discussion

The session was moderated by Hisashi Ogawa of WHO-WPR.

["Mercury Toxicology and Exposure Pathways"](#) was presented by Irma Makalinao, Board member of the Pacific Basin Consortium for Environment and Health Sciences. The presentation covered the sources, routes of exposure, toxicity on target organs and systems of elemental, inorganic and organic mercury. The sources include mercury containing products, mining and industrial activities, waste incineration and volcanoes. Methylmercury that is bio-accumulated in fish and shellfish is a main concern in both industrialized and developing countries. Small gold/silver mining operations are also a major source in some developing countries. Mercury used in health care and the unintentional release of mercury from waste incineration poses a threat to public health. Children are particularly vulnerable to the exposure to mercury as it can affect adversely their neurodevelopment.

["Mercury Use and Releases"](#) was presented by Michael Bender, Director of the US-based Mercury Policy Project. He stated that mercury emissions were decreasing in North America and Europe, but they are increasing in Asia. Major sources include coal combustion and waste incineration, and main users of mercury are small-scale gold mining, vinyl chloride monomer production, chlor-alkali mercury –cell plants, batteries and measuring devices. He stressed that the intentional use of mercury in products and processes is avoidable in most cases, except for lamps. The challenge for alternatives would be the costs involved. He concluded that the use of mercury could be phased out, as is being done by more

industrialized countries, and that partnerships with measurable reduction goals is a good step forward, though his view is that an international agreement might be needed ultimately.

Discussions after these presentations raised the issue of the monitoring of, and trade in, mercury contaminated fish and shellfish. Capacity in developing countries needs to be developed to assess and monitor mercury contamination of fish. Regional partner organizations (UNEP Regional Office for the Asia Pacific, WHO Western Pacific Region, WHO Southeast Asia Region, Regional Food and Agriculture Organization (FAO) may support the effort of monitoring and assessment of fish contaminated with methylmercury, by building capacities of countries in the Asia Pacific Region. A proposal was made by the representative from the Sustainable Development Policy Institute (SDPI) to involve the SAARC (South Asian Association for Regional Cooperation), a regional body in South Asia, which besides South Asian Countries (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) as members also has other neighboring countries as observers. Rather than constituting a new regional body for planning/executing/supervising mercury reduction projects in the concerned South Asian countries, SAARC, established in 1985 with a well established Secretariat and Council of Ministers could be tapped to monitor such projects involving chemicals such as mercury.

Session 3: Mercury Flow in Trade and Releases from Products **Synthesis of presentation and highlights of discussion**

The session was moderated by Eisaku Toda of the Japan Ministry of Environment

The ["2006 Report on Mercury Supply, Trade and Demand"](#) was presented by Peter Maxson, Director of the Concorde East West SPRL. The report revealed that primary mining, mercury from decommissioned chlor alkali cells, as well as by-product mercury remain significant sources of mercury supply. In terms of demand or gross consumption, the following are the highest in descending order: artisanal and small scale gold mining, vinyl chloride monomer production, chlor alkali production, batteries, dental amalgams, measuring and control devices, lighting and others. Among the regions in the world, highest demand is in East and Southeast Asia, followed by South Asia, and the EU (25 countries).

["Mercury Release from Products and Processes"](#) was presented by Michael Bender. He reiterated the common sources of mercury release from products such as dental amalgams, measuring devices, batteries, lamps, electrical switches and relays. He underscored the fact that while mercury release is common from processes such as chlor alkali production, VCM and artisanal gold mining, mismanaged mercury waste disposal is also a significant source of mercury release.

In response to a question on US manufacturers' commitment to phase out mercury use in batteries, NEMA explained the technical challenges to achieve the commitment, but was confident that it would achieve it by 2011.

The presenters' views on the priority areas for reducing mercury use were also queried.. Peter Maxson listed a number of areas including the chlor-alkali industry, vinyl chloride monomer production and batteries. Michael Bender mentioned the health care sector as a priority area.

In response to a question about the importance of mercury use in lamps in the global mercury demand, and properties for reducing this particular use, Michael Bender observed that many countries, including European countries, USA and Australia seemed to be shifting towards fluorescent lamps for energy efficiency considerations, and that 90% of compact fluorescent lamps consumed in USA are manufactured outside the country. NEMA pointed out that life cycle consideration showed that total mercury emissions from fluorescent lamps are less than that from conventional lamps if the emission from power plant is considered, and that the further challenge would be to reduce the mercury content in lamps.

Session 4A: Mercury Inventories and Databases Synthesis of Presentations and Discussion

The session was moderated by Hanili Ghazali of the Malaysia Department of Environment.

The ["UNEP Mercury Inventory Toolkit"](#) was presented by Kaj Madsen from UNEP Chemicals. He highlighted the need to provide guidelines and tools to enable assessment of mercury: hence the development of the UNEP Mercury Inventory Toolkit. He informed about the importance of preparing a mercury inventory. The presentation outlined the structure of the Mercury Inventory Toolkit which provides step-wise guidance on mercury inventory development. It also presented the Mercury Inventory Pilot Project that was launched in April 2007 in Asia with five participating pilot countries in the region. The results of the pilot studies will provide useful knowledge, experience and information that could be shared with other countries and that will enable the toolkit to be reviewed and, if appropriate, improved.

["Pilot Projects on Strengthening Inventory Development and Risk Management-Decision Making for Mercury: A contribution to the Global Mercury Partnership"](#) was presented by Brandon Turner of UNITAR. He informed about international concerns over mercury, including the UNEP Governing Council Decisions that provide strong impetus and global process for the mercury project. The Pollutant Release Transfer Registry (PRTR) was highlighted as a tool for the sound management of chemicals with three pilot projects being carried out in Chile, Ecuador and Panama. Having a mercury component in PRTRs includes development of a Hg emissions inventory report, preparatory capacity building workshop for developing a risk management assessment plan and to institutionalize mercury inventory within a national PRTR.

["Mercury Containing Products and Alternatives Databases"](#) was presented by Maria Doa, Director, National Program Chemicals Division, Office of Pollution Prevention and Toxics, USEPA. She gave an overview of the current situation regarding mercury containing products in the US, as well as the major US processes that use them. She also informed about the drivers to achieve reductions in use of mercury in products and in process, including laws, regulatory actions, voluntary programs, consumer demands and availability of substitutes. The presentation highlighted the U.S. and Global Product and Process Demand comparison which identified reductions in the use of mercury for most of the products and process, with some exceptions in electrical lighting. It provided insight into the US experience in developing the mercury containing products and alternatives database, and emphasized the importance of countries doing something similar. Two advantages cited in the development of mercury products database are: 1) to enable evaluation of mercury in products reduction efforts and 2) to provide an outreach about mercury containing products and alternatives. This mercury product database is comprehensive in scope, covering all states and product sectors, and already incorporates the Interstate Mercury Education and Reduction Clearinghouse (IMERC) database, which is largely manufacturer's data. This US database on mercury in products will be available by end of 2007.

