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**UN Environment Global Mercury Partnership  
Partnership Advisory Group, Eighth Meeting**  
Geneva, Switzerland, 22 September 2017

**Report on activities undertaken within the UN Environment Global  
Mercury Partnership (April 2016 – July 2017)**

**Note by the Secretariat**

The Overarching Framework of the UN Environment Global Mercury Partnership outlines that one of the responsibilities of the UN Environment Global Mercury Partnership Advisory Group is to report on activities undertaken within the UN Environment Global Mercury Partnership.

The Chemicals and Health Branch of the UN Environment Economy Division has drafted a report on activities within the UN Environment Global Mercury Partnership, which is set out in the annex to the present note. The current version reflects input received from the partnership area report since the seventh meeting of the Partnership Advisory Group.

The Partnership Advisory Group may wish to discuss and provide input on the report on activities which could be basis for future work of the Partnership with entry into force of the Minamata Convention.

## Annex

### I. Introduction

The Overarching Framework of the Global Mercury Partnership specifies that one of the responsibilities of the Global Mercury Partnership Advisory Group is to report on activities undertaken within the Global Mercury Partnership.

Under the Global Mercury Partnership, eight partnership areas have been established, including: artisanal and small-scale gold mining, mercury cell chlor-alkali production, fate and transport, mercury in products, coal combustion, mercury waste management, mercury supply and storage, and mercury releases from cement industry.

This report provides a list of the highlights of partnership area activities over the period of April 2016 to July 2017, per partnership area. It is based on the input received from the leads and co-leads of the partnership areas.

### II. Overview

#### Participation

The number of official partners is steadily growing:

- As of 16 August 2017, there were 166 official partners in the Global Mercury Partnership, including 31 governments, 9 intergovernmental organizations, 60 non-government organizations, and 66 others.
- Some of the partners are global industry partners that collaborate and represent a large number of national associations. In addition, the Partnership works with a number of stakeholders that have not yet officially joined.

#### Organisation

Ms. Marianne Bailey and Mr. Mitch Cuna are currently serving as co-chairs of the Partnership. Individual partnership areas are led by the following organisations.

- Artisanal and small scale gold mining: the Natural Resources Defence Council (NRDC), UN Environment Programme and the United Nations Industrial Development Organization (UNIDO)
- Mercury cell chlor-alkali production: the Government of the United States of America
- Mercury air transport and fate research: the CNR- Institute of Atmospheric Pollution Research, Italy and the Biodiversity Research Institute, USA
- Mercury-containing products: the Government of the United States of America
- Mercury releases from coal combustion: the International Energy Agency Clean Coal Centre and Macquarie University, Australia
- Mercury waste management: the Government of Japan
- Mercury supply and storage: the Governments of Spain and Uruguay
- Mercury releases from cement industry: the World Business Council for Sustainable Development, Cement Sustainability Initiative

## Delivery

The activities of the Partnership were delivered in the form of the following. Detailed activity reports from individual partnership areas are provided in the next section.

- Guidance materials
- Information gathering and exchange
- Advocacy and awareness raising
- National and regional strategy planning
- Demonstration projects

## Future work

Future work planned by each partnership area is described in the following section.

## III. Activity Report by Partnership Area

### 1) Artisanal and small-scale gold mining

- a) NRDC, UN Environment, and UNIDO are jointly leading the artisanal and small-scale gold mining partnership area.
- b) The objectives of the partnership area are:
  - Support governments in setting national objectives/targets
  - Eliminate worst practices and promote alternatives
  - Exploring innovative market-based approaches
- c) Key activities in this area include:

#### **Priority Action 1: Support governments in setting national objectives/targets**

- With financial support from GEF, UNIDO is supporting the following countries to conduct Minamata Convention Initial Assessments (MIA): Armenia, Benin, Burkina Faso, Cabo Verde, Chad, China, Colombia, Comoros, Guatemala, Guinea, Mali, Nepal, Niger, Nigeria, Sao Tome & Principe, Senegal, Sri Lanka, Sudan, Togo, Turkey, Vietnam, and Yemen. The purpose of this project is to support the ratification and early implementation of the Minamata Convention. Similarly, UNIDO is supporting Burkina Faso, Ecuador, Gabon, Ghana, Mozambique, Nigeria, and Peru to develop their National Action Plan for the ASGM sector, an obligation under the Minamata Convention for countries that acknowledge that ASGM is more than insignificant.
- With financial support from GEF, UN Environment is supporting the following 53 countries to conduct Minamata Convention Initial Assessments (MIA): Angola, Belarus, Bolivia, Botswana, Brazil, Burundi, Cambodia, Cameroon, Central African Republic, Chile, Congo, Cook Islands, Cote d'Ivoire, Djibouti, Dominican Republic, Democratic Republic of the Congo, El Salvador, Eritrea, Ethiopia, Gabon, the Gambia, Honduras, Indonesia, Iraq, Jamaica, Kiribati, Lao PDR, Lesotho, Macedonia, Madagascar, Malawi, Maldives, Mexico, Moldova, Myanmar, Namibia,

Pakistan, Palau, Papua New Guinea, Paraguay, the Philippines, Sierra Leone, South Africa, St Kitts and Nevis, St Lucia, Swaziland, Tanzania, Tonga, Trinidad and Tobago, Uganda, Vanuatu, Zambia and Zimbabwe. The purpose of these projects is to support the ratification and early implementation of the Minamata Convention. Similarly, UN Environment is supporting 23 countries (Burundi, Central African Republic, Congo, Democratic Republic of the Congo, Eritrea, Guinea, Honduras, Indonesia, Kenya, Lao PDR, Madagascar, Mali, Mongolia, Myanmar, Niger, Paraguay, Senegal, Sierra Leone, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe) to develop their National Action Plan for the ASGM sector, an obligation under the Minamata Convention for countries that acknowledge that ASGM is more than insignificant.

