
# TECHNICAL AND FINANCIAL REPORT FOR EUROPEAN ENVIRONMENTAL BUREAU

# A REPORT OF LOCAL, NATIONAL, REGIONAL AND INTERNATIONAL ACTIVITIES IN ADDRESSING THE MERCURY CHALLENGES FACING SOUTH AFRICA

## PHASE TWO REPORTING

Written: Euripides Euripidou (Rico)
Date: November 2006

# TECHNICAL AND FINANCIAL REPORT FOR EUROPEAN ENVIRONMENTAL BUREAU

## TABLE OF CONTENTS

**Background**

The groundWork Phase I Proposal recognised that the awareness of the general public on mercury issues in South Africa is generally poor. However, groundWork had been working with hospitals and civil society organisations and the public to inform their thinking on waste management and the dangers of mercury in hospitals.

Furthermore the Thor chemicals mercury contamination and clean up and responsible disposal process has been stagnant for more than a decade. This was characterised by the lead government environment agency (The Department of Environment and Tourism - DEAT) delaying in taking meaningful action on the clean up of the contaminated land, water and buildings at the Thor Chemicals site. The phase I proposal was limited in its scope around the Thor chemicals site, in that it only aimed to:

"encourage government to tackle the issue of mercury pollution more seriously through strong public awareness among all the stakeholders (government, industry, community), using an international framework on binding rules on the management of mercury with the aim to phase out its use within society and through mercury reduction strategies" with the following challenges:

**The challenges:**

Lack of strong co-ordinated civil society work on mercury

a) Lack of technical expertise amongst civil society to strengthen their campaigns for appropriate cleanup and disposal options
b) Lack of appropriate hazardous waste disposal facilities in South Africa
c) Lack of adequate understanding of the issue and recognition of the problem regarding Thor mercury contamination amongst civil society.
d) Inadequate and up to-date data/documentation of environmental and health impacts resulting from Thor mercury contamination
e) Need to link with European and other international emerging strategies on mercury.
f) Need to communicate to SA developments at European and Global levels.
g) Making sure that mercury does not re-enter the market.

Following this phase of activities regarding mercury, groundWork acknowledged that the Phase I activities were limited in their ability towards awareness raising among stakeholder groups instead of aiming to understand the extent of mercury activities and pollution in South Africa and to better assess the impact of mercury in a South African Context. In order to achieve this goal a more proactive approach was required querying actual mercury activities (and stakeholders) and potential mercury levels, as a first approach, to assess the mercury situation in South Africa.

**The following activities were defined in order to achieve this goal. Table 1 below shows Gaps and Strategy that were defined for specific activities and actions for the EEB/GroundWork Phase II Mercy Research Project.**

**Table 1: Gaps and Strategy for EEB Phase II Research**

| | Activity | Actions | Deliverables |
|---|---|---|---|
| 1 | Assess National Chemical Profile for specific mercury activities<br>• Review previous work undertaken<br>• Review existing initiatives | A1: Review the South African National Chemical Profile prepared by the Department of Environment and Tourism (DEAT) and assess whether mercury has been identified as a priority pollutant.<br><br>A2: Establish what is the DEAT's position on mercury assessment in South Africa<br><br>A3: Establish what mercury activities the DEAT is undertaking in South Africa<br><br>A4: Engage with the DEAT to identify and determine priority activities for mercury assessment for South Africa | D1 short report from the review, position, activities<br><br>D2 organise a meeting with DEAT, write short report outcomes |
| 2 | Assess mercury imports into South Africa | A1: Determine mercury imports into South Africa and how these are distributed and used | D1 Report on SA mercury imports/exports |
| 3 | Evaluate the Africa Stockpiles Program (ASP) for mercuric pesticides and disposal technologies (South Africa & NEPAD?) | A1: Determine whether the Africa Stockpiles Program (ASP) in Southern Africa (NEPAD) has any specific mercury activities within it.<br><br>A2: Evaluate whether any obsolete stockpiles of pesticide contain mercuric compounds | D1 short report /note on ASP activities<br><br>D2 short report on composition of South African stockpiles |
| 4 | Follow up Thor Chemicals process | A1: Evaluate/assess disposal options<br><br>A2: Undertake Conceptual Site Model (CSM) of the facility and health risk assessment (potential) of the residents nearby.<br><br>This will be a conceptual risk assessment hypothesizing linkages between sources of pollution, the pathways they might potentially follow and the receptors they may potentially affect – if there is any chance these linkages are complete we will notify and lobby the regulator to take action and investigate these in depth (taking samples etc.) | D1 report from Thor study – disposal options and CSM health assessments |
| 5 | Follow up and attend chemical safety processes and focal points in South Africa and abroad (SAICM/WHO/UNEP). | A1: Arrange meetings at National level with SAICM focal points and establish activities related to mercury<br>A2: Determine what SAICM activities are proposed for mercury – lobby activities where these do not exist | D1 outcome note from meetings<br><br>D2 make a formal submission on mercury |
| 6 | Set up a meeting with the National Department of Health (DoH) to establish and discuss phase out | A1: Establish what mercury activities, advisories, and phase out activities the department is undertaking | D1 Questionnaire survey to DoH<br><br>D2 outcome note from |

| | | | |
|---|---|---|---|
| | activities regarding mercury in health care measuring devices | A2: Begin discussions regarding mercury phase out in measuring devices in hospitals | meetings<br><br>D3 Report on proposed activities |
| 7 | Print hospital waste manual and also assess how it is used in State Hospitals around the country to whom it was sent. | A1: Print and distribute hospital waste manual<br><br>A2: Send follow up questionnaire to recipients asking specifically what mercury related activities they are undertaking regarding: spills collection, storage and disposal, and phase out. By the way, after you assess the questionnaire, what will you do? | D1 (1500) copies of the gW hospital waste manual<br><br>D2 short report of questionnaire analysis of responses |
| 8 | Undertake a situational assessment of all other NGO's involved in mercury work in SA | A1: Follow up with all other NGO's involved in mercury work in SA and;<br><br>A2: Convene a meeting/workshop to agree a common ground and develop a way forward<br><br>A3: Prepare a position with other CSO's for Nairobi 2007 and dovetail activities with international role players (EEB) | D1 establish a list of NGOs working on Hg<br><br>D2 Meeting in early October<br><br>D3 Signed declaration for Nairobi 2007 |
| 9 | Follow up groundWork greening hospitals project and assess mercury and health care waste management in these 2 hospitals | A1: Follow up and report what the different Provincial DoH procurement policies regarding mercury are<br><br>A2: Follow up and report what phase out activities related to mercury in these hospitals are | D1 Report on procurement policies, phase out activities |
| 10 | Assess the chlor-alkali industry in South Africa | A1: Undertake a situational analysis (how many, where, who)<br><br>A2: Determine if mercury stockpiles exist?<br><br>A3: Undertake site visits and (CSM) health risk assessments<br><br>A4: Determine a phase out evaluation | D1-D4 situation analysis report |
| 11 | Follow up with South African focal points for MEA to assess what is being done on mercury (if time and money is available follow this up with the NEPAD focal points for these conventions). | A1: Establish what is being done on mercury with focal points (in South Africa) for all the listed conventions. Lobby for mercury issues on each convention.<br>• Stockholm Convention of 2001,<br>• The Basel convention of 1989,<br>• The Rotterdam Convention of 1998,<br>• The Montreal protocol of 1989,<br>• The Convention of Biological Diversity of 1992 and<br>• The Bamako Convention of 1991. | D1 short note identifying focal points and defining mercury activities and actions |
| 12 | Track and make | A1: Lobby the regulator for inclusion of mercury | D1 Review coal fired power |

| | | | |
|---|---|---|---|
| | comments on Environmental Impact Assessments (EIA's) for proposed coal fired power stations and push for better abatement technologies, monitoring, evaluation and regulation. | in the EIA process<br><br>A2: Lobby for stricter air quality standards in line with internationally accepted standards<br><br>A3: Review BAT for mercury emissions abatement and monitoring<br><br>A4: Lobby for BAT mercury emissions monitoring and abatement | stations EIA's and submit comments to DEAT authorities.<br><br>D2 Letter to Environ. Ministry (DEAT) for mercury to be listed as a priority pollutant with an AQ standard<br><br>D3 Report on BAT in coal power stations and letter to regulator/ DEAT |
| 13 | Generally assess and track legislative processes on mercury in South and Southern Africa | A1: Review air quality standards<br><br>A2: Review standards for water, land | D1 Review SA AQ quality standards and develop a position paper to be submitted to authorities |
| 14 | Contribution to the global / European mercury campaigns –<br>• Attending international meeting and highlighting and lobbying for global mercury ban.<br>• Lobbying politicians when necessary to put pressure for limited and safer mercury trade, use, storage, and standards etc. | A1: Attend the African Regional Meeting on Strategic Approach to International Chemicals Management (SAICM) which will be held in Cairo, Egypt, from 11 to 14 September, 2006.<br><br>A2. Attend the IPEN General Assembly (2006) to be held 20-22 September in Budapest, Hungary.<br><br>A3: Attend the IFCS Forum V to be held 23-29 September in Budapest, Hungary.<br><br>A4:Attend the EC International conference on Mercury 26-27 October 2006 in Brussels.<br><br>A5: Attend the EEB NGO meeting to be finalised after or before the EC mercury meeting. | D1 Attend meetings and make formal submissions regarding mercury – summarise submissions in a short report. |
| 15 | Nairobi preparatory meeting and activities | A1: In advance of Nairobi 2007 groundWork plans to organize a civil society workshop and facilitate a unified civil society position in South Africa on mercury – supporting a global ban on exports.<br><br>A2: In October 2006 at the Friends of the Earth (FOE) Africa Regional Meeting and FOE International Bi-annual meeting in Lagos Nigeria - groundWork (in its capacity as the FOE member for South Africa) plans to bring together African Civil Society partners lobby for and develop a unified position and declaration on mercury. | D1 report from meeting<br><br>D2 Arrange a FOE Africa side meeting on Mercury<br><br>D3 report from FOE meeting |

**Activity 1: Review the South African National Chemical Profile**

The South African National Chemical Profile was prepared by the Department of Environment and Tourism (DEAT) and assess whether mercury has been identified as a priority pollutant.

Within the South African National Chemical Profile prepared by the Department of Environment and Tourism (DEAT) there is only one reference to heavy metals and in total there are only 12 references to mercury listed below. These references to mercury are only in passing and do not relate to any meaningful specific issues on chemical safety. Table 3B, 4B and 10.1.2. below are excerpts the South African National Chemicals Profile that relate to mercury. 10.1.2. refers to the UNEP Global Mercury Assessment Project, however within the department there is no nominated focal point and nobody I spoke with could describe any activities under this program.

Table (3b) of the South African National Chemical Profile shows types of problems in chemical production, import, export and use

| No. | Nature of Problem/Issue | City/Region | Brief Description of Problem | Reference |
|---|---|---|---|---|
| **1.6** | Importation of hazardous material (mercury sludge) | KwaZulu-Natal | The importation of hazardous material was mishandled by allowing a chemicals company to import toxic mercury while failing to ensure that the company was adequately held accountable for its activities. The commission, set up to probe the mercury recycling operations, said it had found that both the company and the previous government were to blame for the stockpiling of more than 3000 tons of toxic waste in the country. The commission said that the company concerned had exploited loopholes in SA's fragmented legislation to bring in toxic waste it could not handle. | Business Day (News view ed.), 14 May 1997, page 2 |

Table 4.B of the South African National Chemical Profile shows substances banned and restricted by the National Department of Agriculture

| | |
|---|---|
| Mercury compounds. | These were withdrawn from all agricultural uses in 1974. In 1983 the use of all mercury compounds on seed, bulbs, tubers, stems or any other plant material was banned. |

Section 10.1.2 of the South African National Chemical Profile identifies the DEAT as a member of the United Nations Environmental Programme (UNEP) Global Mercury Assessment Project.