The representative from Cambodia noted that the UNEP toolkit did not include the estimate of mercury releases from the open burning of human corpses as a ritual burial cemetery in the case of Cambodia, where 85% are Buddhist. UNEP assured that since Cambodia is one of the pilot countries to use the UNEP toolkit, whatever experiences and learning that Cambodia will have in this regard will be incorporated into the final toolkit, which is essentially a methodology for inventory development.

A question was raised on the processes available to enable the UNEP toolkit to be updated as more data and information become available. UNEP responded pointing out that the UNEP toolkit is currently being pilot tested in 5 selected countries. Results of the pilot

testing by end of 2007 will be the basis for updating the toolkit by early 2008. Further toolkit revisions will be considered in the light of experience and feedback.

The representative from Japan expressed that their experience has shown that some difficulties were encountered in estimating mercury emissions based on PRTRs because mercury releases are from impurities in coal. Japan verified if this was true for other countries present. There was no discussion that followed on PRTRs.

There was concern at reports of mercury releasing plants from the US being brought to developing countries. A query was made on a US legislation that prohibits such plants to be set up in developing countries. The US representative affirmed about the existence of such legislation but did not elaborate on the issue.

A question was made on UNEP consideration to doing the inventories on a regional basis because small countries have limited capability to do one nationally. It was emphasized by UNEP that the pilot test of the usability of the toolkit is being done at national level and the regional approach will be considered based on needs expressed at national level. Nevertheless, Governing Council 24 mandated UNEP to prepare best available emissions data to include at the regional level for presentation to GC25.

A comment was made on the capability of NGOs to help in generating data and information on mercury, in addition to their role of awareness and training activities. This was affirmed by UNEP and encouraged all stakeholders to make available data and information on mercury.

Session 4B: UNEP Mercury Programme Activities Synthesis of presentations and highlights of discussion

The session was moderated by John Atherton of the ICCM

The "[UNEP Mercury Programme](#)" was presented by Desiree Narvaez of UNEP Chemicals. The presentation provided an overview of the development of the UNEP programme which was established in 2003 in response to the Global Assessment of Mercury. The programme is aimed at assisting countries to understand and address mercury problems, including the activities that have been undertaken as a result. The programme was strengthened in 2005 and has facilitated supporting country efforts to reduce mercury pollution through its small grants programme. A further decision at the 24th Session of the UNEP Governing Council calls for further support of national and regional action plans and identified a number of priority areas for technical assistance and capacity building. GC 24/3 IV decision also calls for the development of an overarching policy framework for the UNEP Global Mercury Partnership. GC 24/3 decided further, to establish an ad hoc open-ended working group (OEWG) of Governments, regional economic integration organizations and stakeholder representatives to review and assess options for enhanced voluntary measures and new or existing international legal instruments

Participants expressed interest in the programme and requested technical and financial assistance to help address some of the priority areas. Participants acknowledged the need to update the Global Mercury Assessment in advance of the 25th UNEP Governing Council meeting.

A presentation on "[Partnerships towards Mercury Reduction on Products](#)" was likewise made by Desiree Narvaez of UNEP Chemicals. The presentation examined the current status of the UNEP Mercury Partnership Programme and the next steps arising from the Governing Council Decision 24/3. The Decision calls for an overarching framework for collaborative actions and the existing partnerships in artisan and small scale mining, coal combustion, the chlor-alkali sector, mercury containing products and air transport and fate

research. Activities relating to mercury containing products include awareness raising, capacity building and technical assistance to countries with focus on the health care sector, schools and consumer products.

Participants noted the goal to formalise an overarching partnership framework and requested that UNEP provide information on contacts within UNEP relating to the various aspects of the Mercury Programme.

A presentation "[Mercury Waste: Synergies with the Basel Convention](#)" was done by Ibrahim Shafii of the Secretariat of the Basel Convention. He gave a short introduction to the goals of the Basel Convention and the classification of mercury under this instrument. The Conference of the Parties recently mandated a new Strategic Plan Focus Area on Mercury and agreed to work in collaboration with UNEP to develop partnerships around the theme of environmentally sound management (ESM) of mercury wastes. Possible components of this plan include the development of both generic and product specific guidelines on ESM and pilot projects in selected countries looking at awareness raising and technical assistance.

Participants expressed support for the development of ESM guidelines for mercury wastes and requested the Basel Secretariat to ensure stakeholders were informed of the process and subsequent progress.

Session 5: Strategies and Approaches to Mercury Reduction in Products Synthesis of presentations and highlights of discussion

The introductory session to the concurrent sessions was moderated by Abhay Kumar of Toxics Link India.

An "[Overview of Technology Conversions or Change Over \(mercury to non-mercury containing products\)](#)" was presented by Peter Maxson. The presentation covered the availability, feasibility and reliability of mercury free technologies in various sectors and affirmed that on all these counts, mercury free alternatives are better than the conventional ones. In contrast to what some users claim as the issue of higher costs for alternatives, Maxson said that certain factors like insufficient awareness of mercury problems and the alternatives, lack of local suppliers and general inertia in converting to newer technologies are the barriers to any change to mercury free alternatives. Costs of conversion however remain a challenge for the chlor alkali industry. Data of major global mercury uses by year 2005 was also presented highlighting the small-scale/artisan gold mining as the major user of mercury followed by vinyl chloride monomer production and then chlor-alkali production. This is followed by mercury use in batteries, dental use, measuring and control devices and lighting industries.

["Mercury Reductions Resources and Initiatives: Interstate Mercury Education and Reduction Clearinghouse \(IMERC\)"](#) was presented by Maria Doa of the USEPA. The measures that US is undertaking to reduce mercury in products was highlighted, including three areas where the State initiatives were crucial in reducing mercury in products

- First, laws passed by States that require or encourage reduction of mercury in products
- Second, an innovative State-run database with a wealth of information on mercury products
- And third, some of the resources States provide to make it easier for other States and communities, and even individuals, to reduce the use of mercury in products.

Examples were cited such as laws preventing discarded mercury products from being buried in landfills or burned in waste incinerators. Laws and other regulatory measures generally pertain to labeling, bans, phase-outs, reporting by manufacturers and sellers. For example, some products in which mercury is added during manufacturing (eg fever thermometers; thermostats and measuring devices) have been banned by some states.

Another law requires manufacturers and distributors to report the mercury in products, and data are centralized in the "Interstate Mercury Education and Reduction Clearinghouse" (IMERC) database.