- By end of 2016, an opportunity to acquire the address [artisanalmining.org](http://artisanalmining.org), the expired former domain of the CASM initiative's website, was identified by the Montanuniversitaet Leoben (Austria). With a commitment to knowledge sharing in benefit of the millions of artisanal and small-scale miners worldwide, a new [artisanalmining.org](http://artisanalmining.org) website was launched, hosting the "Artisanal and Small-scale Mining Knowledge Sharing Archive". The first activity in 2017 was to bring the lost files (many of them documenting valuable experiences of past ASGM mercury reduction efforts) from the former CASM website online again. Together with colleagues, the knowledge repository "The CASM Files" was reconstructed, currently hosting ca. 600 files (but many files are still missing). Subsequently, UNIDO authorised [artisanalmining.org](http://artisanalmining.org) to mirror and share the files of the former Global Mercury Project for increased visibility. Again, colleagues contributed further files for building "The GMP Files" repository, hosting ca. 200 files. It is envisaged that [artisanalmining.org](http://artisanalmining.org) will evolve into a participatory open source knowledge sharing platform for the wider ASM and ASGM community.
- The Canadian International Resources & Development Institute (CIRDI) launched in 2016 a project entitled "Supporting Capacity-Building and Multi-Level Governance of Small Scale Gold Mining: A Collaborative Project on Mercury, Deforestation and Rural Livelihoods in Indonesia". Through Dr. Sam Speigel, University of Edinburgh, the project is working with the Government of Indonesia to successfully implement its ASM-relevant mercury policies to address the country's poverty reduction and environmental protection objectives. This project seeks to strengthen institutional knowledge and capacity at the district, provincial and national levels in relation to the governance of the ASM sector. The project will strengthen awareness of the environmental and social dimensions of gold mining in 3 districts in Central Kalimantan, engaging policymakers, larger companies and other stakeholders; develop strategies for collaboratively implementing the Minamata Convention on Mercury, identifying how treaty implementation could be a pathway for Indonesian authorities and community organizations to address locally identified challenges (including pollution and deforestation) while strengthening rural livelihoods; implement and evaluate locally led capacity-building efforts in support of the Indonesian National Action Plan (NAP) for the Minamata Convention; promote

community-based development and risk mitigation in gold mining areas; and develop partnerships for longer-term collaboration with Indonesian authorities on poverty reduction strategies and risk mitigation in the mining sector. This two-year project is funded through CIRDI's Contribution Agreement with Global Affairs Canada.

- Similarly, CIRDI is working directly with the Government of Ecuador through the Ministry of Mines to develop a long-term education and training program that will bring Canadian technical mining expertise and educational programming to Ecuador's small-scale miners. Detailed stakeholder and needs assessments, participatory action research on mercury-free alternatives for small-batch gold extraction, and rapid environmental and health assessments identifying worst-practices and impacts of current tailings management practices will be carried out to support the development of in-situ training targeting ASM. The training will focus on improved mining/extraction practices, processing and waste management practices, and business skills and small and medium-scale enterprise. The training will be complemented by a long-term inter-donor implementation plan that will be developed jointly with CIRDI's partners. The project brings together a wide range of stakeholders including regional representatives of Ecuador's southern mining communities, Ecuador's Ministry of Human Talent and Ministry of the Environment, UN Agencies (UNIDO and UNDP) and Canadian and Ecuadorian academic and industry experts, to develop a best-in-class educational model for the ASM sector that can be applied in Southern Ecuador. The program design blends Canadian and Ecuadorian experience and, through education, contributes to the development of a more socially and environmentally responsible ASM sector in Ecuador. This two-year project is funded through CIRDI's Contribution Agreement with Global Affairs Canada.
- In Colombia, CIRDI works since 2016 on post-conflict transformation of ASM through education, organization, consultation. A well-regulated ASGM sector can play an important role in Colombia's transition to peace. The Department of Choco is one of the most important ASM regions in the country, with large parts of the population dependent on revenues generated by mining. This post-conflict project will work with national government institutions, local authorities, and FARC leadership to address issues impeding the formalization and long-term viability of the sector. This project will improve access to information and informed decision-making for ASM community, and national and local government actors, and will strengthen post-conflict consultation and collaboration among key stakeholders. In particular, the project will increase beneficiary access to key sectoral information, will enhance understanding of their mining activities, and will support informed decision-making on land-use, current and historic ethnic realities of practitioners, and the path towards formalization and long-term sustainability. The project will also prepare ASM practitioners to increase the participation of women in the sector, provide training and guidance in improved processing techniques, and help develop business skills required to sustain the sector in a manner that brings benefit back to

the community and country as a whole. The government, FARC and target communities have all indicated their interest in participating in this pilot project, which will produce a road-map to formalization replicable in similar communities of the region. In addition, the United Nations Industrial Development Organization has submitted a proposal to work in the same region on a project aimed at finding alternatives to ASM, and have indicated their desire to streamline project activities with CIRDI. In particular, they have identified the value of CIRDI's sectoral and technical expertise as being of value to their project. Ultimately, project activities will support the long-term sustainability of the ASM sector and its eventual formalization. This 1.5 year project is funded through CIRDI's Contribution Agreement with Global Affairs Canada.