Furthermore in an effort to establish what is the DEAT's position on mercury assessment in South Africa is, I forwarded the following questionnaire (below) to the directorate 'Chemical & Hazardous Waste Management' in order to understand what activities the directorate undertakes regarding mercury. From the answers with the questionnaire attached below it is quite apparent that the DEAT does in fact not have any specific programs or activities aimed at heavy metals. This questionnaire was then forwarded to the National Department of Health: Environmental Directorate and National Department of Agriculture, Directorate: Food Safety & Quality Assurance as advised by the DEAT response. No response was received from the National Department of Health: Environmental Directorate and the National Department of Agriculture referred me back to the National Department of Health: Food Control Directorate. Once all these department had been queried without response it is clear that there are no National activities aimed at evaluating or informing the public on the risks relating to mercury (and possibly other heavy metals). This affords groundWork the opportunity to work closely with government to advise and structure their activities in order to assess mercury in a country context.

Box 1: Questionnaire to determine the DEAT's position on mercury assessment in South Africa (responses are highlighted)

Dear Sir/Madam

I am working on a project to understand mercury better in the South African context and have prepared some questions regarding mercury policy generally in KZN and more broadly South Africa. I would be very grateful if you considered and answered these questions as soon as possible which might perhaps act as a catalyst for further discussions regarding this issue generally. If you cannot answer these questions I would be very grateful if you forwarded these questions to a colleague at the National level for a broader South African perspective.

I have organized the questions into the 5 following subjects:

* HEALTH CARE
* FISH
* DENTAL AMALGAMS
* VACCINES
* MISCELLANEOUS

HEALTH CARE

1. Is there a general policy to phase out mercury from health care in any Province? Yes/No, and South Africa? Yes/No

Have no information on this and recommend that you liaise directly with the Department of Health on matter related to Legislation and inventory.

2. If yes, who is the responsible authority?

See above comment

3. Are there any specific health advisories or legislation on mercury in place in South Africa? Yes/No

See comments for No.1

4. Are they guidelines or restrictions on the use and disposal of mercury in hospitals in the province/nationally? Yes/No

See comments for No.1

5. If yes, on what categories of products to they apply?

See comments for No.1

6. Are there any State hospitals using mercury-free sphygmomanometers (equipment used in blood pressure measurement)? Yes/No

See comments for No.1

7. If yes, do you know which brand this is?

See comments for No.1

8. Are they examples of phase-out programs in any hospitals you are aware of ? Yes/No

See comments for No.1

9. Relevant Website or hyperlink?

See comments for No.1

10. Are they any other government organizations or stakeholders in South Africa that you know of involved in this issue of mercury phase out? Yes/No

National Department og Agriculture and the can be consulted at:
Mr. Shadrack Phophi
Technical Advisor
Food Safety and Quality Assurance
Tel: (012) 319-6949
E-mail: shadrackp@nda.agric.za

OR

Department of Health
Mr. S.M Jikijela
Harzadous Management and Pollutant Information
Tel: (012) 312 0270
E-mail: JikijS@health.gov.za

OR

South African Mercury Assessment Forum
Dr. Joy Learner
CSIR Water Resources
Tel: (021) 888-2553
E-mail: jlearner@csir.co.za

Remarks:

N/A.

FISH

11. Are there any recommendations to limit fish consumption, i.e. national fish consumption guidelines, in women of childbearing age, pregnant women, infants and children in South Africa? Yes/No

Information not available

12. If yes, for which group(s)? General public Yes/No - Infants Yes/No - Children Yes/No - Women in childbearing age Yes/No - Pregnant women Yes/No

Information not available

13. Relevant Website or hyperlink?

Information not available

14. Are there any national or sub-national bio-monitoring programs that measure mercury levels in the population? Yes/No and in fish? Yes/No

Information not available

Remarks:

N/A.

DENTAL AMALGAMS

15. Are there guidelines on the use of mercury in dental fillings? Yes/No

Information not available: Contact Health

16. Are there guidelines regarding public information about the risks and benefits of dental filling materials? Yes/No

Information not available: Contact Health

17. If yes, for which group(s) of individuals? General public Yes/No - Infants Yes/No - Children Yes/No - Women in childbearing age Yes/No - Pregnant women Yes/No

Information not available: Contact Health

18. Do national/sub-national insurance programs reimburse or pay for fillings? Non-amalgams Yes/No - Amalgam Yes/No

Information not available: Contact Health

19. Is there a national/sub-national dental society? Yes/No If yes, do they have guidelines for the use of mercury amalgam? Yes/No

Information not available: Contact Health

Remarks: N/A.

VACCINES

20. Any guidelines related to the use of thiomersal in vaccines? Yes/No

Information not available: Contact Health

21. Is there a timetable for phase-out? Yes/No

Information not available: Contact Health

22. Is the public informed about vaccines containing mercury? Yes/No

Information not available: Contact Health

23. Is there a national/sub-national society of pediatricians? Yes/No

Information not available: Contact Health

Remarks: .....

MISCELLANEOUS

24. What kinds of collection practices are in place in that you are aware of? For instance, pharmacies or local municipalities collecting mercury from e.g. broken thermometers?

Information not available.

If you happen to know where I can find the information below (website, etc), I would be very grateful if you could let me know. In case you have other contacts within your ministry and you know who might be able and willing to help, let me know as well.

Thanks again & kind regards!
Rico Euripidou

**Activity 2: Assessment of mercury imports into South Africa**

| | Activity | Actions | Deliverables |
|---|---|---|---|
| 2 | Assess mercury imports into South Africa | A1: Determine mercury imports into South Africa and how these are distributed and used | D1 Report on SA mercury imports/exports |

Data from the Global Mercury Project [GMP] assessments of mercury trade shown in Figure 1 below reveal that between 2000 and 2004 South Africa imported 59438 Kg and exported 80849 kilograms of mercury. Most of the imported mercury comes from the Netherlands (36186 Kg), however South Africa only reported receiving 5608 Kg from the Netherlands. Furthermore Swaziland reported exporting 20000 Kg of mercury to South Africa with no reported import data. This indicates that mercury s traded legally and illegally in South Africa with possible cross border trafficking taking place into Southern African destinations. Worryingly most of South Africa's mercury imports are from OECD countries including the Netherlands, Spain, UK, USA and Russia. It would be interesting to learn what most of the imported mercury into South Africa is labelled as – anecdotal data from Brazil indicate that most of their imports are labelled as imported for dentistry but ultimately destined for ASM. South Africa reported total exports of 80849 Kg of mercury between 2000 and 2004. These exports are reported destined for Southern African destinations such as Namibia, Botswana, Zimbabwe, Swaziland, Congo, Mozambique, Zambia, Lesotho and India among others. 45859 Kg was reportedly exported to Saudi Arabia in 2001 and 165 031 Kg and 71 753 Kg was reported to be received by Botswana in 2000 and 2001 respectively.

This clearly indicates that there are serious gaps in our understanding of the trade flows of mercury into and out of South Africa, potentially an import destination for much of the unregulated mercury destined for ASM in Southern Africa. In this regard much work can potentially be done I the form of a situational analysis to better quantify these trade flows, assess the sensitivity and effectiveness of the South African customs and excise systems (and Green Customs Initiative).

**Figure 1: Global Mercury Project Import and Export Date for South Africa**

| Target country: | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Period** | **Exporting partner countries** | | | **South Africa** | | | | **Importing partner countries** | | |
| | | Reported exports to target country | | Reported imports from partner country (on left) | | Reported exports to partner country (on right) | | Reported imports from target country | | |
| Year | Country name | Kg mercury | Value ($US) | Kg mercury | Value ($US) | Kg mercury | Value ($US) | Kg mercury | Value ($US) | Country name |
| 2000 | Areas, nes | | | 3 | 204 | 253 | 727 | | | Areas, nes |
| 2000 | Finland | | | 3437 | 19626 | | | **165031** | 2854 | Botswana |
| 2000 | Netherlands | 7875 | 41780 | 898 | 4548 | 1125 | 2071 | | | Dem. Rep. of the Congo |
| 2000 | Russian Federation | | | 3625 | 17113 | 5937 | 12438 | 7000 | 25557 | India |
| 2000 | Spain | | | 3437 | 17650 | 30 | 945 | | | Mozambique |
| 2000 | Swaziland | **20000** | 572 | | | | | 113 | 1348 | Namibia |
| 2000 | United Kingdom | | | 429 | 4701 | | | 4062 | 1744 | Swaziland |
| 2000 | USA | | | 667 | 609 | | | 82 | 515 | Zambia |
| | | | | | | | | | | |
| 2001 | Areas, nes | | | 3 | 290 | 88 | 68 | | | Areas, nes |
| 2001 | Finland | | | 6875 | 33398 | | | **71753** | 850 | Botswana |
| 2001 | France | 97 | 4476 | | | 363 | 3288 | | | Dem. Rep. of the Congo |
| 2001 | Netherlands | 4812 | 14330 | 1375 | 6887 | | | 0 | 5541 | Lesotho |
| 2001 | Spain | 207 | 949 | 3687 | 19415 | 60 | 946 | | | Malawi |
| 2001 | United Kingdom | | | 261 | 2825 | **45859** | 12726 | | | Saudi Arabia |
| 2001 | USA | | | 250 | 983 | 20 | 1184 | | | Zambia |
| 2001 | | | | | | 101 | 591 | | | Zimbabwe |
| | | | | | | | | | | |
| 2002 | Finland | | | 6875 | 39697 | 56 | 588 | | | Areas, nes |
| 2002 | Kyrgyzstan | | | 3437 | 20417 | 753 | 6038 | | | Dem. Rep. of the Congo |
| 2002 | Netherlands | 4625 | 24567 | 1062 | 9006 | | | 0 | 1393 | Lesotho |
| 2002 | Spain | 1500 | 16868 | 269 | 2267 | 62 | 866 | 62 | 714 | Mauritius |
| 2002 | United Kingdom | | | 312 | 1466 | | | 97 | 1516 | United Kingdom |
| 2002 | USA | | | 21 | 816 | 66 | 592 | | | United Rep. of Tanzania |
| 2002 | | | | | | | | 222 | 764 | Zambia |
| 2002 | | | | | | 238 | 1916 | 0 | 5375 | Zimbabwe |
| | | | | | | | | | | |
| 2003 | Areas, nes | | | 13 | 361 | 35 | 714 | | | Angola |
| 2003 | Finland | | | 3437 | 23393 | 3 | 426 | | | Areas, nes |
| 2003 | Netherlands | **10812** | 71309 | 898 | 8663 | 60 | 1319 | 60 | 1158 | Mauritius |
| 2003 | Rep. of Korea | | | 2437 | 19244 | 4812 | 13863 | | | Netherlands |
| 2003 | Spain | | | 6875 | 43335 | 125 | 1543 | 66 | 1638 | Saudi Arabia |
| 2003 | United Kingdom | | | 136 | 6230 | | | 97 | 1578 | United Kingdom |
| 2003 | USA | | | 156 | 1645 | 70 | 966 | | | United Rep. of Tanzania |
| 2003 | | | | | | 24 | 599 | | | Zambia |
| 2003 | | | | | | 4125 | 35317 | | | Zimbabwe |
| | | | | | | | | | | |
| 2004 | Areas, nes | | | 7 | 89 | 128 | 945 | | | Areas, nes |
| 2004 | Germany | 97 | 1000 | 2 | 773 | 85 | 3070 | 82 | 3437 | Mauritius |
| 2004 | Netherlands | 8062 | 98293 | 1375 | 18442 | 15750 | 47330 | | | Netherlands |
| 2004 | Spain | | | 6875 | 82344 | | | 82 | 951 | United Rep. of Tanzania |
| 2004 | United Kingdom | | | 226 | 3650 | 621 | 11104 | 2250 | 40581 | Zimbabwe |
| 2004 | USA | | | 78 | 553 | | | | | |
| **00-04** | **Total** | | | **59438** | | **80849** | | | | **Total** |

**Activity 3: Evaluate the Africa Stockpiles Program (ASP) for mercuric pesticides and disposal technologies**

| | Activity | Actions | Deliverables |
|---|---|---|---|
| 3 | Evaluate the Africa Stockpiles Program (ASP) for mercuric pesticides and disposal technologies (South Africa & NEPAD?) | A1: Determine whether the Africa Stockpiles Program (ASP) in Southern Africa (NEPAD) has any specific mercury activities within it.<br><br>A2: Evaluate whether any obsolete stockpiles of pesticide contain mercuric compounds | D1 short report /note on ASP activities<br><br>D2 short report on composition of South African stockpiles |

A one day workshop of South Africa NGOs was organised by groundWork in collaboration with AGENDA (Tanzania) for Environment and Responsible development. The workshop was held at the Nazareth House, Cape Town on 01 September 2006. The main aim of the workshop was to build capacity and raise awareness of NGOs on Africa Stockpiles Programme (ASP) and determine on how NGOs can be integrated on the programme at country level.