The discussion focused on the challenges to technology change. One proposed measure is an economic incentive such as tax credits. The EU has also preferred loans for conversion to mercury free alternatives in industries.

Concurrent sessions:

Two parallel discussions were held, with the participants choosing between participating in the session dealing with strategies to reduce mercury use and release in the health as well as school sectors and the other session dealing with strategies to reduce mercury use and release in consumer products.

After the respective presentations, participants responded to the Guide Questions:

GENERAL QUESTION: What can Governments, NGOs/civil society, industry/private sector do to contribute to a reduction in mercury use and release?

- In mercury containing products in the health care and school sectors
- In mercury containing consumer products

SPECIFIC QUESTIONS:

1. Which types of policy measures (regulations, legislation, administrative issuances, guidelines, etc.) do you have in your country for regulation and control of mercury containing products, including its waste management, storage and disposal?
2. Which are the main gaps or the missing regulatory measures needed to reduce demand of mercury containing products?
3. What economic measures or incentives are needed to promote substitutes or alternatives to mercury containing products?
4. What institutional arrangements and capacities must be in place to promote substitutes or alternatives to mercury containing products?
5. What other voluntary measures and activities can be done to reduce use of mercury containing products and its associated release?

**Session 5 A: Mercury Reduction in the Health Care and School Sectors
Synthesis of presentations and highlights of discussion**

Group discussion was facilitated by Josh Karliner from the HCWH and Tenzin Khorlo from Bhutan.

["The World Health Organization Policy Paper on Mercury in Health Care"](#) was presented by Hisashi Ogawa, Regional Adviser on Healthy settings and Environment, WHO Western Pacific Region. WHO supports a long term ban for use of mercury containing devices and effectively promote the use of safe alternatives. The ideal management of mercury waste in the health care setting, centered on the life cycle approach, including mercury clean up and waste handling and storage procedures was likewise presented.

["Strategies to Reduce Mercury in Health Care"](#) were presented by Josh Karliner, Coordinator of the Health Care without Harm. Strategies include proper policy measures such as regulation to support the use of mercury containing products alternatives, shifting markets and increasing demand as well as training and education in the health care sector.

["The Swedish Experience of Eliminating Mercury in the Health and Dental Sectors"](#) was given by Eva Sandberg of Sweden KEMI. This includes bans on the manufacture, use and trade of mercury in products. Policies on taxation of mercury containing products as well as insurance coverage for non mercury containing products also prove to be effective.

A ["Policy Paper on the Use of Mercury Containing Products in Schools"](#) was presented by Maria Doa of the USEPA. The tool that USEPA has recently developed on the "Chemical Management Resource Guide for School Administrators" to include the safe handling of mercury in schools was presented. The tool covers proper chemical management, such as purchasing, identification, inventorying, labeling, use, storage, security, and disposal designed to reduce the health and safety risks to students, teachers and school personnel, as well as to the environment.

["The Interagency Committee Approach to Mercury Spill in a School"](#) was presented by Irma Makalinao. She underscored the fact that success of the spill management in a school in the Philippines was largely due to interagency effort among all Government agencies involved.

The group identified the following strategies to reduce mercury contained in products in the health care and school sectors:

Mercury in the health sector:

- Philippines: Medical Societies should be encouraged to lead in the promotion of mercury free health care
- Lao PDR: Convince policy makers on the reduction of use of mercury
- Thailand : Raise awareness of the medical professionals, educate policy makers, ban use of pesticides use in households than contain mercury ; mercury containing medical devices that are sourced out from over-seas should be regulated
- Kuwait: Professional awareness and public awareness, government can subsidize for its nationals (mercury thermometer exchange)
- Iran: For the government – partial or sectoral ban of mercury; work with country office of WHO for raising awareness; for industry sectors-awareness raising, and legislation
- Pakistan: NGO can be very good in strengthening knowledge

Mercury in schools:

- Toxics Link: Awareness raising on the hazards of chemicals like mercury
- Qatar: Information on mercury handling, hazards, general action plan
- Palestine: Awareness on the use of mercury and its harmful effects
- USEPA: Chemical industries to adopt schools and train school personnel

Other Policy and Economic Measures: In addition, the participants identified other broad strategies to address mercury in products, namely:

- Technology transfer and infrastructure for disposal of mercury waste
- Need to be more selective about donated equipments that may already breakdown and therefore end up as waste
- On supply and demand- The mercury alternatives must not be expensive ;it will be good if the substitute price will come down
- Industries to set aside some funds for research on mercury free products
- Research on mercury alternatives should be funded
- Mercury containing devices exchange programs should be encouraged
- Policy makers- must balance environment and health

- Creation of national advisory committee on mercury or interagency committee will facilitate action at national and local levels

Session 5B: Mercury Reductions in Consumer Products

Synthesis of presentations and highlights of discussion

Group discussion was moderated by Joe Digangi of the Environmental Health Fund and Brandon Turner of UNITAR.

"Mercury Reductions in the Electrical Product Industry" was presented by Mark Kohorst of the National Electrical Manufacturers Association (NEMA). NEMA is an umbrella organization of electrical product manufacturers, dealing with advocacy, data collection and analysis, and technical support. The presentation emphasized that non mercury containing **electrical switches and relays**, used for industrial automation and medical imaging are available in the market, and that some manufacturers intend to phase out current mercury containing products.

Mercury is still used in a variety of lamps, such as in fluorescent and high intensity discharge **lamps**. Currently, there are no available alternatives to mercury containing lamps, but there are industry initiatives to reduce mercury content in lamps. Compact fluorescent lamps are energy efficient and mercury contributes to the efficient operation of fluorescent lamps. There is greater overall mercury reduction from lamps due to energy efficiency compared to mercury emission from coal combustion. Mercury in an enclosed lamp is harmless, but becomes a problem when the lamp breaks and the waste is mismanaged. One manufacturer is set to make available non mercury containing lamps by 2010. Eisaku Toda, of the Japan Ministry of Environment presented Japan's program on fluorescent lamp recycling. Japan's fluorescent lamp recycling services is open to other countries in the Asia Pacific Region.

"Shifting to Mercury Free Pressure Gauges" was presented by Peter Maxson. Examples of pressure gauges include barometers, manometers, and sphygmomanometers. Strategies to reduce mercury in these products include banning its sales of products containing mercury, offering subsidies for replacement devices, as well as advocacy for its non use among medical institutions.

"Mercury Reduction in Thermostats" was presented by Michael Bender. Studies including that of the University of Lowell showed that non mercury thermostats are accurate and reliable. To foster conversion, demand can be created for nonmercury thermostats, which will foster competitive pricing and eventually lower its cost. Incentives must also be provided for the sound management of waste from mercury containing thermostats. Activities of the US based thermostat recycling corporation were presented by NEMA.