- In Ghana, CIRDI is supporting the government through the project "Blazing the Path to Formalization: Artisanal Mining, Wealth Creation and Rural Livelihoods". This applied research project aims to deepen current understanding of financial flows in ASM communities. The study is geographically focused in southwestern Ghana and uses a "financial diaries" approach to expose how formal and informal financial relations affect the livelihoods and well-being of poor individuals in Sub-Saharan Africa. The research will be shared with government officials to inform formalization and micro-financing models. Previous research on ASM has documented how many entrants to the ASM sector become adversely incorporated into exploitative relationships with buyers and middlemen, and become trapped in cycles of borrowing and indebtedness. As countries move towards formalization of the sector, it is important that these dynamics are better understood and recognized in order to break such cycles of exploitation instead of legally entrenching them. Using the study results as a platform, government and civil society stakeholders will be engaged to explore a range of institutional mechanisms for facilitating better financial inclusion of those engaged in ASM, with the aim of improving access to financial services capable of reducing poverty and improving livelihoods (e.g. microfinance services), and to draw upon the demand side and contextual data collected to appraise their ability for improving multi-level wellbeing and resilience. This 2-year project is funded through CIRDI's Contribution Agreement with Global Affairs Canada.
- Developing Mercury Inventories in Artisanal and Small-scale Gold Mining in Southeast Asia: BaliFokus and BanToxics conducted grassroots-level inventories and local action plan development; national policy review and update, including the national action plan (NAP) on ASGM; and the regional study and coordination on mercury trade, export and import within the Southeast Asia region. The program at grassroots level involved local stakeholders and local action plans developed in reference to the national action plan and the guidance provide by the Minamata Convention on Mercury. Inventory activities (including training) were conducted in the field using standardised inventory steps and the UNEP mercury toolkit. At the national level, the project will focus on efforts to improve the data recording and reporting of mercury export, import and trade within the country that will be inserted

into the national mercury inventory report. Also, as both Indonesia and the Philippines developed their NAP on ASGM before the final text of the Convention was adopted, there is a need to review and update their NAPs to ensure compliance. In addition to Indonesia and the Philippines, the program at the regional level also included the relevant authorities of Singapore, Malaysia, Vietnam, and Mongolia, and research -- both desk study and on-the-ground. Results of this study will be communicated via a dialogue on mercury trade, export and import from and to those countries, under the auspices of the UNEP Interim Secretariat for the Convention.

- In Peru, the Syracuse University is currently conducting an assessment of the supply of mercury from artisanal and small-scale gold mining activities and its fluvial transport and methylation in Madre de Dios. The project started in September 2016 and will run until December 2017. The project seeks to determine the supply of Hg from ASGM activities, its fluvial transport, and its impact on the indigenous population in the Madre de Dios region. It will quantify the concentrations of Hg species in the sediments, water, and fish in two watersheds within Madre de Dios region, to characterize the transport of Hg and its methylation along the watershed and to assess the impact of ASGM activities in each of the two watersheds by comparing annual Hg concentrations. Two streams, Tambopata River and Heath River, are tributaries flowing to the Madre de Dios River and were chosen for their distinct attributes: 1) Tambopata River, a tributary with agricultural watershed that receives inputs from the mining-impacted Milanowski River and 2) Heath River, a tributary with undisturbed watershed, which marks the natural border between Bolivia and Peru. The ultimate goal of this project is to establish a long-term monitoring site in the eastern part of Madre de Dios region, which will be run by local scientists.
- The European Environment Bureau, with its Zero Mercury Working Group partner organizations, is implementing a project (July 2014-December 2017) called “Contributing to the preparation/implementation of the Minamata Convention, with focus on developing strategies to implement product phase-out provisions and the national action plans for Artisanal and Small Scale Gold mining.” (This project is funded by the European Commission via the Food and Agriculture Organisation of the UN under the programme “Capacity Building Related to Multilateral Environmental Agreements (MEAs) in Africa, Caribbean and Pacific (ACP) countries, phase 2 (ACP/MEAs2)”. As part of this effort, the project has been assisting the governments of Tanzania and Ghana with the development of ASGM national action plans (NAPs), including collecting baseline data on the sector and facilitating consultations with mining communities. In particular, in both Ghana and Tanzania, the project facilitated several regional meetings with miners, as well as a National Stakeholder meeting, even before the NAP process was formally kicked off. The project also created background documents on the profile of the ASGM sector, as well as a series of short briefing papers, that are accessible to decision makers, on key issues under the NAP. These issues papers will be useful for the NAP steering committees in each country to consider when creating various

strategies to address these under the NAP. The project recently held a two day workshop in Nairobi, with more than 30 African countries attending, in order to share experiences about NAP preparation, with particular emphasis on the engagement of civil society, and in particular miners, in the NAP process. The workshop was preceded by a UN Environment Training on developing baseline estimates for the ASGM sector through a National Action Plan (NAP). The project also created a miner consultation guidance document for use by countries in their own NAP preparation processes.

- In 2016, UN Environment lead the development of a multi-country, multi-agency GEF programme entitled Global Opportunities for the Long-term Development of the ASGM sector. The Programme, to be implemented in Burkina-Faso (UNIDO), Colombia, (UNDP), Guyana (CI), Indonesia (UNDP), Kenya (UNDP) Mongolia (UN Environment-UNIDO), Peru (UNDP) and the Philippines (UN Environment-UNIDO) and has 4 main components, the first one aiming at supporting the formalization of the sector in each country. UN Environment is implementing the Communication and Knowledge Management part of the programme which will document all the results of each projects on this issue.

### **Priority Action 2: Eliminate worst practices and promote alternatives**

- The Institute of Total Environment from Cameroon reported unfortunately an increase in mercury usage in the locality of Betare-Oya in the East of Cameroon. The eastern part of Cameroon where gold has been extracted for many decades bordered the Central Africa Republic (CAR) for hundreds of kilometres. Conflict in CAR resulted in the displacement of thousands of people including gold miners that introduced the use of mercury. Adding to this issue, it appears that women, including pregnant women and children are responsible for the amalgamation process.
- The University of British Columbia continued its efforts through co-existence projects in Colombia with interventions in Gramalote (with financial support from AngloGold Ashanti), in Buritica for Continental Gold, in California Vetas for MINESA. These projects focus on (i) the review of the socio-economic situation of the artisanal miners, (ii) assessments of:
  - mercury consumption and processes used;
  - needs, motivations and skills of the miners to participate in a co-existence program with an industrial mining company;
  - perceptions and aspirations of the artisanal miners; and,
  - mercury and cyanide environmental impacts,