The main objectives of this workshop were to:

- Share experiences and expertise in ASP and pesticide management in general.
- Update civil society organizations in South Africa on the progress that has been made in the country as far as ASP is concerned.
- Create a Civil Society network in South Africa (community organizations, unions – both labour and farmers, NGOs, health professionals and academics etc.)
- Provoke a discussion on the role that South African civil society organizations can play in terms of dealing with the obsolete stockpiles of pesticides.

The workshop was structured into a detailed introduction session, plenary session (paper presentation and discussion) and a networking session.

3A1 aimed to determine whether the Africa Stockpiles Program (ASP) in Southern Africa (NEPAD) has any specific mercury activities within it and to evaluate whether any obsolete stockpiles of pesticide contain mercuric compounds. In South Africa in terms of the Regulations Promulgated under the 'Fertiliser Act'. Mercury compounds were withdrawn from all agricultural uses in 1974. In 1983 the use of all mercury compounds on seed, bulbs, tubers, stems or any other plant material was banned. However, stockpiles of obsolete pesticides have been known to predate the 1983 cut-off and the participants of the workshop were notified of the dangers of mercuric compounds. In the event stockpiles containing mercuric compounds are found then management, handling and disposal technologies other than incineration will need to be evaluated.

groundWork will work closely with the ASP program to identify whether any obsolete stockpiles identified in Africa thus far contained mercuric compounds and develop specific information material on the dangers of pesticides containing mercuric compounds.

**Activity 4: Follow up Thor Chemicals process**

| | | | |
|---|---|---|---|
| 4 | Follow up Thor Chemicals process | A1: Evaluate/assess disposal options<br><br>A2: Undertake Conceptual Site Model (CSM) of the facility and health risk assessment (potential) of the residents nearby.<br><br>This will be a conceptual risk assessment hypothesizing linkages between sources of pollution, the pathways they might potentially follow and the receptors they may potentially affect – if there is any chance these linkages are complete we will notify and lobby the regulator to take action and investigate these in depth (taking samples etc.) | D1 report from Thor study – disposal options and CSM health assessments |

A1: The reports that were compiled to evaluate various disposal activities have not yet been made public. The DEAT has apparently received these reports from the consultants who undertook these evaluations (personal communication) however, the Department is reluctant to allow the publication of these reports to the public. groundWork continue to monitor this situation and lobby government to release these reports for peer review and evaluation.

However, groundWork did receive confirmation (after the fact) that DEAT had given permission to Thor (now renamed Guernica) to transport 1000 $m^3$ of mercury contaminated soil from the contaminated Cato Ridge site to the Holfontein landfill in Gauteng Province. This shipment comprised the rubble from the demolition of some buildings at the Thor site over a year ago. In consultation with other stakeholders we believe there is a possibility that the mercury that has been landfilled in the Holfontein site will remain there for ever even after the closure of the site. Furthermore we understand that the mercury waste was not encapsulated but instead only ash blended and landfilled in Holfontein. This means that possibly over time all this mercury will leach out. groundWork have communicated these concerns to the DEAT and will continue to monitor this situation to:

- Ensure no further waste is taken offsite for disposal in landfill
- Ensure mercury contaminated waste is treated in a BAT manner before disposal

A2: This activity has not yet been undertaken

**Activity 5: Follow up and attend chemical safety processes and focal points in South Africa and abroad (SAICM/WHO/UNEP).**

**Activity 11: Follow up with South African focal points for following international conventions to assess what is being done on mercury (if time and money is available follow this up with the NEPAD focal points for these conventions).**

| | | | |
|---|---|---|---|
| 5 | Follow up and attend chemical safety processes and focal points in South Africa and abroad (SAICM/WHO/UNEP). | A1: Arrange meetings at National level with SAICM focal points and establish activities related to mercury<br><br>A2: Determine what SAICM activities are proposed for mercury – lobby activities where these do not exist | D1 outcome note from meetings<br><br>D2 make a formal submission on mercury |
| 11 | Follow up with South African focal points for following international conventions to assess what is being done on mercury (if time and money is available follow this up with the NEPAD focal points for these conventions).<br>• Stockholm Convention of 2001,<br>• The Basel convention of 1989,<br>• The Rotterdam Convention of 1998,<br>• The Montreal protocol of 1989,<br>• The Convention of Biological Diversity of 1992 and<br>• The Bamako Convention of 1991. | A1: Establish what is being done on mercury with focal points (in South Africa) for all the listed conventions. Lobby for mercury issues on each convention. | D1 short note identifying focal points and defining mercury activities and actions |

At a preparatory meeting hosted by the Department of Environment Affairs and Tourism (DEAT) on the 17th August 2006, in preparation for the international chemicals meetings that were coming up (Africa Regional Meeting of the Strategic Approach to Chemicals Management (SAICM) 11-14 September 2006, Rotterdam COP in Geneva in October, and Basel COP in Nairobi in November), hosted by the International Co-operation Department of the DEAT we discussed South Africa's position in relation to each Convention and following the meeting we made a formal submission regarding mercury. From this meeting it was clearly established that the International Co-operation Department of the DEAT has no programs including mercury.

The groundWork submission is titled Appendix 1: Formal submission to the DEAT in advance of the SAICM Africa Regional Meeting.

Furthermore I investigated the South African focal points for the various international programs that we are party to – Stockholm convention, SAICM, ASP etc.

UNEP is in charge of the Stockholm Convention National Implementation Plan for South Africa. Ms. Thembisile Kumalo is in charge of the project in South Africa, her e-mail:

t.kumalo@deat.gov.za , however for the Stockholm Convention I did not find any focal point for South Africa (http://www.pops.int/documents/focalpoints/focalpoints.pdf).

- No specific mercury activities are reported under this program
- The Stockholm Convention NIP has still not been completed (or started)

For SAICM, I did not find any South African focal point:
(http://www.chem.unep.ch/saicm/focalpoints.htm)

Ms. Zini Manana is in charge of the Rotterdam Convention project in South Africa, her e-mail: z.manana@deat.gov.za

- No specific mercury activities are reported under this program

**Activity number 6 & 9: Begin discussions regarding mercury phase out in measuring devices in hospitals**

| | | | |
|---|---|---|---|
| 6 | Set up a meeting with the National Department of Health (DoH) to establish and discuss phase out activities regarding mercury in health care measuring devices | A1: Establish what mercury activities, advisories, and phase out activities the department is undertaking<br><br>A2: Begin discussions regarding mercury phase out in measuring devices in hospitals | D1 Questionnaire survey to DoH<br><br>D2 outcome note from meetings<br><br>D3 Report on proposed activities |
| 9 | Follow up groundWork greening hospitals project and assess mercury and health care waste management in these 2 hospitals | A1: Follow up and report what the different Provincial DoH procurement policies regarding mercury are<br><br>A2: Follow up and report what phase out activities related to mercury in these hospitals are | D1 Report on procurement policies, phase out activities |

On the 7th September 2006 I met with Dr Thiloshini Govender, Principal Specialist, Epidemiology Unit, KwaZulu Natal Department of Health Thiloshini.Govender@kznhealth.gov.za (Tel: 033-3953003) to discuss specific activities regarding mercury in the province.

Mercury spills continue to be a concern in KwaZulu Natal hospitals (and probably also nationally). In most hospitals the Infection Control Units are responsible for mercury spills and cleanups and usually the broken equipment and mercury is disposed in sharps containers which are also usually incinerated. groundWork will continue to distribute the groundWork Hospital Waste Manual, in addition to print and distribute Health Care Without Harm information fact sheets on mercury.

Following up our meeting she reported that she had also spoken to the head of procurement in KwaZulu Natal (Dr Sewlall) and was “happy to report that mercury in new equipment has been eradicated for the past 3 years”.

Further activities that are now required is a formal submission to the MEC of Health in KwaZulu Natal proposing and outlining efficient mercury training, safe spills collection and disposal program in order to ensure no further unsafe mercury disposal.

Activity 9 has not been undertaken.

**Activity 7: Print hospital waste guide and also assess how it is used in State Hospitals around the country to whom it was sent.**

| | | | |
|---|---|---|---|
| 7 | Print hospital waste guide and also assess how it is used in State Hospitals around the country to whom it was sent. | A1: Print and distribute hospital waste guide<br><br>A2: Send follow up questionnaire to recipients asking specifically what mercury related activities they are undertaking regarding: spills collection, storage and disposal, and phase out. | D1 Print 1500 copies of hospital waste guide<br><br>D2 short report of questionnaire analysis of responses |

A1: We have printed 1500 copies of the groundWork hospital waste manual and will re-distribute this will additional fact sheets on mercury to hospital and clinic waste managers. Additionally we will include a questionnaire survey to get a better sense of hospital waste management and mercury spill, clean-up and disposal structures and also offer targeted training for those health care providers who request this outreach.

A2: Not yet completed

**Activity 8: Undertake a situational assessment of all other NGO's involved in mercury work in SA**

| | | | |
|---|---|---|---|
| 8 | Undertake a situational assessment of all other NGO's involved in mercury work in SA | A1: Follow up with all other NGO's involved in mercury work in SA and;<br><br>A2: Convene a meeting/workshop to agree a common ground and develop a way forward<br><br>A3: Prepare a position with other CSO's for Nairobi 2007 and dovetail activities with international role players (EEB) | D1 establish a list of NGOs working on Hg<br><br>D2 Meeting in early October<br><br>D3 Signed declaration for Nairobi 2007 |

Joy Leaner from the Council for Scientific and Industrial Research (CSIR), South Africa is in the process of coordinating a South African Mercury Assessment Programme (SAMA) which has just very recently been initiated. The first meeting occurred on 7 & 8 March 2006 to discuss the way forward in establishing a mercury assessment program for the country.

The 2-day forum focused on initiating a SAMA Programme, involving some government departments, national and international scientists. Participants represented at the workshop included the Department of Environmental Affairs and Tourism (DEAT), Department of Water Affairs and Forestry (DWAF), CSIR, Eskom (the South African para-statal power utility), SASOL, the Basel Convention Regional Centre Pretoria (BCRC), University of Stellenbosch, University of Witwatersrand and the University of Connecticut, USA. No representatives from Civil Society were included at this first meeting.