"Mercury Reduction in Batteries" was presented by Mark Kohorst. In the US, the only batteries still containing mercury are the "button cell batteries". Button cell batteries are used in hearing aids, digital thermometers, insulin pumps, other medical devices, watches, toys, calculators. In 3 years, the US is expected to ban mercury in all types of batteries.

"Mercury Use in Cosmetics for Skin Whitening" was presented by Michael Bender. The presentation highlighted the increasing popularity and unmonitored availability of mercury containing skin cream in most Asian countries. Studies documented the hazardous effects of mercury containing skin creams in some Asian countries. Some countries have banned mercury in skin products, while others have required proper labeling of products. Mr. Bender said that the 2003 EU export ban must have caused the manufacture of these mercury containing creams outside of the EU such as in Asia. Some strategies

identified to address mercury containing cosmetics are: public awareness and monitoring; ban manufacture, export, import of these types of cosmetics; stringent customs rules; proper labeling of cosmetic products for the public's informed choice.

Traditional and Ritual Uses of Mercury was presented by Peter Maxson. The existence of mercury use in certain cultures, traditions, and rituals was highlighted. While these mercury containing products may not be a major consumer of mercury, potentially they cause health problems and can result in mercury emissions to air, wastewater, and solid waste. Some barriers to change noted are the secretive nature of activities, and the fact that often practices involving mercury are obliged by religious leaders. Strategies to reduce these products are awareness raising, working with religious leaders for them to understand the hazardous nature of the products, and the proper waste management and disposal of the products.

The group identified common capacity gaps for mercury containing products in many countries such as:

- Lack of data, knowledge, and awareness on mercury containing products as well as the importance of certain activities such as source separation and proper disposal
- Lack of capacity regarding data collection, analysis, and laboratory sampling
- Lack of infrastructure in place regarding legislation, waste management, consumer information
- For many countries the issue is management of mercury containing products and its waste rather than production or manufacture of products

The group likewise identified approaches that could be explored by countries to address to mercury containing consumer products:

- Capacity building: data collection, analysis, laboratory sampling
- Legislation and enforcement
- Green procurement, producer responsibility schemes
- Identifying primary manufacturers and reducing supply of mercury containing products
- Awareness raising and education
- Monitoring and reporting
- Waste management: source separation, identifying mercury recycling facilities
- Clearinghouse mechanism on Hg containing products and Hg free alternatives
- Establishing a regional partnership on mercury products, sharing lessons learned, recognizing synergies
- A need to share lessons learned and experiences to address this transboundary issue; current workshop is a contribution to this effort

Session 6: Sub regional Action Planning

The [definition and steps to action planning](#) was presented by Desiree Narvaez of UNEP Chemicals. An action plan describes the steps to be carried out and the implementation strategies for responding to a priority or delivering a program. An action plan should be formulated in the context of a country's political, economic and cultural situation. An action plan focused on mercury in products aims to define and put in place the necessary tools for implementation of national decisions as well as to facilitate mobilization of resources necessary to implement the plan. The following steps are the suggested steps in action planning : a) establish the context and analysis of the issue which includes a situation, gap, and stakeholder analysis b) formulate objectives c) identify relevant management options which could be legal, operational or voluntary measures d) establish the criteria for evaluation and prioritization which could include efficiency, affordability, and practicability e) evaluate and select management options to

be applied f) develop the action plan implementation strategy. The implementation strategy may include proposed activities, outputs, responsibilities, performance indicators as well as resource needs. Examples to the activities in an action plan focused on mercury in products would be: inventory and reporting, public information, awareness raising and education, policy development and legislation, technological and engineering improvement, institutional arrangements and monitoring as well as proper waste management to include mercury storage and disposal.

Participants were grouped by countries and sub regions.

The following are the highlights of the sub regional group action plans:

Group 1: [Laos, Cambodia, Thailand](#)

[Laos](#) and [Cambodia](#) identify policy development or the drafting of regulations and legislation relevant to mercury in products as their priority activity. Thailand has the relevant legislation and regulatory measures in place, but it lacks the enforcement and monitoring capacity. All 3 countries identify as their priorities the following: awareness raising, doing mercury inventories, green procurement and green labeling so as to promote non mercury containing products, strengthening cooperation among relevant Government agencies, as well as the need for mercury waste management guidelines.

Group 2: [Southwest Asia \(Bangladesh, Bhutan, Nepal, Pakistan, Iran\)](#)

For [Bangladesh](#) and [Pakistan](#), their priority is on the overall chemical infrastructure within their Ministries of Environment. Both countries propose a separate chemical section under the MOE with the appropriate technical staff. Bhutan and Nepal identify the need for awareness raising as well as doing mercury inventories. Iran sees the need to coordinate closely with its Ministry of Health to ban mercury containing dental amalgams as well as to reduce its total mercury imports. All countries propose technology transfer as a major strategy, capacity building of staff and personnel, as well as enhanced interagency collaboration.

Group 3: [Northeast Asia \(China, Japan, Mongolia\)](#)

[Japan's](#) priority activities include: improving the inventory of mercury use in products including those exported from Japan, improving the PRTR release inventory, introducing labeling for other mercury containing products such as lamps and medical devices, reviewing and updating its procurement guidelines, phasing out manufacture of mercury button cell batteries by 2011, and continuing its human and environmental monitoring. As part of international cooperation, Japan intends to extend its battery and lamp recycling activities in East Asia, establish an expert group on best available technology development and disseminate guidelines on the sound management of mercury waste, and it offers to coordinate the mercury use and release inventory. [Mongolia's](#) priorities are: to develop trade regulations, especially a possible ban on imports of mercury for use in its booming gold industry, environmental monitoring especially as regard gold mining, strengthening of national capacities, developing voluntary agreement between Government and industry. China proposed to have regulatory controls over its vinyl chloride monomer manufacturing as well as on its lamps and button cell batteries industries, raise awareness, as well as do mercury inventories.

Group 4: [Southeast Asia \(Myanmar, Philippines, Singapore, Malaysia\)](#)

[Myanmar's](#) priority is drafting of regulatory measures as well as designating and training appropriate staff to handle the mercury program in the Ministry of Environment. For Malaysia and the Philippines, there is a need for regulation of imported second hand electronics containing mercury that ultimately ends up as waste that is difficult to

manage. The 3 countries propose to have a stronger participation of developing countries at the World Customs Organization for a more precise classification of harmonized systems code for used products especially those containing mercury. All 3 countries also propose for a financing mechanism similar to the GEF, to enable funding relative to the mercury program. Singapore, Malaysia, Philippines, Myanmar also propose a gradual phase out of mercury containing products and promote substitutes through green procurement , providing economic incentives through tax measures ,as well as enhanced information dissemination.