(iii) drilling campaign to estimate reserves and design a small mine for the artisanal miners within an industrial mining concession, (iv) metallurgical testwork, pre-feasibility study and plant design for 100-200 tonnes of ore per day Hg-free plant for the artisanal miners, and (v) designing of a business plan for company and miners. In addition, the University is also supporting mill-leaching process for artisanal miners in Kenya in order to eliminate mercury use. The laboratory work was concluded and the plant is now being implemented for 250 kg of ore/day. Finally, within a UNIDO

implemented project in Portovelo-Zaruma, Ecuador, the University (i) investigated environmental pollution stemming from gold mining and processing, and (ii) assessed possible measures for the reduction of mercury and other contaminants. The study includes chapters on:

- Fluvial Mobility of Pollutants in the Puyango-Tumbes River Basin;
  - Atmospheric Pollution of Mercury in Portovelo-Zaruma
  - Characterization of the Potential Impacts of Mercury and other Heavy Metals on Important Food Items in the Puyango-Tumbes River Basin;
  - Mercury (II) binding activity of vegetable and fruit juices, including the identification of potential detoxifying juice mixtures for the citizens of Portovelo-Zaruma;
  - Ecological Risk Assessment of Mining Contamination; and,
  - Recommendations for Future Action
- Since 2009, the Montanuniversitaet Leoben offers annually a course on Artisanal and Small-scale Mining, held by Felix Hruschka, as elective subject of the MSc curriculum for Mineral Resources Engineering. The course has a strong focus on mercury use by ASGM and on approaches to its reduction or elimination. Guests participants (not entitled to a university certificate) are admitted. In 2016 and 2017, as in former years, staff from UNIDO as well as independent professionals took this course as an open ASM training opportunity.
  - The Canadian International Resources & Development Institute (CIRDI) supported a number of countries through targeted projects. The project entitled “Mainstreaming Gender in the APEC region and beyond” was launched. This year project is co-financed by APEC (\$200,000 USD). In developing countries, the artisanal and small-scale mining (ASM) holds potential to drive and diversify local economic growth, create jobs and reduce extreme poverty. Too often, however, equal opportunities fail to materialize for men and women, and gender parity, income inequality and gender-based violence can deliver as much, or more damage than positive impact. Gender represents an essential cross-cutting socio-cultural variable for education and development assistance in ASM, and refers to social attributes that are learned or acquired. Because gender attributes or norms are learned behaviours, they vary across cultures and are contextual, time-specific and changeable. Achieving equitable development gains from ASM depends on how differentiated access to resources and opportunities affect men, women and youth across the value chain, and managing related risks. Working alongside the US Department of State and the Artisanal Gold Council, CIRDI is developing a course on gender issues in artisanal and small-scale gold mining (ASGM) for the Asia-Pacific Economic Cooperation (APEC) Commission. The objective of the project is to develop a course curriculum focused on analysing gender-differentiated impacts of ASGM, identifying opportunities for reducing gender inequalities and advancing more equitable and active participation of women, girls, boys and men in the ASGM value chain. The course is intended for public service employees engaged in mining policy development; artisanal and small-scale miners; private sector employees including social responsibility and community engagement managers/specialists working in

mining, consulting and engineering companies as well as engineers and other technical specialists who wish to broaden their understanding of gender in the ASGM sector.

- In Guyana, CIRDI completed a project entitled “Supporting Technical Training in Extractive Industries” and funded by IDB (\$US250,000). Using a “train the trainers” model, this project focused on curriculum development and course delivery for greener and more sustainable mining practices. A theoretical training component was delivered to a group of over 60 public officials, local miners and individuals newly entering the mining labour force. Topics covered included: health and safety in mines and processing, environmental management strategies, work safety, and miners’ responsibility for environmental conservation and transitioning away from mercury use. A practical train-the-trainer component targeted 26 engineers and officers of the Guyana Geology and Mines Commission (GGMC). It focused on the implementation of mercury-reducing technologies, looking specifically at concentration technology and gravimetric separation. This practical training included an in-field component where the new ‘trainers’ delivered training on concentration via centrifugation to miners at two popular colluvial mine sites in the Mahdia region of Guyana. The project also included upgrading of classroom facilities for theoretical training at a GGMC laboratory in Linden, and the design and procurement of a mobile training unit for practical in-situ training on gravity concentration.
- Within the project scope, CIRDI also designed and produced a scoping study that profiled and compared seven countries, each with a significant gold mining industry (Guyana, Suriname, Colombia, Ecuador, Panama, Dominican Republic and Brazil). CIRDI developed the methodology for the study, undertook the literature review, stakeholder consultations, managed the findings and produced the final report. The study identified the skills gaps that are contributing to environmental damage and impeding environmental compliance. Good and bad environmental practices were addressed including deforestation, biodiversity loss, river siltation, soil erosion, mercury contamination and cyanide contamination as well as the national environmental legislation. Each country profile included an assessment of training initiatives completed in country to date, as well as the apparent will from stakeholders for implementing further training initiatives. Opportunities for regional collaboration in capacity building initiatives were also assessed. CIRDI delivered a presentation of the findings to the Government of Guyana and the IDB.
- The Alliance for Responsible Mining (ARM) is supporting a number of countries through field interventions. In Bolivia and in the framework of a regional Inter-American Development Bank (IADB) project (2013-2017) covering Bolivia, Colombia and Peru, the design of improvement plans targeted specific mercury issues in ASM organisations (ASMO). The implemented activities in Bolivia in 2016-2017 focus on 3 mines (Cooperativas mineras 15 de agosto, Señor de Mayo y Yani R.L), as follows:
  - Diagnostic of the use of mercury; chemical and mineralogical analysis;