The specific aims of the forum then were to:

* Discuss the need to establish a SAMA Programme;
* Develop a framework for Hg research in the SAMA Programme; and
* Discuss a way forward that would improve national awareness of the SAMA Programme.

All participants agreed that there is a need for a SAMA programme within South Africa. A proactive approach towards understanding mercury pollution in South Africa is required. A baseline study on mercury levels is needed, as a first approach, to assess mercury levels in South Africa.

Now Mrs Leaner is in the process of establishing the Steering Committee for the SAMA Programme. The first meeting of this group occurred on the 16th September 2006. The success of the SAMA Programme is perceived to rely on the following key initiatives that will need to be implemented by all stakeholders during the next few years:

a) Establish a Project Steering and Co-ordination Committee;
b) Create extensive awareness of Hg as a South African, regional (southern African) and global pollutant;
c) Determine whether or not South Africa can act as a point of reference on Hg emissions for the African continent;
d) Inculcate an improved governance system; and

e) Initiate selected sub-projects that focus on quantifying specific instances of Hg pollution in South(ern) Africa and linking this to potential human health risks, and to risks of ecosystem degradation.

groundWork have established a link with the SAMA process and have been invited to sit on the SAMA steering committee. Broadly from a Zero Mercury position our main objective in preparation for Nairobi 2007 from an African perspective is to get a unified African government's and NGO position on mercury. This hopefully will align itself to the EEB and HCWH positions, I would imagine we would not want to complicate things too much and in preparation for February 2007, get African partners ideally to agree:

- A ban on mercury exports from the EU to be brought forward from 2011
- A ban on sales of mercury containing thermometers from the EU as soon as possible
- A structured ban/limitation of sales of other mercury containing measuring devices
- Pressure on African governments to take realistic steps to undertake a "situational analysis" of mercury in their countries
- Pressure African countries to phase out Hg processes and HC equipment over a agreed upon time period [we can use the AU to push this in the future]
- Development of educational material on Mercury in a variety of different settings e.g. health care, ASM etc.

Furthermore in order for us to get this unified African position we would need to get buy-in from as many African partners who we know will be attending the UNEP meeting in 2007 and ideally get them together to agree this position. Logistically this will be very difficult to do in advance of the meeting, however, if we can begin identifying and corresponding with various governments and NGO's through SAMA who will be attending Nairobi in 2007 from now, we can perhaps arrange a side meeting for those travelling and meeting in February.

SAMA coordinator details are:
Dr. Joy Leaner
PhD (Maryland, USA)
Research Group Leader: Water Ecosystems
CSIR Water Resources
email: jleaner@csir.co.za
www.csir.co.za

**Activity 10: Assess the chlor-alkali industry in South Africa**

| | | | |
|---|---|---|---|
| 10 | Assess the chlor-alkali industry in South Africa | A1: Undertake a situational analysis (how many, where, who)<br><br>A2: Determine if mercury stockpiles exist?<br><br>A3: Undertake site visits and (CSM) health risk assessments<br><br>A4: Determine a phase out evaluation | D1-D4 situation analysis report |

**The chlor-alkali industry in South Africa – A situation analysis**

In 1955 Umbogintwini started the production of polyvinyl chloride (PVC), the first commodity plastic to be made in South Africa. The associated chlor-alkali plant also marketed chlorine and caustic.

During World War II, Klipfontein Organic Products (KOP a chlor-alkali facility at Chloorkop), was built between Johannesburg and Pretoria to produce phosgene and mustard gas although they were never used. After the war production was focused on DDT and other insecticides.

Following a desk top evaluation and confirmation from the South African Chemical Allied Industry Association and also NCP Chlorchem (the largest chlorine manufacturer in Southern Africa) I can confirm that that there are no operational mercury based chlor-Alkali facilities in South Africa, nor it appears in Southern Africa. Furthermore a reference from the Chlorine Institute that lists all of the chlor-alkali plants worldwide confirms that South Africa does not have any mercury-based chlor-alkali plants in South Africa - all of the plants are membrane except for one, which is diaphragm.

However the site of the last mercury based chlor-Alkali facility which was based in Durban's Umbogintwini Industrial Complex, is still in the process of site remediation. The site is part of a major hazardous installation complex and is subject to high security and restricted access – for this reason I have not yet been granted access to the site. Furthermore the eThekwini City Health Department have assured me (personal communication) that site specific risks have been evaluated and are managed to ensure that there is no risk to the general public. A decision to allow me to undertake a site visit with a representative of the eThekwini City Health Department is still pending.

**Activity 12 & 13: Environmental Impact Assessments (EIA's) for proposed coal fired power stations and Air Quality Standards**

| | | | |
|---|---|---|---|
| 12 | Track and make comments on Environmental Impact Assessments (EIA's) for proposed coal fired power stations and push for better abatement technologies, monitoring, evaluation and regulation. | A1: Lobby the regulator for inclusion of mercury in the EIA process<br><br>A2: Lobby for stricter air quality standards in line with internationally accepted standards<br><br>A3: Review BAT for mercury emissions abatement and monitoring<br><br>A4: Lobby for BAT mercury emissions monitoring and abatement | D1 Review coal fired power stations EIA's and submit comments to DEAT authorities.<br><br>D2 Letter to Environ. Ministry (DEAT) for mercury to be listed as a priority pollutant with an AQ standard<br><br>D3 Report on BAT in coal power stations and letter to regulator/ DEAT |
| 13 | Generally assess and track legislative processes on mercury in South and Southern Africa | A1: Review air quality standards<br><br>A2: Review standards for water, land | D1 Review SA AQ quality standards and develop a position paper to be submitted to authorities |

groundWork have since the commencement of this project date actively reviewed all of the Environmental Impact Assessments (EIA's) submitted to the regulator (DEAT) for proposed coal fired power stations. Furthermore in the Vaal Triangle area (a heavily industrialized steel, coal and chemicals producing region of South Africa) a partnership has been established with a consortium of community groups to challenge the establishment of a coal fired power station in this locality. Furthermore in partnership with the Legal Resource Council (a NGO legal resource for local NGO's) we are challenging ESKOM to install technology alternatives for the control of dioxin and mercury emissions. Please refer to the following:

**Appendix 2**: Comment on the draft scoping report dated august 2006 for the proposed construction of a new coal-fired power station in the Northern Free State, and,

**Appendix 3**: Environmental Scoping Report for a proposed establishment of a new coal –fired power station in the Lephalale area of the Limpopo Province.

Furthermore groundWork have actively been involved in lobbying the regulator to develop and publish air quality standards for South Africa. On the 9th of June 2006 the Department of Environmental Affairs and Tourism published a list of substances which it intends to regulate in ambient air and permissible concentrations, and allowed three months for comment.

Most notable in the draft 'Air quality standards' was the omission of key hazardous chemicals including mercury. Attached is the letter groundWork submitted to Environment Ministry (DEAT) for mercury to be listed as a priority pollutant with an air quality standard.

D3 Concept paper outlining BAT for mercury emissions from coal fired power stations – this project is still in progress. I have received technical advice from NRDC and am in the process of contextualizing this material.

**Activity 14: Global processes**

| | | | |
|---|---|---|---|
| 14 | Contribution to the global / European mercury campaigns –<br>• Attending international meeting and highlighting and lobbying for global mercury ban.<br>• Lobbying politicians when necessary to put pressure for limited and safer mercury trade, use, storage, and standards etc. | A1: Attend the African Regional Meeting on Strategic Approach to International Chemicals Management (SAICM) which will be held in Cairo, Egypt, from 11 to 14 September, 2006.<br><br>A2. Attend the IPEN General Assembly (2006) to be held 20-22 September in Budapest, Hungary.<br><br>A3: Attend the IFCS Forum V to be held 23-29 September in Budapest, Hungary.<br><br>A4:Attend the EC International conference on Mercury 26-27 October 2006 in Brussels.<br><br>A5: Attend the EEB NGO meeting to be finalised after or before the EC mercury meeting. | D1 Attend meetings and make formal submissions regarding mercury – summarise submissions in a short report. |

**African Regional Meeting on Strategic Approach to International Chemicals Management (SAICM)**

I attended the African Regional Meeting on Strategic Approach to International Chemicals Management (SAICM) which was held in Cairo, Egypt, from 11 to 14 September. This meeting afforded me an opportunity to meet and lobby chemicals managers from many African countries on key mercury issues. During the plenary sessions under the Agenda item titled: SAICM quick start programme, "possible regional projects", I made an intervention highlighting the need for a regional priority project on heavy metals. Furthermore during Sub-regional meetings out of plenary the groups were requested to develop and nominate project proposals to be considered under the SAICM quick start programme – A proposal for the regulation and assessment of priority chemicals follows is attached titled **Appendix 4**: In-session meeting of the Southern Sub-Regional Group, Cairo, 11 September 2006 Proposal # 3: Sub regional framework for the regulation and assessment of priority chemicals (motivated as a sub regional priority - southern region).

**IPEN General Assembly**

I attended the IPEN General Assembly (2006) to be held 20-22 September in Budapest, Hungary. This meeting I afforded me an opportunity to meet and network with NGO groups on key mercury issues.

**Intergovernmental Forum on Chemical Safety – IFCS V**

I attended the IFCS Forum V to be held 23-29 September in Budapest, Hungary. This meeting afforded an opportunity to engage with and lobby Chemical Managers from the African Region on the need for further global action regarding heavy metals. Following successful engagement with regional meetings the following statement was read out in plenary by the co-chair of the African region:

**Africa regional proposal to the 'global strategies' debate on Heavy Metals - IFCS, Budapest, 23-28th September 2006**

**Lead**

The toxicity of lead as an environmental and public health contaminant is well-documented world-wide.

We the members of the African Region urge a global commitment from the Forum to identify, prioritize and reduce the sources of lead that impact human health and the environment. This issue can only be meaningfully addressed when there is an established global technical and financial assistance instrument to address the following priorities:

1. To start work toward an African program on lead demand and supply reductions.
2. To design a complete phase out of lead in petrol as outlined in the UNEP Governing Council (Decision 21/6 of Feb 2001).
3. To develop international regulations to restrict the global trade of lead containing petrol;
4. To develop and revise national legislation to ensure proper recycling programs for lead-acid batteries, including control of emissions from secondary smelting;
5. To create inventories of lead in products and environmental media, and pursue substitution and phase out of lead in manufacturing processes where possible;
6. Develop methods for safe disposal of lead;
7. To research and estimate the impact of lead in developing countries, including exposure data.

**Mercury**

It is well known that mercury is highly toxic.

It also clear that, since present measures are not adequate to sufficiently reduce the risk, further actions must be undertaken at global level, including the following 5 elements:

1. Work should start towards a global binding instrument on mercury (and mercury compounds) , as soon as possible.

2. The findings of the Mercury trade report conducted for UNEP should be utilised and concrete actions should be taken including the following:

3. Global Mercury Demand Reduction

Global mercury reduction goals should be achieved through the following means:

- Decrease the use of mercury in small-scale and artisanal gold mining.
- Phase out the use of hazardous substances in electrical and electronic equipment
- Ending the use of mercury in the production of button cell batteries; in medical equipment and in the chlor-alkali process
- Ensuring that mercury-containing products and mercury-using processes, restricted in industrialized countries are not exported to developing countries;

4. Global Mercury Supply Reduction

a. A hierarchy of mercury supply sources should be established, favouring mercury from by-product production and the recycling of wastes.

b. Excess mercury supply should be prevented from entering into global market by restricting trade and managing surplus mercury.

5. Financial Assistance

Developed countries should provide new and additional financial resources to support these activities in developing nations, and a financial assistance mechanism should be created to support global heavy metals activities consistent with the above proposals.