Group 5: [West Asia \(Kuwait, Qatar, Palestine, Iraq, Oman\)](#)

All 5 countries identify the need for chemical management infrastructure with identified and trained staff as their priority. They all need to identify a specific unit in the concerned Ministries that will deal specifically with chemicals such as mercury. The need for awareness raising is still strong, much more on doing mercury inventories, as well as regulatory measures such as having the appropriate labels in products.

Group 6: [Pacific Islands \(Tuvalu, Kiribati, Nauru\)](#)

These Pacific Islands, with limited land mass and being recipients of imported products, identify management of mercury containing waste, especially its disposal, as their top priority. Their identified common capacity gaps are in the areas of awareness and knowledge (health and environmental impact), data on mercury, regulatory measures to address mercury importation, as well as the need to amend the existing environmental law to include specific mercury management options. All three countries ([Tuvalu](#), [Kiribati](#), and [Nauru](#)) plan to submit project proposals aimed at reducing risks from mercury pollution in their respective countries.

WORKSHOP CONCLUSIONS:

The workshop provided a broad information base ranging from general aspects on the environment and health effects and trade in mercury to specific cases of mercury in products to bring the participants to an equal footing with regard to background information.

The workshop furthermore provided ample possibilities for networking between the mercury and SAICM focal points, and this provided possibilities for exchange of information from different countries, ministries, and NGOs; creation of synergies through the possibility to draw on a broader experience basis. This was particularly important for the drafting of national action plans where the SAICM focal points were able to provide useful information based on their experience with implementation of SAICM.

The discussions at the workshops pointed to a number of areas of importance for decreasing the use of mercury in products. These main areas were identified as follows. :

- ◆ Raising awareness of political decision makers and consumers/users of mercury
- ◆ Information exchange to include inventory development and cooperation at the regional and national level
- ◆ Capacity building to transfer and apply best management practices and new technologies on substitutes to mercury containing products
- ◆ Other identified strategies

A number of different issues were raised for the above areas:

1. **Awareness raising and advocacy**, in order to decrease demand of mercury containing products, must be targeted at

- ◆ Political decision makers in relevant ministries in order to ensure funding of the necessary measures to decrease mercury use such as
 - the development of action plans that are targeted and costed, including action plans for disposal of waste containing mercury
 - development, implementation and enforcement of legislation such as phase-out/ban on sales and import; customs codes for products containing mercury; reporting by manufacturers and sellers
 - support the development and implementation of measures to decrease the use of mercury, such as green procurement and green labeling; producer responsibility schemes
 - identify primary manufacturers of mercury containing products and reduce the supply of mercury containing products by encouraging substitutes or alternatives
 - creation of a national advisory committee or interagency committee on mercury
 - ◆ Consumers/users of mercury in order to raise awareness on
 - the hazards and risks of mercury in products
 - alternatives to mercury containing products that are cost efficient
 - the need for proper waste management, including proper segregation, storage and waste disposal
2. **Information exchange to include inventory development** and cooperation at the regional and national level
- ◆ Establishment of a clearing house mechanism (could be the role of UNEP) to include information on alternatives/ substitutes to mercury containing products
 - ◆ Exchange of information between countries in the region on the development of inventories on mercury use and release
 - ◆ E-forums for networking
 - ◆ Create regional cooperation based on existing structures
3. **Capacity building** to transfer and apply best management practices and new technologies on substitutes to mercury containing products
- Technological awareness to promote substitutes to mercury containing products
 - Establishment of expert groups on Best Available Techniques
 - Application of BAT/BEP to reduce mercury emissions
 - Manpower and laboratory upgrading, especially for environmental monitoring
 - Education and training of personnel (such as school and health personnel) dealing with mercury containing products
 - Encourage research on alternatives to mercury use
4. **Other identified strategies**
- ◆ Funding, including through UNEPs small grant programme, to support country activities on mercury;
 - ◆ Expansion of the mercury partnerships in products;
 - ◆ Economic incentives, such as tax cuts for non mercury containing products, and incentives for sound management of mercury containing waste products
 - ◆ Loans from financial institutions for conversion to mercury free alternatives in industries

Closing of the Workshop:

The workshop was officially closed at 6 in the evening of 19 May 2007 by Kaj Madsen of UNEP Chemicals. In closing, he outlined the workshop conclusions and thanked the USEPA and the host Government, Thailand for the logistical support that contributed to the success of the workshop.

List of Participants
Workshop to Reduce Mercury Use and Release in Products for
the Asia-Pacific Region, 17-19 May 2007

GOVERNMENTS

BANGLADESH

Mr. MD. Abdul HAI
Analyst and Protocol Officer
Ministry of Environment and Forest
Bangladesh Secretariat
Building No. 6, 13th floor
Dhaka 1000
Bangladesh
Tel: + 0181 642 81 75, +880 2 7771
397
Fax : + 880 2 716 9210
Email: admin4@moef.gov.bd

BHUTAN

Mr. Tenzin KHORLO
Senior Environment Officer (Under
Secretary)
Technical Division
National Environment Commission
Secretariat
Choezong Lham
Thimphu
Bhutan
Tel No.: + 975 2 323 384/324 323
Fax No.: + 975 2 32 33 85
Email: tkhorlo@nec.gov.bt
tkhorlo@hotmail.com

CAMBODIA

Mr. Pichhara PHET
Chief Office
Department of Environmental Pollution
Control
48 Samdech Preah Sihanouk

Tonle Basacc, Chamkarmon
Phnom Penh
Cambodia
Tel: + 855 12 369 070
Fax: + 855 23 220 392
Email: phetpichhara@yahoo.com

CANADA

Mr. Raihan BUTT
Programme Engineer
Waste Reduction and Management
Division
351 St. Joseph Blvd. 13th floor
K1A OH3 Gatineau
Canada
Tel: + 1 819 934 80 79
Fax: + 1 8190 994 50 30
Email: raihan.Butt@ec.gc.ca

CHINA

Ms. Xiaodong JIAN
Senior Engineer
The Chemical Registration Centre
Of the State Environmental Protection
Administration of China
Beiyuan, Dayangfang No.8
100012 Beijing
P.R. China
Tel: + 8491 52 87
Fax: + 8491 7656
Email: jianxd@crc-sepa.org.cn

IRAN (Islamic Republic of)

Mr. Nassereddin HEIDARI
Deputy Secretary
National Authority for Chemicals
Conventions
Ministry of Foreign Affairs
Tel: + 98-21-61154448, 4421
Fax: + 98-21-66740094
Email: nheidari@mfa.gov.ir,
nheidari63@yahoo.com

Dr. Soroush MODABBERI
Water and Soil Pollution Bureau
Department of Environment
Tel: + 98-21-88267992
Fax: + 98-21-88264003
Email: modabberi@gmail.com,
modabberi@irandoe.org