- Design, consultation on and monitoring of improvement plans of action on mercury reduction and elimination; these have been combined with self-care awareness campaigns in 3 mining cooperatives;
  - Technical assistance on building efficient and safe centres of amalgamation and the use of retorts with proper ventilation systems.
  - Assistance to monitor the reduction of use of mercury.
- Still in Bolivia, ARM is executing a project on “Technology, Training, and Capacity Building in Artisanal and Small-Scale Gold Mining: Using Mobile Training Units to Promote Cleaner, Safer, and More Sustainable Livelihoods in Peru and Bolivia”, implemented in partnership with the Colorado School of Mines, USA, and funded by the US Department of Labour. The objective is to identify the optimal mercury-free processing solutions on the basis of specific studies performed by students of the school. This project is being executed from September 2016 to December 2017, with the following activities:
    - In situ demonstrations in the Yani R.L. Co-operative on the importance of having a metallurgical laboratory enabling control of the gold recovery while implementing a program on reduction, and further, the elimination of the mercury in the process;
    - Identification of training needs for the person in charge of the metallurgical laboratory;
    - Technical assistance on the set-up of the metallurgical laboratory
    - Virtual course for administration staff on methodologies and good examples of mercury reduction and elimination plans for ASGM organizations
- In Colombia and also in the framework of the IABD funded project (2013-2017), ARM is conducting geological studies and mine planning design for the assessment of the minimum requirements for a processing plant in the Nariño – La Llanada area (the mine of Fortaleza – La Gualconda). For this, different activities are being implemented:
    - Several mineralogical and chemical analyses are performed to determine the optimal technical solution for phasing-out of the mercury use;
    - Studies and advice for compliance with the country environmental requirements regarding a new processing plant;
    - Technical assistance for the setting-up of the processing plant and the purchase of necessary additional equipment for mercury elimination by the miners’ association
- Also in Colombia and in the framework of the Somos Tesoro project, a study performed in 2016 in collaboration with the University of Catalunya, Spain, in the area of the Bajo Cauca, Department of Antioquia, led to the identification of the main issues and places of mercury use, in alluvial, panning type of exploitation, but also in primary quartz veins environment. Collection of samples combined with a survey on miners and local communities allowed to illustrate and point out the worst practices in mercury use. Results were shared with the local communities during participatory workshops.

- In Peru within a project implemented with the Colorado School of Mines (also active in Bolivia, see above), and while some activities are implemented with a Peruvian mining organization (Empresa Ballón – Industrial park of the Relave Community) ARM conducted the following activities:
  - Identification of mercury contamination hotspots by mapping techniques and sampling of waters and soils in the Relave town;
  - Implementation of workshops on self-management on the mercury use with children and teenagers, within all of the education institutions of the Relave town, and subsequent dissemination of the messages and material produced by the children to all of the community;
  - Remodelling of the ARM methodologies and material for the design of training curricula on the use and handling of mercury;
  - Specific training on making, implementing and monitoring mercury reduction and elimination plans;
  - Motivate the creation of a community committee of monitoring and evaluation and capacity building of its members to follow-up the implementation of mercury related projects.
- Through a UNIDO implemented and GEF and FFEM funded project in Burkina Faso and Senegal (2013-2016) ARM essentially focused its intervention on the capacity building of the miners in their efficient organization and methodology to work with the mercury-free station set-up by the Artisanal Gold Council (AGC) for the Foukhaba/Bantaco, South-East Senegal. It focused on:
  - Accounting training session, but also organisation of the use of the processing station and a full process of occupational health and safety risks management;
  - Additional activities were implemented with the women miners of this association and with the cooperative of Gombélé Dougou in Burkina Faso. Technical assistance was provided to implement higher performance processing tools for the alluvial and surface mining, which are mercury-free techniques. A trommel was built locally in Senegal and tested with women.
- Finally, through a one-year project funded by the University of Reims in France and by the Catholic University of Lyon, ARM is tackling the use of mercury in the community of the 25,000-citizen community of Zorgho in Burkina Faso. The intention is to first analyse the situation of various stakeholders, including the main processing plants that concentrate the ore processing of various sites around the community and to design a technically more efficient processing line without the use of mercury. This work includes the performance monitoring and is performed on the full participation of local and national authorities, in addition of the directly concerned stakeholders.
- In addition to the project mentioned above and during the reporting period, UNIDO also completed interventions aiming at reducing mercury use in the ASGM sector. Specifically, SAICM funded project were completed in Ivory Coast and Mali. Under each project an assessment of the current situation was conducted and outlines for National Action Plans were developed. A GEF funded project in the Philippines was also successfully completed.

- In Guinea, the Artisanal Gold Council mapped out the gold and mercury supply chains. In the process, AGC also developed a mercury inventory and assessed the potential for implementing a mercury reduction model originally developed in Burkina Faso, in which the installation of mercury free processing systems is funded from within the local mining community itself and thus “self-replicates.” Results of the mercury inventory will be published on the global ASGM mercury database, hosted by the AGC ([www.mercurywatch.org](http://www.mercurywatch.org)). This field work will increase understanding of ASGM governance, supply chains and gold exportation, and thereby an increased understanding of the logistical requirements needed to facilitate the implementation of the “self-replicating” model and potential financial models that could work in this region. The project also included a workshop for delegations from Ghana and Guinea in Ouagadougou, Burkina Faso with a site visit to a mercury-free processing plant.
- Two training modules are being developed, in collaboration with private sector organizations in the framework of the Asia-Pacific Economic Cooperation Mining Task Force grant, in support to efforts towards elimination of mercury use: 1) business planning to increase the capacity of the ASGM sector to engage with the private sector and facilitate investment and 2) the role of women in small-scale gold mining. Benchmarking workshops will be held in coordination with parallel efforts on miner training: economies under consideration include Papua New Guinea, the Philippines, Indonesia, and Peru. Results will be shared with APEC economies at a workshop held on the margins of the 2018 Mining Task Force meeting in Papua New Guinea.
- Funded by the United Kingdom Department for International Development, Pact has been implementing the Zimbabwe Accountability and Artisanal Mining Program (ZAAMP) since 2014. In 2015 Pact partnered with the Environmental Management Agency (EMA) to train 300 miners in Zibagwe, Shurugwi and Gwanda districts on the dangers of mercury and ways to reduce their use of it. Pact’s training emphasized the safe use of mercury and the need for miners to wear protective clothing and store mercury safely. Pact has also provided 300 miners with protective clothing. In 2017 Pact, will reinforce the training focusing not just on mercury abatement but on environmental remediation as well. The training has been particularly important given that the Ministry of Environment, Water and Climate has stepped up efforts to develop an inventory on mercury use in Zimbabwe in line with the provisions of the Minamata Convention. On 22 June 2017, Pact conducted a mercury abatement dialogue and share fair event that will bring together stakeholders from Government, academia, the private sector and the development community. The purpose of the event was to provide space for the Ministry of Environment, Water and Climate and the Environmental Management Agency (EMA) to update stakeholders on the ratification of the Minamata convention and the implications to policymaking in Zimbabwe. In 2017 through 2019 Pact plans to implement activities to train more miners on the dangers of mercury, safe handling practices and alternative mercury