Following from the above, we propose a declaration by Forum V as stated below:

**The Budapest Declaration on Heavy Metals**
We, the participating members of the African Region attending the fifth Session of Intergovernmental Forum on Chemical Safety (IFCS), held in Budapest, September 25-29, 2006.

*Reaffirm* our commitment to the Bahia declaration on chemical safety and SAICM objectives for sound management chemical information

*Commit* to meet the key goals outlined in the Forum III document *Priorities for Action beyond 2000* and Agenda 21, Chapter 19,

*Recognize* the 'global concerns' around heavy metals and therefore:

*Call* for the establishment of an IFCS heavy metals expert working group to initiate and deliberate on a 'global' plan of action, including the actions discussed above, that will address the challenges of limiting the 'global' health and environmental impact of heavy metals; and to give recommendations to the UNEP Governing Council.

Following further interventions on this issue by the Asian, Latin American and Caribbean Regions, and various European countries an *ad hoc* sub-committee was established at the Forum to further discuss a further need for global action on heavy metals. After many hours of negotiations, the participants finally agreed on the attached document titled: **Appendix 5: Budapest Statement**.

I will be attending the EC International conference on Mercury 26-27 October 2006 in Brussels as well as the EEB NGO meeting to be held before and after the EC mercury meeting in order to prepare and contribute to Global NGO activities in advance of the UNEP GC meeting in Nairobi 2007.

**Activity 15: UNEP GC 24 preparatory meeting and activities**

| | | | |
|---|---|---|---|
| 15 | Nairobi preparatory meeting and activities | A1: In advance of Nairobi 2007 groundWork plans to organize a civil society workshop and facilitate a unified civil society position in South Africa on mercury – supporting a global ban on exports.<br><br>A2: In October 2006 at the Friends of the Earth (FOE) Africa Regional Meeting and FOE International Bi-annual meeting in Lagos Nigeria - groundWork (in its capacity as the FOE member for South Africa) plans to bring together African Civil Society partners lobby for and develop a unified position and declaration on mercury. | D1 report from meeting<br><br>D2 Arrange a FOE Africa side meeting on Mercury<br><br>D3 report from FOE meeting |

D1 did not occur. Although we planned to host this meeting in advance of Nairobi 2007, this activity was deemed to have limited value at the time and was under budgeted. However, in the interim can we used this money to print more healthcare waste manuals.

D3 On the 27th September 2006 at the Friends of the Earth (FoE) Africa Regional Meeting and FoE International Bi-annual meeting in Lagos Nigeria - groundWork (in its capacity as the FOE member for South Africa), hosted a half day workshop with the African FOE members including Nigeria, Sierra Leone, Ghana, Cameroon, Togo, South Africa, Mauritius, and Swaziland. Bobby Peek and Siziwe Khanyile of groundWork, presented the contents of the document: **Appendix 6: African region activities for mercury, Friends of the Earth International, African Regional Meeting, Nigeria, September 2006.** Following this presentation the group agreed that the FoE Africa group broadly support these initiatives and activities concerning mercury and agree to participate in the following activities:

- Translate this document into French and disseminate this information more widely to the NGO networks in the Francophone region
- Togo is the coordinator of the FoE Africa region and in addition to Mauritius sits on the UNEP GC NGO representatives seats – this presents a unique opportunity to support the Zero Mercury initiatives.
- Get broader buy in from NGO partners to raise the profile of the dangers of mercury

**Possible Other Activities undertaken**

**Activity 2: Survey Local Authorities to find out if they have mercury collection and disposal facilities**

| | | | |
|---|---|---|---|
| 2 | Survey Local Authorities to find out if the have Hg collection and disposal facilities | A1: Compile a questionnaire and distribute to all Local Authorities in South Africa | D1 short report of LA questionnaire survey results |

**The groundWork mercury collection and disposal Local Authorities survey results**

This survey was aimed at Local Authorities in South Africa to try begin to understand what capacity and facilities Local Authorities have in place to collect and dispose mercury spills safely. Even if Local Authorities had no specific policies and protocols in place they were encouraged to complete the survey with the ultimate aim of providing information and identifying Local Authority needs where gaps exist. **Appendix 7** shows the Mercury collection and disposal questionnaire.

Respondents were from a wide variety of Local Authorities including the City of Cape Town, Kimberley/Northern Cape Department of Health, the town of Ashton in the Breede River Winelands Municipality, Piet Retief/Mkhondo Municipality, Hopetown/Thembelihwe Municipality, Kathu/Gamagara Local Authority, Potchefstroom City Council, George Municipality, Vryburg/Naledi Municipality, Witbank/Emalahleni Local Municipality, Danielskuil/Kgatelopele Municipality, Umzumbe Local Municipality, Bronkhorstspruit/Kungwini Municipality, Brits/Madibeng Local Municipality, Ntambanana Municipality, Buffalo City Municipality, West Coast District Municipality, and Port Elizabeth/Cacadu District Municipality.

In total we received 20/275 (7%) responses from the municipalities who were posted the mercury collection and disposal survey questionnaire. Three questionnaires did not reach their intended recipients and were returned back to us the sender.

Figure 2 shows responses for Questions 1, and Q4 – Q11. These questions are listed below with a short narrative interpreting the responses to these questions:

Q1 read “In the event that a member of the public calls your department regarding a mercury spill (e.g. at a school) is there a protocol in place to investigate, collect and safely dispose this material”. This question was coded as *Yes or, No.* If the respondent answered *yes* they were asked to attach a copy of this protocol. 17/20 (85%) respondents answered this question as no. One respondent (1/20), City of Cape Town responded they had a protocol in place, however all that was attached was a (Material Data Safety Sheet) MSDS for mercury.

Q4 read “Are there any specific health advisories on mercury in place in your district?”. This question was also coded as *Yes or, No.* If the respondent answered *yes* they were asked to attach a copy of this protocol. 14/20 (70%) responded they did not. The Breede River Winelands Municipality stated they used a HAZMAT protocol addressing all chemical spills. Worryingly 20% of respondents did not know whether a health advisory had previously been issued in their district. The City of Cape Town reported they use First aid guidelines.

Q5 read “Are there any recommendations to limit fish consumption, i.e. national fish consumption guidelines, in women of childbearing age, pregnant women, infants and children in your LA/district?”

This question was also coded as *Yes or, No.* If the respondent answered *yes* they were asked to attach a copy of this protocol. 14/20 (70%) responded they did not. 30% (6/20) did not know.

Q6 read “Does anybody at your unit undertake routine mercury sampling in the environment (air, soil, food or water?)”. This question was also coded as *Yes or, No.* If the respondent answered *yes* they were asked to provide more details. 14/20 (70%) responded they did not do any routine sampling, 30% did not know. Port Elizabeth/Cacadu District Municipality reported they undertake routine sampling but did not provide further details thereof.

Q7 read “Does the LA/District regulate the trade of mercury in any form of local permits?” This question was also coded as *Yes or, No.* If the respondent answered *yes* they were asked to provide more details. 16/20 (80%) responded they did not and the remainder of the respondents did not know.

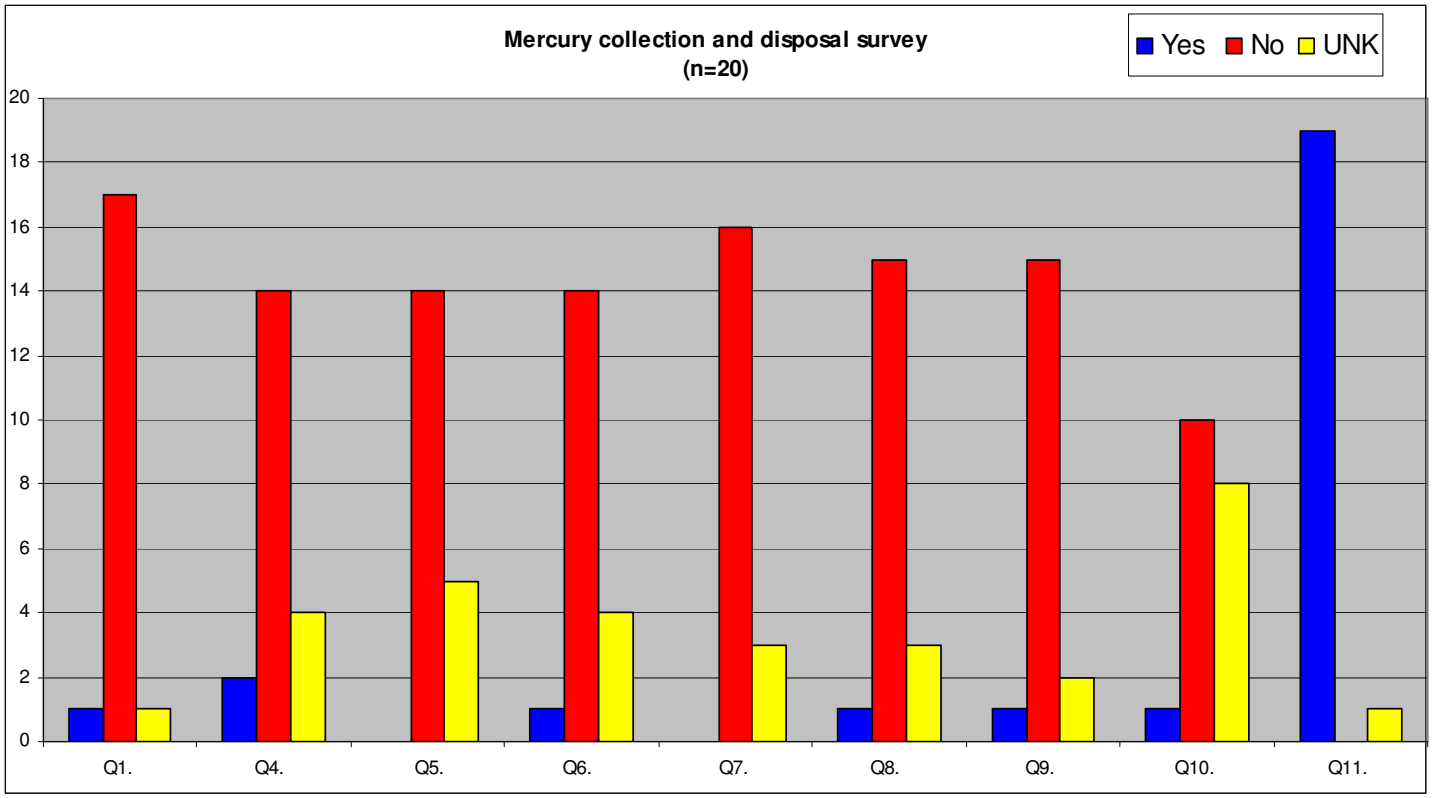
Q8 read “Are you aware of any informal trade in mercuric compounds?” This question was also coded as *Yes or, No.* If the respondent answered *yes* they were asked to provide more details. 15/20 (75%) responded they did not, and 3 did not know the answer to this question. Port Elizabeth/Cacadu District Municipality reported they became “aware from a TV Programme called “Special Assignment” on the investigation of unlawful mercury sales”.

Q9 read “Are there guidelines or restrictions on the use and disposal of mercury in the LA/District?” This question was also coded as *Yes or, No.* If the respondent answered *yes* they were asked to provide more details. 15/20 (75%) responded they did not, and 2 did not know the answer to this question. The City of Cape Town reported they used the ‘Minimum requirements for the handling, classification and disposal f hazardous waste – DWAF waste management series”.