IRAQ

Mr. Luay Sadeq Mohammed SALEH
Engineer
Planning and Follow up Director
Ministry of Environment
Alarasat
Baghdad
Iraq
Tel: + 964 7901 486761
Email: moen_iraq@yahoo.com
Luay_al_mohhtar@yahoo.com

JAPAN

Mr. Eisaku TODA
Deputy Director
Environmental Health and Safety
Division

Ministry of Environment
1-2-2 Kasumigaseki Chiyoda
100-8975 Tokyo
Japan
Tel: + 81 3 5521 8260
Fax: + 81 3 3580 3596
Email: eisaku_toda@env.go.jp

KIRIBATI

Mr. Farran REDFERN
Environmental officer
Environment and Conservation
Division
Ministry of Environment Lands' and
Agriculture Development
P.O. Box 234, Bikenibeu, Tarawa,
Kiribati
Tel: + 686 28334
Fax: + 686 28000/28593
Email: farran.ecd@nmelad.gov.ki

KUWAIT

Dr. Amel ARASHDAN
Kuwait Institute for Scientific
Research/CAL
P.O. Box 24885, Safat 13109, Kuwait
Tel: + 965 498 9060
Fax: + 965 498 9059
Email: arashdan@safat.edu.ka

LAO (People's Democratic Republic)

Ms. Phakkavanh PHSSAMAY
Deputy Director of Policy and Legal
Division, SAICM focal point
Department of Environment, Science
Technology and Environment Agency,
Prime Minister's office
Nahaideo Road, 2279 Vientiane
Lao PDR
Tel / Fax: +856 21 21 8712
Email: phakkavanh@hotmail.com
P_phakkavanh@yahoo.com

MALAYSIA

Ms. Hanili GHAZALI

Principal Assistant Director
Department of Environment
Level 1-4 Podium Block 2 & 3
Precindt 4
Federal Government Administrative
Centre
62574 Putrajaya, Malaysia
Tel: + 6038871 21 15
Fax: + 603 8888 6120
Email: nili@doe.gov.my

Email: most16@myanmar.com.mm
most22@myanmar.com.mm

MONGOLIA

Mr. Sharav DAGVA
Senior Officer
Sustainable Development and
Strategic Planning Department
Ministry of Nature and Environment
Government Building 3 Baga toiruu
Ulaanbaatar 11
Mongolia
Tel: + 976 11 261726
Fax.: + 976 11 32 14 01
E-mail: dagvas@yahoo.com
dagva@mne.gov.mn

Mr. Dolgorsuren SHIJIR-ERDENE
Officer in Charge of Soil Pollution
Environment and Natural Resource
Department
Ministry of Nature and Environment
Ulaanbatar-11,
Baga to:zuu-44
Government Build-3
Mongolia
Tel: + 976 11 2675 45
Fax: + 976 11 3214 01
Email: mne@mongol.net
Shijiree77@yahoo.com

MYANMAR

Ms. May Zin LWIN
Lecturer
Chemical Engineering Department
Ministry of Science and Technology
Nay Pyi Taw
Myanmar
Tel: + 9567 40 4004
Fax: + 9567 4040 11

NAURU

Mr. Elkoga GADABU
National Project Coordinator POPs
Project
Ministry of Commerce, Industry and
Resources
National Focal Point SAICM in Nauru
Government Office
Republic of Nauru
Tel: + 674 444 3133 ext 301
Fax: + ?
Email: popsnanu@yahoo.com

NEPAL

Mr. Laxman Prasad MAINALI
Joint Secretary
Law and Convention Division
Ministry of Environment, Science
and Technology
Singhdurbar, Kathmandu
Nepal
Tel: + 977 1 421 6731
Fax: + 977 1 422 54 74
Email: lpmainali2@yahoo.com
Laxman_mainali@hotmail.com

OMAN

Ms. Mouza Salim ALJAHWARI
Head of Data and Licences
Environmental Affair Directorate
Chemical Substance Department
Ministry of Regional Municipalities,
Environment and Water Resources
Tel: + 96824692417
Fax: + 968692462
Email: moza_jah@yahoo.com

PALESTINE

Mr. Naser ALBHAISI
Director
Chemical Substances and Emergency
Response
Environmental Protection Directorate
Environment Quality Authority
Elthawra St. Alnasser, Gaza,
Palestine
Mobile: + 972 599 604817
Fax: + 972 28 471 98
Email: environment@gov.ps
[nalbhaisi@hotmail.com](mailto:nalbhai@hotmail.com)

Email: mavhick_yao@yahoo.com,
meyao@cmb.gov.ph,
meyaw@emb.gov.ph

Dr. Barbara DJ. TIO
Supervising Science Research
Specialist
Integrated Program on Cleaner
Production Technologies
Industrial Technology Development
Institute
Manila
Philippines
Tel: + 632 837 2071
Fax: + 632 837 3167
Email: bdtio@dost.gov.ph

PAKISTAN

Mr. Muhib ALI PHULPOTO
Section Officer
Coordination
Ministry of Environment
CDA –Block IV G-6
Islamabad
Pakistan
Tel: + 92 51 9224 578
Fax: + 92 51 9224 890
E-mail: mphulpoto@hotmail.com

QATAR

Mr. Saad Mohammed AL-MAADEED
Armed Forces Environment Security
Unit
Qatar
Tel: +974 4615527
Fax: +9744615524
E-mail: qatar2030@hotmail.com

PHILIPPINES

Ms. Marivic E. YAO
EMB-DENR Chairman/Focal Person
for SIACM
Science Research Specialist II
Environmental Impact Assessment and
Management Division
Environmental Management Bureau-
Department of Environment and
Natural Resources (EMB-DENR)
Quezon City
Philippines
Tel: + 632 920 2241
Fax: + 632 920 2240

Mr. Mohammed AL-KUWARI
Secretary of the Qatar
National Committee for Prohibition of
Weapons
Tel: + 974 4666610
Fax: + 974 4660022
Email: alkuwari_10@hotmail.com

Dr. Gamal ALLOZY
Environmental Advisor
Armed Forces Environment Security
Unit
Tel: + 974 4615532
Fax: + 974 4615524
Email: gallozy@gatar.net.qa

Ms. Nouf Abdulla ALSULAITI
Supreme Council for Environment
Chemical Section
Chemist
Tel: + (00974) 44 3 7171 (290)
Email: nouf100001@yahoo.com

SINGAPORE

Mr. Koh CHIN YONG
Senior Scientific Officer
Chemical Control Section/Pollution
Control Department
National Environment Agency
Environment Building
40 Scotts Road # 12 -00
228231 Singapore
Republic of Singapore
Tel. No.: + 65 67 31 91 97
Fax No.: + 65 68 36 2294
E-mail: koh_chin_yong@nea.gov.sg