free processing methods and to develop an ASM Training Handbook that includes a section on mercury abatement.

- In 2016, UN Environment lead the development of a mutli-country, multi-agency GEF programme entitled Global Opportunities for the Long-term Development of the ASGM sector. The Programme, to be implemented in Burkina-Faso (UNIDO), Colombia, (UNDP), Guyana (CI), Indonesia (UNDP), Kenya (UNDP) Mongolia (UN Environment-UNIDO), Peru (UNDP) and the Philippines (UN Envrionment-UNIDO) and has 4 main components, the third one aiming at supporting the introduction of non-mercury alternatives for the miners in each country. UN Environment is implementing the Communication and Knowledge Management part of the programme which will document all the results of each projects on this issue.

### **Priority Action 3: Exploring innovative market-based approaches**

- Under the GEF programme entitled Global Opportunities for the Long-term Development (GOLD) of the ASGM sector, UNIDO initiated the designing of a project in Burkina Faso aiming at establishing a short and transparent value chain between artisanal miners and international gold buyers. A similar approach is being developed jointly with UN Environment for Mongolia and the Philippines.
- In 2016, UN Environment lead the development of a multi-country, multi-agency GEF programme entitled Global Opportunities for the Long-term Development of the ASGM sector. The Programme, to be implemented in Burkina-Faso (UNIDO), Colombia, (UNDP), Guyana (CI), Indonesia (UNDP), Kenya (UNDP) Mongolia (UN Environment-UNIDO), Peru (UNDP) and the Philippines (UN Envrionment-UNIDO) and has 4 main components, the second one concentrating on improving access to finance for the miners as well as access to international gold markets in each country. UN Environment is implementing the Communication and Knowledge Management part of the programme which will support the various projects and document the results on this issue.
- The NGO Resolve conducted extensive research on the strength and source of potential private sector interest in a public-private partnership that would work to reduce mercury use in ASGM under an intervention entitled “Feasibility Assessment and Facilitation of a Partnership to Reduce Mercury Use in Artisanal and Small-scale Gold Mining”. In addition, Resolve hosted a workshop with leading precious metals investors in New York City to learn more about obstacles to investing in ASGM. This workshop underscored the importance of business plans as a means to attract outside investment

## **2) Mercury cell chlor-alkali production**

- a) The United States of America and UNIDO are co-leads lead in this partnership area.
- b) The objectives of the partnership area are:

- Prevent the construction of new mercury-cell chlor-alkali production facilities
  - Reduce mercury emissions and use from existing mercury-cell facilities
  - Encourage conversion to non-mercury processes
  - Reduce or eliminate mercury releases from waste generated by chlor-alkali production facilities including waste from conversion to non-mercury processes
  - Promote environmentally-sound options for storage of surplus mercury to limit downstream releases from surplus mercury generated by the conversion, phase-out, or closure of mercury-cell chlor-alkali facilities.
- c) Key activities in this area include:
- The Partnership believes that the 50% reduction in mercury demand by 2015 has been achieved (see updated business plan).
  - The World Chlorine Council provided an updated inventory of C-A facilities, available [here](#) on the UNEP web site. This inventory has been used as basic input for two reports currently in development, the Global Mercury Assessment for 2018, and an update on global mercury supply, trade and demand.
  - UNIDO convened an experts' group meeting on June 28-29 at the UN offices in Vienna to identify the key components of an effective strategy to convert or decommission the remaining chlor-alkali facilities that still use mercury. Meeting participants included chlor-alkali industry representatives, technical service providers, intergovernmental organizations, and NGOs active in the sector. Participants provided valuable input regarding effective strategies and financing options for enabling the environmentally-responsible transition of these facilities in developing countries.
  - The C-A partnership held discussions with several different multilateral funding institutions, including European Reconstruction Development Bank, the European Investment Bank, and the Asian Development Bank. Additionally, the partnership area is in active discussions with the International Finance Corporation to identify potential candidates for further review.
  - C-A Partnership has opened dialogue with the Supply and Storage and Waste Partnership areas about possible joint approaches to addressing the management of mercury stocks from decommissioned or converted C-A facilities.
  - Association RusChlor participated in activities at Russian chlor-alkali facilities that led to mercury consumption and emission reductions, including lower mercury content in waste output. Activities included modernizing equipment, changing the production processes, and organizational changes and education campaigns by managers at these facilities.
- d) Planned future activities include:
- Closer cooperation of the C-A Partnership area with other PAs, in particular the Supply and Storage and Waste partnerships.

- Identifying and securing the options long-term investments needed to assist with conversion and decommissioning.
- Sharing information on options and potential approaches for permanent storage/disposal.
- Continued outreach to non-WCC member facilities.