Q10 read “Do artisanal miners use mercury in your district?” This question was also coded as *Yes or, No.* If the respondent answered *yes* they were asked to provide more details. 50% replied no. 8/20 (40%) did not know. Brits/Madibeng Local Municipality reported that artisanal miners used mercury but did not provide additional details in this regard.

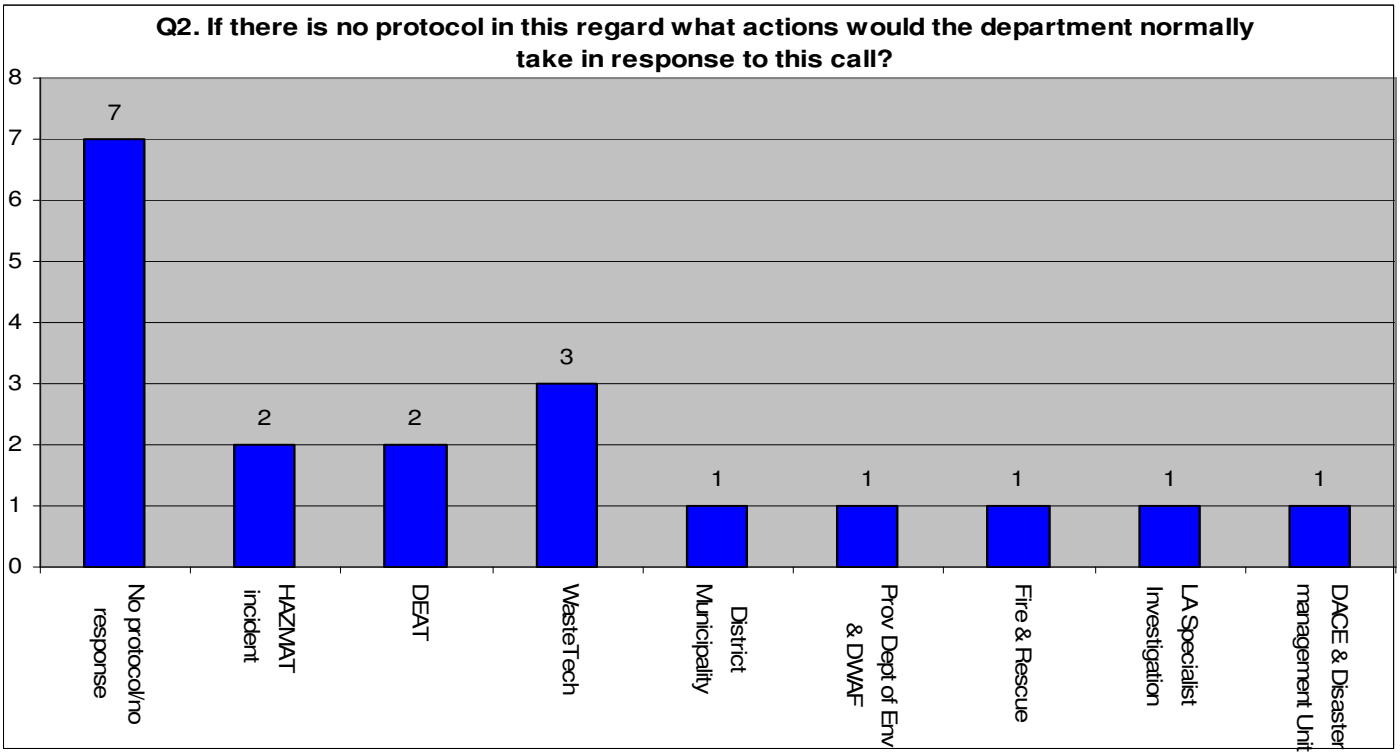
Q11 read “Would you like more information on the safe handling/disposal of mercury and alternatives to medical equipment containing mercury?” This question was also coded as *Yes or, No.* 19/20 (95%) responded they wanted additional information.

Figure 2: Selected questions from the groundWork mercury collection and disposal survey



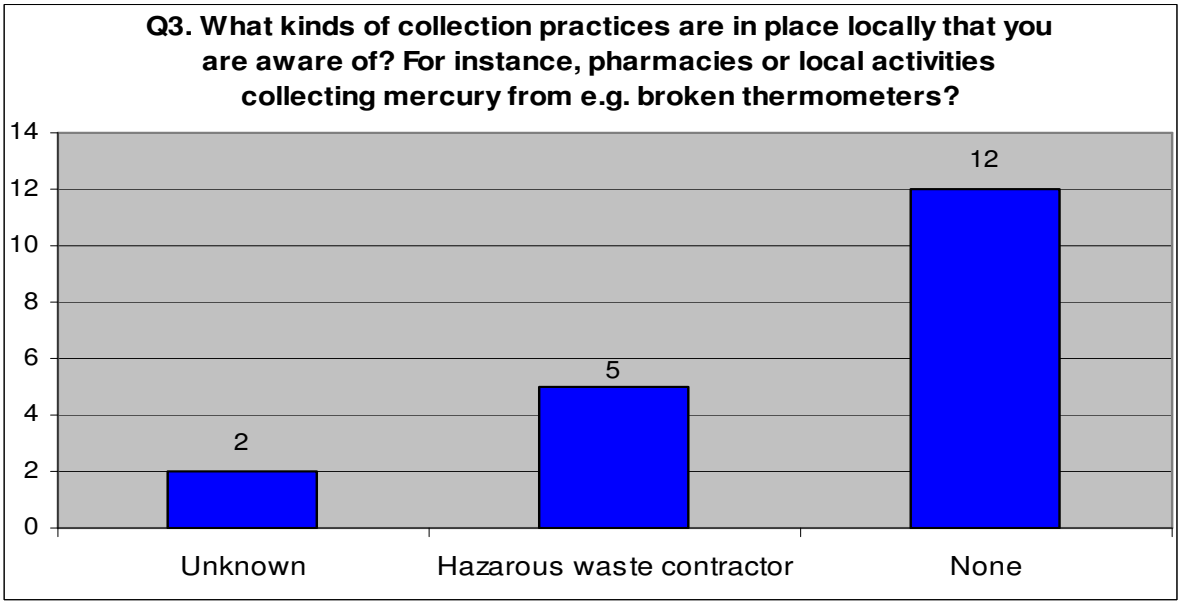

Q2 read “If there is no protocol in this regard what actions would the department normally take in response to this call?” Figure 3 below shows responses to this question. Worryingly 7/20 municipalities would take no action in this regard.

Figure 3: Actions Local Authorities would take if no mercury protocol is in place.




Q3 read "What kinds of collection practices are in place locally that you are aware of? For instance, pharmacies or local activities collecting mercury from e.g. broken thermometers?" Figure 4 below shows responses to this question. 60% (12/20) report no awareness of collection practices at all.

Figure 4: Awareness of collection practises



**Appendix 1: Formal submissions to the DEAT in advance of the SAICM Africa Regional Meeting**

P.O.Box 2375
Pietermaritzburg, 3200
191c Burger Street
Pietermaritzburg, 3201
South Africa
Tel: +27 -33-342 5662
Fax: +27-33-342 5665
team@groundwork.org.za
www.groundwork.org.za

Wednesday 23rd August, 2006

Ms Judy Beaumont
Chief Director
International Co-operation
Department of Environmental Affairs and Tourism
By e-mail: Jbeaumont@deat.gov.za

**Formal submissions for the forthcoming SAICM Regional Meeting**

Dear Ms Beaumont,

Thank you for allowing us an opportunity to participate in the DEAT's preparatory process for the forthcoming international chemicals meetings (SAICM, Rotterdam COP, Basel COP) on the 17th August 2006. This forum allows important stakeholder participation and we welcome this opportunity to meaningfully engage with government to ensure the health and safety of all South Africans.

Following on from this meeting, and as agreed during discussions at this meeting, we would like to make a formal submission for inclusion in the Regional Action Plan.

1. Submission 1:A Mercury Strategy for Africa covering the following priority areas:
   - Supply and trade notification and restrictions
   - Situational assessment of the chlor-alkali industry in Africa
   - Safe and sustainable solution for surplus mercury e.g. fate of surplus mercury from the chlor-alkali industry
   - Assessment of measuring and control equipment in the health care sector and the feasibility of non mercury alternatives e.g. Restrictions on the marketing of non-electrical or electronic measuring and control equipment containing mercury. Elimination of mercury emissions from medical waste incinerators, mercury spills in hospitals and homes, occupational exposure to nurses, patients and health care staff.
   - Investigation and advice on dietary exposure
   - Coal combustion (especially in the context of coal fired power stations)

- Cremation
- Dental amalgam disposal
- International co-operation in line with the imminent EU ban on Mercury exports, UNEP Mercury Programme, UNDP/GEF/UNIDO Global Mercury Programmes

2. Submission 2: The establishment and maintenance of an efficient Regional Poison Centre Network

- To support existing poisons units on the continent
- To compile and maintain a surveillance database of chemical exposures and accidents to understand chemical accidents in the African context
- To support various chemical programs e.g. ASP, activities around various International Conventions on chemical safety
- To undertake a situational analysis of all chemicals manufactured in Africa above a certain tonnage.

I look forward to working closely with DEAT, International Co-operation, and the National Committee on Chemical Safety and Management (DTI) on these various International Conventions.

Sincerely

E. Euripidou

**APPENDIX 2: COMMENT ON THE DRAFT SCOPING REPORT DATED AUGUST 2006 FOR THE PROPOSED CONSTRUCTION OF A NEW COAL-FIRED POWER STATION IN THE NORTHERN FREE STATE**

1. The Legal Resources Centre submits these comments on behalf of its clients (the community groups):

    1.1. Groundwork;

    1.2. Boipatong Environmental Working Group;

    1.3. Steel Valley Crisis Committee;

    1.4. African Genesis Heritage Environmental Club and

    1.5. Sasolburg Air Quality Monitoring Committee.

**ANALYSIS OF PROJECT ALTERNATIVES FOR ENERGY-GENERATION**

The Scoping Report makes it clear that the EIA for the project will not analyse alternative methods of generating electricity, such as wind, solar and other renewable options or alternative methods of managing the demand for electricity. Page 40 of the Scoping Report for the proposed power plant in Northern Free State states:

> *"Fundamentally different alternatives for achieving the project's goal are normally assessed at a strategic level. In this regard, as mentioned in Section 1.2 above, the proposed project to establish a coal-fired power station has come out of extensive policy and plan level investigations, undertaken by the DME, the NERSA and Eskom. Alternative methods of generating electricity are identified in the [Integrated Energy Plan] IEP, [National Integrated Resource Plan] NIRP and [Integrated Strategic Electricity Planning] ISEP planning processes. Furthermore, environmental issues were integrated in the NIRP and ISEP, focusing on environmental life-cycle assessments, site-specific studies, water-*

*related issues and climate change considerations. Consequently, this Scoping Report only considers project level alternatives related to a new coal-fired power station in the northern Free State and does not evaluate any other power generation options."*

In limiting the scoping report and the environmental impact assessment process to only considering a coal fired power station, Eskom is attempting to be judge and jury at the same time. There is no indication that the IEP, NIRP and ISEP fulfills the requirement of Regulation 1183 that an EIA report contain a 'comparative assessment of all the alternatives'. The processes that resulted in the IEP, NIRP and ISEP are different than the process for consideration of an EIA for a specific project and did not afford stakeholders broadly, or those potentially affected by a coal fired power station in the Northern Free State an opportunity to voice their views.

Furthermore, according to the Scoping Report, the IEP, NIRP and ISEP seem to have avoided consideration of a very relevant alternative method of 'generating' electricity: Demand-side management (for example, investments in more efficient transmission and end-use of electricity). It is therefore not reasonable for the scoping report to conclude that the IEP, NIRP and ISEP could foreclose, at the EIA stage, consideration of alternative methods of meeting the demand for electricity that these earlier plans did not consider.