THAILAND

Mrs. Mingquan WICHAYARANGSARIDH
Deputy Director General
Pollution Control Department
92 Soi Phahol Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2138
Fax: (662) 298 2325
Email: mingquan.b@pcd.go.th

Mrs. Sunee PIYAPANPONG
Director of Waste and Hazardous
Substance Management Bureau
Pollution Control Department
92 Soi Phahol Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2424
Fax: (662) 298 2425
Email: sunee.p@pcd.go.th

Ms. Pornpimon CHAREONSONG
Director of Hazardous Substance
Section

Waste and Hazardous Substance
Management Bureau
Pollution Control Department
92 Soi Phahol Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2457
Fax: (662) 298 2425
Email: pornpimon.c@pcd.go.th

Ms. Pattreya POKHAGUL
Pharmacist 7
Office of International Affairs on
Health Consumer Protection,
Food and Drug Administration
Ministry of Public Health
Tiwanon Road, Nonthaburi
Thailand, 11000
Tel: (662) 5907289
Fax: (662) 5907287
Email: yingchong_2000@yahoo.com

Ms. Aurus KONGPHANICH
Pharmacist 7
Office of International Affairs on
Health Consumer Protection,
Food and Drug Administration
Ministry of Public Health
Tiwanon Road, Nonthaburi
Thailand, 11000
Tel: (662) 5907289
Fax: (662) 5907287
Email: aurus@fca.moph.go.th

Ms. Suwapiicha ATTAVORRAT
Pharmacist 4
Office of International Affairs on
Health Consumer Protection,
Food and Drug Administration
Ministry of Public Health
Tiwanon Road, Nonthaburi
Thailand, 11000
Tel: (662) 5907021
Fax: (662) 5907287
Email: picchy@fda.moph.go.th

Mr. Hansa RUKSAKOM
Director
Department of Diseases Control
Ministry of Public Health

Tiwanon Road, Nonthaburi
Thailand, 11000
Tel: (663) 845 5087
Fax: (663) 845 5207
Email: hansa_gwl@yahoo.com

Ms. Sangchom KOETKHAI
Epidemiologist
Non-communicable disease section
Bureau of Epicemiology Pollution
Department of Disease Control
Ministry of Public Health
Tiwanon Road, Nonthaburi
Thailand, 11000
Tel: (662) 5903316
Fax: (662) 5903337
Email: sangchom@health.moph.go.th

Ms. Saijai PINIJVECHAKAEN
Public Health Officer
Bureau of Occupational & Environmental
Health
Department of Diseases Control
Ministry of Public Health
Tiwanon Road, Nonthaburi
Thailand, 11000
Tel: (662) 5904383
Fax: (662) 5904388
Email: pinijs2006@yahoo.com

Mr. Somsak TRIAMJANGARUN
Counsellor
Department of International
Organizations
Sri Ayudhya Road, Bangkok
Thailand 10400
Tel: (662) 643 5000 ext 2293
Fax: (662) 643 5080
Email: somsaktr@mfa.go.th

Ms. Pornpit SILKAVUTE
Head, International Cooperation
Group
Health Systems Research Institute
Ministry of Public Health
Tiwanon Road, Nonthaburi
Thailand, 11000
Tel: (662) 951 1286 ext 124

Fax: (662) 951 1295
Email: pornpit@health.moph.go.th

Mr. Chatchanok NOPPORNPHAN
Agriculture Scientist 8
Department of Agriculture
Ministry of Agriculture Cooperatives
50 Phahon Yothin Rd., Chatuchak,
Bangkok
Thailand 10900
Tel: 662 5794116
Fax: 662 940 5942

Ms. Piyavadee LIMVORANUSORN
Environmental Officer
Industrial Air Pollution Division
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2339
Fax: (662) 298 2357
Email: lpiyavadee@yahoo.com

Ms. Rontida SODSAI
Environmental Officer
Waste and Hazardous Substances
Management Bureau
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2419
Fax: (662) 298 2425
Email: prontida.s@pcd.go.th

Dr. Pornsri SUTHANARUK
Scientist
Environment Lab
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2580 or (662) 298 2550
Fax: (662) 298 2819 or (662) 298 2552
Email: pornsri.s@pcd.go.th

Ms. Paravuth
RATTANACHONGKIAT
Environmental officer

Marine Environment Division
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2239
Fax: (662) 298 2240
Email:
marinepollution_pcd@yahoo.com

Ms. Chutamad KAVINSEKSAN
Environment officer
Coastal Water Quality Division
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2242
Fax: (662) 298 2240
Email: chutamadk@pcd.go.th or
plym1146@yahoo.com

Mr. Patarapol TULARAK
Environmental officer
Hazardous Waste Management
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2436
Fax: (662) 298 2427
Email: pinpro@gmail.com

Dr. Sarawut THEPANONDH
Environmental Scientist
Air Quality and Noise Management
Bureau
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2367
Fax: (662) 298 2392
Email: sarawut.t@pcd.go.th

Ms. Sasivimon NAEWTHONG
Environment officer

Waste and Hazardous Substances
Management Bureau
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2404
Fax: (662) 298 2425
Email: sasivimon.n@pcd.go.th

Ms. Nuchida
RUNGTHAWORNWONG
Environment Officer
Waste and Hazardous Substances
Management Bureau
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2287
Fax: (662) 298 2765
Email: nuchida.r@pcd.go.th

Ms. Pattanan TARIN
Environment Officer
Waste and Hazardous Substances
Management Bureau
Pollution Control Department
92 Soi Phahon Yothin 7,
Samsen Nai, Phayathai
Bangkok, Thailand, 10400
Tel: (662) 298 2766
Fax: (662) 298 2765
Email: pattanan@pcd.go.th

TUVALU

Mr. Melton TAUETIA
Coordinator POPs Environment
Department
Ministry of Natural Resources and
Environment
Tel: 688 20189 / 20186
E-mail: popspro@tuvalu.tu

INTER-GOVERNMENTAL ORGANIZATIONS (IGOs)

WORLD HEALTH ORGANIZATION (WHO)

Dr. Hishashi OGAWA
Regional Adviser in Healthy Setting
and Environment
Building Healthy Communities and
Populations
World Health Organization WHO
Manila
Philippines

Palais des Nations,
CH 10
Switzerland
Tel: + 41 22 917 8524
Fax: + 41 22 917 8047
Email: Brandon.turner@unitar.org

UNITED NATIONS INSTITUTE FOR TRAINING AND RESEARCH (UNITAR)

Mr. Brandon TURNER
Fellow
Programmes in Chemicals, Waste and
Environmental Governance
UNITAR