### **3) Mercury air transport and fate research**

- a) The CNR- Institute of Atmospheric Pollution Research, Italy and the Biodiversity Research Institute, USA are co-leading this partnership area.
- b) The objectives of the partnership area are:
  - To support the implementation of the MC and support the development of a global monitoring system for measuring mercury levels in air, marine and terrestrial ecosystem in order to assess the effectiveness of measures as will be established by the COP;
  - To assist all parties involved including Nations to implement the necessary actions to fulfil the MC requirements and specific objectives;
  - To gather up to date information on mercury contamination worldwide and support capacity building activities to transfer knowledge on mercury monitoring and best practices to all parties involved;
  - To facilitate the dialog between the scientific community and policy makers and stakeholders.
- c) Key activities in this area include:
  - To support the preparation of the GMA 2018;
  - To facilitate the dialogue between F&T and on-going programs such as GEO Flagship on “Global Observation System for Mercury - GOS4M”;
  - To support Nations and individuals to improve monitoring capabilities in their own countries;
  - To promote continuous studies on mercury contamination in air and marine - with reference to this several ad-hoc field campaigns have been organized and carried out in different parts of the world;
  - To foster the cooperation with other organization involved in the MC implementation including, but not limited to, WHO;
  - In cooperate with WHO and UN Environment a pilot project has been carried out to develop SOPs and a monitoring plan for the GMP for mercury. Ad-hoc field campaigns have been (still are) carried out in different countries with PAS and active systems to monitor Hg levels in air. This activity is aimed to assess the impact of Hg

levels in air on human exposure of different population groups in selected (by WHO) contaminated sites;

- In cooperation with UN Environment and IPEN, a pilot project was conducted to measure the Hg levels in people (using hair) within multiple countries in Asia and elsewhere. The first round of such a global analyses of Hg in people (and fish) was completed and is now published (humans) and submitted for publication (fish);
- In cooperation with UN Environment's Scientific Technical Advisory Panel and the Society of Environmental Toxicology and Chemistry, a pilot project to develop a global biotic Hg database (called Global Biotic Mercury Synthesis) and generate interaction with communities of interest within the Minamata Convention was completed. Phase 2 planning is in process;
- Two meetings of the F&T Partnership happened: (1) a meeting coordinated by BRI at their offices in Portland, Maine, USA in October, 2016 with an emphasis to better understanding biomonitoring needs and approaches for COP1 and (2) a meeting at the ICMGP in Rhode Island, USA in July to take advantage of scientific interest and to add new members to the Partnership.

d) Planned future activities include:

- The overarching goal is to build the global observing system for mercury in cooperation with Nations and UN Environment and all parties involved. The cooperation with on-going programs such as the GOS4M Flagship of the GEO (Group on Earth Observation) will be a key milestone of the future activities since it would be instrumental to the future activities and achievement of goals set by UNEP F&T area. The overarching aim is to monitor Hg levels in air at rural/background and contaminated sites and marine systems, including biota samples.
- A second overarching goal is to develop a biomonitoring toolkit that can quantitatively assist countries in how, when, where and what to biomonitor within their countries, so capacity building and cost-effective approaches can be used in a standardized way around the world – possibly facilitating an understanding of spatio-temporal patterns at regional and even global levels (once country results can be summarized).

#### **4) Mercury-containing products**

a) The United States of America is acting as lead in this partnership area.

b) The objective of the partnership area is:

to phase out and eventually eliminate mercury in products and to eliminate releases during manufacturing and other industrial processes via environmentally sound production, transportation, storage, and disposal processes

c) Key activities in this area include:

- Supporting the Partnership meeting in Nairobi, Kenya – co-chaired by UN Environment and Zero Mercury Working Group
  - Exploring organizational modifications to enhance operations of the Partnership
- d) Planned future activities include:
- Coordinating with UNEP to develop alternatives and manufacturers of mercury-added products outreach
  - Compiling a list of projects and other publicly available resources on mercury-added products and alternatives
  - Sharing the progress of the U.S. mercury inventory and reporting rule

## **5) Mercury releases from coal combustion**

- a) Lesley Sloss of the International Energy Agency (IEA) Clean Coal Centre has been acting as lead in this partnership area and is now joined by Peter Nelson of Macquarie University, Australia to act as co-lead.
- b) The objective of this partnership area is:
- The continued minimization and elimination of mercury releases from coal combustion where possible. No numerical targets are established for this partnership area.
- c) Key activities in this area include:
- BAT/BEP Guidance document work:
- Members of the Mercury Control from Coal Combustion Partnership played a leading role in the development of the guidance material on optimum approaches to industrial emissions reductions and management for the Minamata Convention. The Conference of Plenipotentiaries on the Minamata Convention had established and mandated in 2013 a group of technical experts, nominated from each region, as a subsidiary body which reports to the intergovernmental negotiating committee on mercury, to develop the guidance called for in Article 8 of the Convention (UNEP(DTIE)/Hg/CONF/4, Resolution 1, paragraph 10).
  - The group met on four occasions: in February 2014 in Ottawa, Canada; in September 2014 in Montreux, Switzerland; in March 2015 in Pretoria, South Africa and in September 2015 in Stockholm, Sweden. The group forwarded the draft guidance it prepared to the seventh session of the intergovernmental negotiating committee (INC7) in March 2016.
  - A technical briefing on “Draft Guidance required under Article 8 on Emissions” was organized in advance of the formal proceedings of INC7 on the 9th of March. The co-leads of the specific chapters of the BAT/BEP guidance documents: Coal, non-ferrous metals, cement clinker production and waste incineration attended this meeting and provided input.