Accordingly, by not considering alternatives to a coal fired power plant for meeting the demand for electricity during the environmental impact assessment process, the EIA process for this project falls foul of the EIA regulations.

**TECHNOLOGY ALTERNATIVES FOR THE CONTROL OF DIOXIN AND MERCURY EMISSIONS**

Section 3.4.4(d) of the Scoping Report correctly mentions the need to consider alternatives, such as electrostatic precipitators, fabric filters, flue gas desulphurization, etc., for controlling emissions of criteria pollutants, such as particulate matter, sulfur dioxide, and nitrogen oxides.

However, conspicuously absent from these sections are requirements to consider technology alternatives for the control of dioxin and mercury emissions. Research over the past two decades reveals that emissions of dioxin and mercury are a substantial component of the overall environmental impact of a coal-fired power plant, but that emissions of these substances are difficult to control. There are numerous technologies for the control of dioxin and mercury emissions (for example, quench cooling, activated carbon injection, catalytic destruction, etc.). Not all of these technologies are equally effective or compatible with other necessary control technologies. Consideration of technology alternatives for the control of dioxin and mercury emissions is an essential element of determining the optimum design of the overall air pollution control system for a particular coal-fired power plant.

**HEALTH RISK ASSESSMENT OF AIR QUALITY IMPACTS**

The Scoping Report fails to conclude that a specialist study of the health impacts of changes in air quality associated with the project must be done as part of the EIA process. The EIA that will thus follow from the scoping report will attempt to characterise air quality impacts without quantifying the health impacts of changes in air quality.

For example, Section 5.2.3. of the Scoping Report for the proposed power plant in Northern Free State contains the following:

> *"Predict potential impacts of the proposed power station by: ...*
>
> *Assessment of air quality impacts including:*
> *• Evaluating estimated emissions,*
> *• Comparing estimated emissions to local and international limits, … • Evaluating (a) magnitude, frequency of occurrence, duration and probability of impacts, (b) local, regional national and international significance of predicted impacts, and (c) level of confidence in findings."*

This isn't enough. Comparing estimated emissions to local and international limits, doesn't inform anyone about the true impact of the proposed project: the number of

additional people who might die or get sick because of the addition of pollutant emissions from the proposed facility to baseline levels of air pollutants.

The Scoping Reports must make clear that any analysis of air quality impacts of the proposed activity must add the predicted increased (or decreased) emissions from proposed future scenarios together with the most recent and representative measurements of air quality within the project area. The Scoping Report should specify that the health risk assessment must quantify the health outcomes as a result of population-wide exposure to the predicted ambient air levels of particulate matter, for example, by using the methodology described in Ostro, B. (2004) "Outdoor Air Pollution: Assessing the environmental burden of disease at national and local levels, WHO Environmental Burden of Disease Series."

Finally, with respect to emissions of dioxins, the quantification of health risks must not be limited to inhalation of these toxins, but must also estimate the extent to which deposition of dioxins would enter the food chain in South Africa.

**CONCLUSION**

An environmental impact assessment done as defined by the scoping report in its current form will not be an adequate assessment of the potential impact of the proposed project on the environment. Accordingly the community groups object to approval of the scoping report in its present form and require the inclusion of the three issues addressed above in a revised scoping report.

Ellen Nicol
Legal Resources Centre
21 September 2006

**Appendix 3: Environmental Scoping Report for a proposed establishment of a new coal –fired power station in the Lephalale area of the Limpopo Province.**

April, 18, 2006

P.O. Box 1178
Vorna Valley
Midrand
South Africa
1686

Dear Sir / Madam

**Re: Environmental Scoping Report for a proposed establishment of a new coal – fired power station in the Lephalale area of the Limpopo Province.**

I refer to the above environmental scoping report for a proposed establishment of a new coal fired power station in the Lephalale area of Limpopo province. Following a review of the document titled: Air Quality (Chapter 9) it is clearly apparent that potential mercury emissions are not considered to be potentially significant in your assessment of modeled air pollutants. Mercury originates in the atmosphere from the impurities that exist within coal during the process of combustion and are subsequently released into the atmosphere. Coal power stations are known to be significant emitters of anthropogenic mercury. Mercury emissions in US Coal power stations are estimated to reach up to 50 tonnes per year.

However, modern coal-fired power stations with BAT flue gas cleaning equipment have the potential to remove up to 90% mercury in emissions. No significant mention is made within this report of the mercury reducing abatement technology to be used.

We believe that although this proposed coal fired power station might be beneficial to society at large there are negative implications that need to be assessed and taken into account. These negative impacts may have potentially adverse affects on both human health and the environment.

In this regard please provide a motivation why mercury is not considered to be a significant potential component of air emissions and whether there is any particular reasoning behind this? groundWork considers coal combustion as an essential source of unregulated environmental mercury emissions.

Various studies have indicated that mercury has potential to cause known harmful health implications especially on the most vulnerable populations such as the unborn foetus and young children because they are more sensitive to the toxic effects of mercury. Health concerns indicated in previous studies included damage to the heart, kidneys, lungs, immune system and the brain.

Furthermore we consider that cumulative emissions data of existing sources of pollution are fundamental to better assess and quantify health and environmental risks. The

Matimba coal fired power station that exists in this vicinity will contribute significantly to air quality in this locality and measured emissions from this source will contribute to understanding existing emissions.

In light of the above concerns, does Eskom propose to better quantify the potential emissions of mercury that already exist in this locality and will result during the eventual operation of this new coal fired power stations?

We look forward to receiving a reply to the above comments.

Sincerely

Rico Euripidou

Bobby Peek
Director, groundWork

**Appendix 4: In-session meeting of the Southern Sub-Regional Group, Cairo, 11 September 2006. Proposal # 3: Sub regional framework for the regulation and assessment of priority chemicals (motivated as a sub regional priority - Southern Region).**

The group accepted the following chemicals as sub regional priority chemicals where possible sub regional activities can achieve the goals of SAICM

1. Mercury and mercuric compounds
2. Lead
3. Cadmium

In the first instance the group agreed that a good starting point would be to focus on a single priority chemical. Mercury was considered the best choice as it is easily and clearly defined, and is receiving much attention in the context of international processes.

**Mercury**

Introduction

It is well known that mercury does not respect national or regional boundaries, travelling far and wide through the atmosphere, contaminating sub regional, regional and global food supplies alike at levels posing a major risk to human health, wildlife and the environment. It is therefore clear that, since current measures are not adequate sufficiently to reduce contamination from mercury, further actions must be taken. Furthermore there is virtually no remaining use of mercury (except in cases where no mercury-free alternatives exist e.g. fluorescent lamps) for which there are not viable and tested alternatives.

Activities

1. Develop a framework for assessing mercury in a sub-regional context.
    - To establish a sub regional (regional) trade tracking system and
    - Compiling inventories of imports and export data for these chemicals in order to regulate and restrict trade to only the necessary and the safe use of these chemicals (including the safe disposal thereof)
    - Baseline surveys of environmental mercury levels linked to human health risks
2. Provide a strong regional message on these "global priority chemicals" and to reinforce global actions on the reduction, safe regulated trade and disposal thereof.

In preparation for the 24th UNEP Governing Council meeting in February 2007 and in support of the UNEP global mercury project the group members should take account of the following strategic issues:-

- To support the motion for an EU export ban (as proposed by EU Environment Ministers in June 2005 and the European Parliament in March 2006, respectively).
- The EU is the world's largest mercury exporter. Most of this mercury goes to developing countries where it is often haphazardly used and released, potentially contaminating workers and their families, local communities and global food supplies.
- A strong EU position will not only encourage other countries to reduce mercury consumption. It will also encourage multilateral and global trade agreements, which are clearly needed to

significantly reduce the role of mercury as a traded global pollutant in the international economy.

- The scope of the export ban must cover metallic mercury, mercury compounds and mercury-containing products, which are, or will soon be subject to use and marketing restrictions within the EU.

Allowing the continued export of mercury compounds would create a loophole; EU traders could simply produce or trade mercury compounds for export, which comprise some of the largest global mercury uses. Thus an EU export ban would have a much reduced effect on global mercury trade or its consumption. For example, a recent report prepared for the EU indicates the mercury compound "calomel" is generated in significant quantities within the EU, most commonly in emission control systems at metal smelters. Calomel can readily be processed into commodity mercury at locations outside of the EU, thus the capability and experience of processing and trading calomel for this purpose already exists. Our information also indicates that converting the liquid metal to a mercury compound, and then converting it back to elemental mercury once it has left the EU, would cost about US$200 per flask. At the current market price of some $600 per flask, unscrupulous traders could further abuse the 'mercury compound loophole', and still make money (Only recently the price of mercury was only $200 per flask).

3. Undertake sub regional "sectorial" assessments of the impact of the priority chemical (mercury) in the following priority areas:

(a) Energy generation sector (coal fired power stations)

Mercury emissions from coal fired power stations can effectively be addressed using various technologies that are universally available. These include:

- Pre-combustion coal cleaning technologies (see refs below)
- Emissions capturing and cleaning devices using BAT
  - Activated Carbon Injection (ACI) used in conjunction with flue gas temperature controls
  - Enhanced Wet Scrubbing
  - Electro-Catalytic Oxidation (ECO®) for SO2, NOx, fine particles and mercury
  - Photochemical Oxidation (PCO™) licensed by Powerspan
  - http://www.epa.gov/mercury/control_emissions/tech_merc_specific.htm
  - www.netl.doe.gov/technologies/coalpower/ewr/mercury/control-tech/test-wet-fgd.html
- Switching to coal containing lower mercury

4. The chlor-alkali industry (decommissioned and current)

The storage of decommissioned mercury from the chlor-alkali industry must be started as a matter of priority where sites have been converted, in continuously-monitored secure sites, which are located where immediate intervention can take place if necessary. Decommissioned chlor-alkali plants must be assessed for mercury contamination and potential public health and environmental impacts. Sites found to be contaminated must be secured and remediated according to best available technology.

Furthermore mercury is imported to replenish losses suffered in operational chlor-alkali facilities.

a) Mining sector

One of the largest intentional uses of imported mercury into Africa is for small-scale gold mining, since few mercury-containing products are produced in Africa. In the mining sector the biggest issue in Africa is mercury use in small-scale gold mining, for which a better evaluation of mercury-free technologies and the challenges facing their deployment are needed.

b) Traditional medicinal uses

Mercury use in this context is unregulated and in serious need of assessment to estimate potential public and environmental health impacts.

c) Other anthropogenic sources

d) Crematoria & dental amalgam disposal

e) Disposal and incineration of mercury containing devices

f) General

The largest amounts of "other sources" of mercury entering Africa are most likely in products made elsewhere, and probably found in products like batteries from China and measuring equipment (like fever thermometers), also likely from China. Many products with remaining uses of mercury have viable and tested alternatives. Imports must be assessed in this regard.

5. References


- Trasande, L et al, (2005) Public Health and Economic Consequences of Methylmercury Toxicity to the Developing Brain. *Environ Health Perspectives* (May 2005) http://www.ehponline.org/members/2005/7743/7743.html

- National Wildlife Foundation, Getting the Job Done: Affordable Mercury Control at Coal Burning Power Plants, (Oct. 2004) available at http://nwf.org/nwfwebadmin/binaryVault/GettingTheJobDoneReport.pdf

- Institute of Clean Air Companies, Comments to the EPA on Docket #OAR-2002-0056, at 17-19 (June 2004 ) available at http://icac.com/files/public/hgcontrol62904.pdf (listing technologies that are currently available or are under development and will be available soon).