Ms.Suteewan THAMMAGOWIT
Fellow
Programmes in Chemicals, Waste and
Environmental Governance
UNITAR
Palais des Nations,
CH 10
Switzerland
Tel: + 41 22 917 8524
Fax: + 41 22 917 8047
Email:
suteewan.thammagowit@unitar.org

NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

HEALTH CARE WITHOUT HARM-SOUTH EAST ASIA

Ms. Faye FERRER
Programme Officer
Mercury Workgroup
Health Care Without Harm-Southeast
Asia
Unit 330 Eagle Court Condominium
26 Matalino Street – Diliman
1100 Quezon City
Philippines
Tel: +632 928 7572
Fax: + 63 2 926 26 49
E-mail: faye@hcwh.org

Scientist
Environmental Health Fund
Tel.: + 1 312 566 0985
Fax.: + 1 312 408 0682
E-mail:
digangi@environmentalhealthfund.org

ENVIRONMENTAL HEALTH FUND

Mr. Joseph DIGANGI PhD

TOXICS LINK

Mr. Abhay KUMAR
Senior Programme Officer
Chemicals and Health
Toxics Link
H2 Ground floor Jungpura Extension
11014 New Delhi
India
Tel No.: + 91 11 2432 8006
Fax No.: + 91 11 2432 1747
Email: abhay@toxicslink.org,
akumarabhay@gmail.com

**BASEL ACTION NETWORK –
ASIA-PACIFIC**

Mr. Richard GUTIERREZ
Director
Basel Action Network – Asia Pacific
No. 320 Eagle Court, 26 Matalino St.
Barangay Central
Quezon City 1100
Philippines
Tel: (632) 929 0376
Fax: (632) 436 4733
Email: rgutierrez@ban.org

**INTERNATIONAL COUNCIL ON
MINING AND METALS**

Dr John K. ATHERTON
Program Director - Materials
Stewardship
International Council on Mining and
Metals
35 Portman Square
London W1H 6LR
United Kingdom
Tel: +44 20 7467 5078
Fax: +44 20 7467 5079
e-mail: john.Atherton@ICMM.com

**SUSTAINABLE DEVELOPMENT
POLICY INSTITUTE (SDPI)**

Dr. Mahmood A. KHWAJA
Sustainable Development Policy
Institute (SDPI)
P.O.Box 2342, Isalmabud
Pakistan
Tel: + 0092-51-2278134
Fax: + 0092-51-2278135
E-mail: khwaja@sdpi.org,
khwaja@gmail.com

**INSTITUTE FOR GLOBAL
ENVIRONMENTAL STRATEGIES**

Dr. Akira OGIHARA
Project Manager
2108-11 Kamiyamaguchi, Hayama,
Kanagawa, 240-0115
Japan
Tel: +81 46 855 3883
Fax: +81 46 855 3809
e-mail: ogihara@iges.or.jp

**ASIAN INSTITUTE OF
TECHNOLOGY**

Ms. Rajani Amatya RAJBHANDARI
Project Associate
Urban Environmental Management
School of Environment Resources and
Development (SERD)
AIT P.O. Box 4 Klong Luang,
Pathumthani 12120 Thailand
Tel : +66 02 524 6264, 66 8 5843 6747
Email : rajani_purna@yahoo.com

RESOURCE PERSONS

U.S. ENVIRONMENTAL PROTECTION AGENCY

Dr. Maria J. DOA
Director
National Programme Chemicals
Division
Office of Pollution Prevention and
Toxics
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., 3903R
Washington, DC 20460
USA
Tel: 202.566.0718
Fax: 202.566.0471
E-mail: mercurypolicy@aol.com

MERCURY POLICY PROJECT

Mr. Michael BENDER
Director
Mercury Policy Project/
Zero Mercury Working Group
1420 North Street
Montpelier, VT USA 05602
Tel. No.: + 1 809 223 9000
Fax No.: + 1 809 223 7914
Email: mercurypolicy@aol.com

CONCORDE EAST/WEST SPRL

Mr. Peter MAXSON
Director
Concorde East/West Sprl
10 ave. René Gobert
B-1180 Brussels
Belgium
Tel/Fax: + 32 2 374 36 47
Email: concorde.ew@tele2allin.be

PACIFIC BASIN CONSORTIUM FOR ENVIRONMENTAL HEALTH SCIENCE ASSOCIATION

Ms. Irma MAKALINAO
Board of Directors
Manila
Philippines
Tel:
Fax: + 632 521 8251
Email: docirmam@yahoo.com

HEALTH CARE WITHOUT HARM

Mr. Joshua KARLINER
International Team Coordinator
Health Care Without Harm
1958 University Ave
Berkeley CA 94704
USA
Tel: 1- 510-848-5343, ext 107
E-mail: josh@hcwh.org

SWEDISH CHEMICALS AGENCY

Ms. Eva SANDBURG
Senior Adviser in International Affairs
International Secretariat
Swedish Chemicals Agency
P.O. Box 2
SE-172 13 Sundberg
Sweden
Tel.: + 46 8 519 412 26
Fax: + 46 8 735 76 98
E-mail: eva.sandberg@kemi.se

SECRETARIAT OF THE BASEL CONVENTION (SBC)

Mr. Ibrahim SHAFII
Programme Officer (Technical)
Secretariat of the Basel Convention
15 Chemin des Anémones
1219 Geneva
Switzerland
Tel: (41 22) 917 8636
Fax: (41 22) 797 3454

Email: ibrahim.shafii@unep.ch

**NATIONAL ELECTRICAL
MANUFACTURERS
ASSOCIATION**

Mr. Mark A. KOHORST
Senior Manager
Environment, Health and Safety

Suite 1752
1300 N-17th Street
Rosslyn, VA 22209
USA
Tel: +703 841 3249
Fax: +703 841 33 49
E-mail: mar_kohorst@nema.org

UNEP

Ms. Desiree NARVAEZ
Programme Officer
Mercury and other Metals Programme
UNEP Chemicals Branch DTIE
International Environment House
Chemin des Anémones 11-13
Chatêlaine
1219 Geneva
Switzerland
Tel: +41 22 917 8865
Fax: +41 22 797 3460
E-mail : dnarvaez@chemicals.unep.ch

Mr. Kaj MADSEN
Senior Programme Officer
UNEP Chemicals Branch DTIE
International Environment House
Chemin des Anémones 11-13
Chatêlaine
1219 Geneva
Switzerland
Tel : + 41 22 917 8258
Fax : + 41 22 707 3460
E-mail : madsem@chemicals.unep.ch

Mr. Atul BAGAI
Regional Office for Asia/Pacific
UN Building, Rajdamnern Ava.
Bangkok 10200 Thailand
Tel: + 662 288 1662
Mobile: +66 8 9 2004926
Fax: 622 280 3041
E-mail: bagai@un.org