- US EPA, Preliminary Estimates of Performance and Cost of Mercury Emission Control Technology Applications on Electric Utility Boilers: An Update (June 2004), available at http://www.epa.gov/mercury/control_emissions/preliminary_estimates.pdf.

- US EPA, Performance and Cost of Mercury and Multi-pollutant Emission Control Technology Applications on Electric Utility Boilers (Oct. 2003) available at http://www.epa.gov/appcdwww/aptb/EPA600R03110.pdf.



**Sub Group Chair: Leon N. Ramatekoa lramatekoa@yahoo.co.uk ; esteyn@thedti.gov.za**

**Appendix 6: African region activities for mercury, Friends of the Earth International, African Regional Meeting, Nigeria, September 2006.**

## Mercury

### Introduction

It is well known that mercury does not respect national or regional boundaries, travelling far and wide through the atmosphere, contaminating sub regional, regional and global food supplies alike at levels posing a major risk to human health, wildlife and the environment. Furthermore there is virtually no remaining use of mercury for which there are not viable and tested alternatives (except in very few cases where no mercury-free alternatives exist e.g. fluorescent lamps).
It is clear that there are no meaningful current 'global' measures that adequately and sufficiently aim to reduce contamination from mercury, therefore further 'global actions' are necessary and must be taken. In the African region the following activities will contribute to meeting this goal:

### Activities

1. Develop a framework for assessing mercury in a Regional context.
    - To establish a Regional trade tracking system and
    - Compiling inventories of imports and export data for these chemicals in order to regulate and restrict trade to only the necessary and the safe use of these chemicals (including the safe disposal thereof)
    - Baseline surveys of environmental mercury levels linked to human health risks
2. Provide a strong regional message on this "global priority chemical" and to reinforce global actions on the reduction, safe regulated trade and disposal thereof.

    In preparation for the 24th UNEP Governing Council meeting in February 2007 and in support of the UNEP global mercury project the group members should take account of the following strategic issues:-
    - To support the motion for an EU export ban (as proposed by EU Environment Ministers in June 2005 and the European Parliament in March 2006, respectively).
    - The EU is the world's largest mercury exporter. Most of this mercury goes to developing countries where it is often haphazardly used and released, potentially contaminating workers and their families, local communities and global food supplies.
    - A strong EU position will not only encourage other countries to reduce mercury consumption. It will also encourage multilateral and global trade agreements, which are clearly needed to significantly reduce the role of mercury as a traded global pollutant in the international economy.

- The scope of the export ban must cover metallic mercury, mercury compounds and mercury-containing products, which are, or will soon be subject to use and marketing restrictions within the EU.
- Allowing the continued export of mercury compounds would create a loophole; EU traders could simply produce or trade mercury compounds for export, which comprise some of the largest global mercury uses. Thus an EU export ban would have a much reduced effect on global mercury trade or its consumption. For example, a recent report prepared for the EU indicates the mercury compound "calomel" is generated in significant quantities within the EU, most commonly in emission control systems at metal smelters. Calomel can readily be processed into commodity mercury at locations outside of the EU, thus the capability and experience of processing and trading calomel for this purpose already exists. Our information also indicates that converting the liquid metal to a mercury compound, and then converting it back to elemental mercury once it has left the EU, would cost about US$200 per flask. At the current market price of some $600 per flask, unscrupulous traders could further abuse the 'mercury compound loophole', and still make money (Only recently the price of mercury was only $200 per flask).
- Work should start towards a global binding instrument on mercury, as soon as possible. The findings of the Mercury trade report conducted for UNEP should be utilised and concrete actions should be taken including the following:

3. Global Mercury Demand Reduction
    a. Global mercury reduction goals should be achieved through the following means:
    - Developing a roadmap for the increased use of mercury-free technologies in small-scale and artisanal gold mining.
    - Enactment of legislation phasing out the use of hazardous substances in electrical and electronic equipment
    - Ending the use of mercury in the production of button cell batteries;
    - Phasing-out mercury in medical equipment and facilitate the transition in the developing world to non-mercury alternatives.
    - Ensuring that mercury-containing products and mercury-using processes, restricted in industrialized countries are not exported to developing countries;
    - Phasing out use of the mercury-cell chlor-alkali process

4. Global Mercury Supply Reduction

c. A hierarchy of mercury supply sources should be established, favouring mercury from by-product production and the recycling of wastes.
d. Excess mercury supply should be prevented from entering into global market by:
    i. Increasing restrictions of mercury exports from developed nations;
    ii. Including mercury into the Rotterdam Convention on the Prior Informed Consent Procedure;
    iii. Establishing a working group to develop recommendations for the coordinated management of mercury from closing mercury cell chlor-alkali facilities; and

iv. Identifying options for increasing mercury by-product production from zinc smelting and industrial gold production and simultaneously obtaining mercury emission reduction co-benefits.

5. Financial Assistance

Developed countries should provide new and additional financial resources to support these activities in developing nations, and GEF should create a financial assistance mechanism to support global mercury activities consistent with the above proposals.

6. Undertake regional and sub regional "sectorial" assessments of the impact of the priority chemical (mercury) in the following priority areas:

a. Mining sector

One of the largest intentional uses of imported mercury into Africa is for small-scale gold mining, since few mercury-containing products are produced in Africa. In the mining sector the biggest issue in Africa is mercury use in small-scale gold mining, for which a better evaluation of mercury-free technologies and the challenges facing their deployment are needed.

b. Energy generation sector (coal fired power stations)

Mercury emissions from coal fired power stations can effectively be addressed using various technologies that are universally available. These include:

- Pre-combustion coal cleaning technologies (see refs below)
- Emissions capturing and cleaning devices using BAT
    - Activated Carbon Injection (ACI) used in conjunction with flue gas temperature controls
    - Enhanced Wet Scrubbing
    - Electro-Catalytic Oxidation (ECO®) for SO2, NOx, fine particles and mercury
    - Photochemical Oxidation (PCO™) licensed by Powerspan
- Switching to coal containing lower mercury

c. The chlor-alkali industry (decommissioned and current)

The storage of decommissioned mercury from the chlor-alkali industry must be started as a matter of priority where sites have been converted, in continuously-monitored secure sites, which are located where immediate intervention can take place if necessary. Decommissioned chlor-alkali plants must be assessed for mercury contamination and potential public health and environmental impacts. Sites found to be contaminated must be secured and remediated according to best available technology.

Furthermore mercury is imported to replenish losses suffered in operational chlor-alkali facilities.

d. Traditional medicinal uses

Mercury use in this context is unregulated and in serious need of assessment to estimate potential public and environmental health impacts.

e. Other anthropogenic sources

- Crematoria & dental amalgam disposal
- Disposal and incineration of mercury containing devices

f. General

The largest amounts of "other sources" of mercury entering Africa are most likely in products made elsewhere, and probably found in products like batteries from China and measuring equipment (like fever thermometers), also likely from China. Many products with remaining uses of mercury have viable and tested alternatives. Imports must be assessed in this regard.

7. References


- Trasande, L et al, (2005) Public Health and Economic Consequences of Methylmercury Toxicity to the Developing Brain. *Environ Health Perspectives* (May 2005) http://www.ehponline.org/members/2005/7743/7743.html

- National Wildlife Foundation, Getting the Job Done: Affordable Mercury Control at Coal Burning Power Plants, (Oct. 2004) available at http://nwf.org/nwfwebadmin/binaryVault/GettingTheJobDoneReport.pdf

- Institute of Clean Air Companies, Comments to the EPA on Docket #OAR-2002-0056, at 17-19 (June 2004 ) available at http://icac.com/files/public/hgcontrol62904.pdf (listing technologies that are currently available or are under development and will be available soon).

- US EPA, Preliminary Estimates of Performance and Cost of Mercury Emission Control Technology Applications on Electric Utility Boilers: An Update (June 2004), available at http://www.epa.gov/mercury/control_emissions/preliminary_estimates.pdf.

- US EPA, Performance and Cost of Mercury and Multi-pollutant Emission Control Technology Applications on Electric Utility Boilers (Oct. 2003) available at http://www.epa.gov/appcdwww/aptb/EPA600R03110.pdf.

- http://www.epa.gov/mercury/control_emissions/tech_merc_specific.htm

- www.netl.doe.gov/technologies/coalpower/ewr/mercury/control-tech/test-wet-fgd.html

**Appendix 7: Mercury collection and disposal questionnaire**

P.O.Box 2375
Pietermaritzburg, 3200
191c Burger Street
Pietermaritzburg, 3201
South Africa
Tel: +27 -33-342 5662
**Fax: +27-33-342 5665**
team@groundwork.org.za
www.groundwork.org.za



Dear Sir or Madam

**Re: Mercury collection and disposal**

I am a health researcher employed by groundWork, an environmental justice NGO based in KwaZulu-Natal working with civil society in South and Southern Africa. I am working on a project to understand mercury better in the South African context and have prepared some questions regarding mercury policy generally around South Africa.

I would be very grateful if you considered and answered the following questions in the space provided below as soon as possible. Once you have completed these questions please fax this questionnaire back to me at **033-342 5665.**

If you cannot answer these questions I would be very grateful if you forwarded me names of colleagues at local or the district level who might be in a better position to do so. If you don't know of anyone else, please fill this in as best you can.

Specifically we are trying to understand what capacity and facilities Local Authorities have in place to collect and dispose mercury safely. Even if there are none, we would still like you to complete this form.

Q1. In the event that a member of the public calls your department regarding a mercury spill (e.g. at a school) is there a protocol in place to investigate, collect and safely dispose this material.
*Yes No (please circle)*
If yes can you please attach a copy of this protocol.

Q2. If there is no protocol in this regard what actions would the department normally take in response to this call?

---
---
---

Q3. What kinds of collection practices are in place locally that you are aware of? For instance, pharmacies or local activities collecting mercury from e.g. broken thermometers?

---
---
---

Q4. Are there any specific health advisories on mercury in place in your district?
*Yes No (please circle)*
If yes can you please attach a copy of this protocol.

Q5. Are there any recommendations to limit fish consumption, i.e. national fish consumption guidelines, in women of childbearing age, pregnant women, infants and children in your LA/district?
*Yes No (please circle)*
If yes can you please attach a copy of this protocol.

Q6. Does anybody at your unit undertake routine mercury sampling in the environment (air, soil, food or water?).
*Yes No (please circle)*
If yes can you provide more details in this regard.

---
---
---
---

Q7. Does the LA/District regulate the trade of mercury in any form of local permits?
*Yes No (please circle)*
If yes can you provide more details in this regard.

---
---
---
---

Q8. Are you aware of any informal trade in mercuric compounds?
*Yes No (please circle)*
If yes can you provide more details in this regard.

---
---
---
---

Q9. Are there guidelines or restrictions on the use and disposal of mercury in the LA/District?
*Yes No (please circle)*
If yes can you provide more details in this regard.

---
---
---
---

Q10. Do artisanal miners use mercury in your district?
*Yes No (please circle)*
If yes can you provide more details in this regard.

---
---
---
---

Q11. Would you like more information on the safe handling/disposal of mercury and alternatives to medical equipment containing mercury?
*Yes No (please circle)*
If yes can you provide your details.

---
---
---
---

Furthermore can you please take the time to update our information and provide us with your most current telephone, fax and email addresses.

Name:
Organisation:
Designation:
Email Address
Physical Address

Thank you and kind regards in advance for your co-operation
Rico Euripidou

groundWork
Box 2375 Pietermaritzburg. 3200.
South Africa
Tel: +27 (0)33 342 5662. Fax: +27 (0)33 342 5665
www.groundwork.org.za
Friends of the Earth member for South Africa

Sincerely

Rico Euripidou