- The aim of the briefing was to provide an update on the preparations for and expectations of INC7 when it comes to the draft guidance developed by the group of technical experts on emissions. The technical briefing provided further information on the development of the guidance, and key issues addressed, and also featured opportunities for question-and-answer sessions with panel members to allow participants to seek clarification on the issues presented.
- The presentations at the briefing emphasized that the guidance was voluntary and specific to national circumstances. The highlights of the guidance for the coal sector were:
  - Mercury emission control technologies are generally similar for all coal-fired boilers.
  - Mercury emissions from coal-fired combustion plants are affected by a number of variables:
    - mercury concentration and speciation in coal
    - coal type and composition
    - type of combustion technology
    - control efficiency of existing pollution control systems
  - BAT/BEP
    - Primary measures to reduce the mercury content of coal
      - Coal washing, selection or blending (by itself this does not constitute BAT)
    - Measures to reduce mercury emissions during combustion
      - Use of a fluidized bed boiler (by itself this does not constitute BAT)
    - Mercury removal by co-benefit of conventional APCSS
      - Combination of SCR, ESP and FGD can remove mercury up to 95% and result a concentration of less than 1 µg/Nm<sup>3</sup> of mercury in the flue gas.
      - Combination of SCR, FF and FGD can remove mercury up to 99% and result a concentration of <0.5 µg/Nm<sup>3</sup> of mercury in the flue gas.
    - Dedicated mercury control technologies
      - Activated carbon injection technology has been adopted for coal-fired power plants in the United States.
      - The operations of activated carbon injection technology in the United States show that the mercury concentration in flue gas after activated carbon injection and fabric filters may be lower than 1 µg/Nm<sup>3</sup>.
    - BEPs
      - Improving the energy efficiency for whole plant
      - improving the efficiency of APCSS

- environmentally sound management of the plant
- environmentally sound management of coal combustion residues
- Major issues raised in public comment phase
  - Performance levels of BAT
  - Cross-media effects of control measures
  - Costs of the control measures
  - Emerging techniques
  - Mercury monitoring issues
- At INC7, the committee adopted on a provisional basis, pending formal adoption by the COP at its first meeting:
  - the draft guidance on best available techniques and best environmental practices;
  - Support for parties in implementing the measures set out in Article 8(5), in particular in determining goals and in setting emission limit values;
  - Criteria that parties may develop pursuant to Article 8(2)(b) on relevant sources; and
  - Preparing inventories of emissions
- It was re-iterated that the guidance is neither legally binding nor mandatory. It is also worth noting that, after adoption, India stressed that the guidance should address technical information related to high ash sub-bituminous Indian coal.

Other partnership work:

- Numerous documents produced by the IEA CCC relating to reducing emissions of mercury from the coal sector have been made available free of charge via the partnership website. Other papers, such as a document summarising the potential bridging between the Minamata and UNFCCC conventions, have also been completed and uploaded as free download documents from the website.
- Project documents have been published from activities in Russia, S Africa, China, and India.
- The Ministry of Environment and Natural Resources of Vietnam is preparing a final report on their SSFA (Small Scale Funding Agreement) project with UN Environment. The report will describe work completed to characterize coal-fired energy sector, including coal analyses, measurements of mercury concentration in flue gas from power plants, estimation of mercury emissions from the sector, and projections of mercury emissions in Vietnam in 2025. Publication of the final report is expected in June 2017.
- The SSFA with Thailand has been signed early in 2017. Collection of samples of coal used at power plants in Thailand has been completed. Samples are currently

undergoing comprehensive analysis. Sampling contractor has been identified and stack sampling at two coal-fired power plants is scheduled for June 2017. Draft report is expected in September 2017.

- The SSFA with Indonesia was also signed in early 2017. Samples have been collected at two plants and results are expected in October 2017.
- The annual MEC workshop was held in Mpumalanga, South Africa, in April 2017, along with a 1 day workshop on energy efficiency and emissions reduction. The meeting went exceptionally well, gaining many new partners and opening discussion for several potential demonstration projects. Reports from this meeting will be available on the partnership website by the end of the year, once approved by the US State Department, from whom the funding for the workshop was obtained. Technical expertise has been provided to the BAT/BEP production group and the final guidance document has been provisionally accepted by INC7 to be brought to COP1.
- The iPOG programme for mercury emission calculations has been updated with new data from South Africa and India, and now covers a wider range of high ash coals. It has also been updated to be compatible with newer windows operating systems.
- Papers have been presented in - Beijing, Chennai, Jeju, Mpumalanga, Krakow, Jakarta, Chongching, Paris, New Delhi, Jordan and Warsaw.

d) Planned future activities include:

- The interactive electronic decision tree Process Optimization Guidance (iPOG) and its manual could be updated to being supported on-line via the partnership website. This would allow direct access and avoid the requirement for the exe file to be downloaded by the user. This upgrade will require significant funding, which is currently being sought.
- Continue to provide expertise to BAT/BEP preparation group and to the COP negotiations
- The location and date of MEC14 have yet to be determined but the event is likely to take place in Eastern Europe around April/May 2017
- Proposed large scale demonstration projects in South Africa and Vietnam. Funding has been requested from the GEF

## **6) Mercury waste management**

- a) The Government of Japan is acting as lead in this partnership area and collaborates closely with the Basel Convention.
- b) The objective of the partnership area is:
 

to minimize and, where feasible, eliminate unintentional mercury releases to air, water, and land from waste containing mercury and mercury compounds by following a life cycle management approach.

- c) Key activities in this area include:
- Responding the request by the interim secretariat of the Minamata Convention, the Global Mercury Partnership has taken charge of the leading role of the informal efforts on mercury waste thresholds and requirements under Art.11, decided by INC7. The concept note was developed and Partners were invited to comment on the draft. Recommendations and thought starters has been drafted and circulated, which will be submitted to interim secretariat as a part of COP1 documents. A core group meeting, including the leads of waste management area, supply and storage area and products area, was held in November 2016 in Bangkok.
  - UNEP-IETC's project on ESM of mercury waste aims to assist participating countries and other countries, including Asian countries to accelerate the ratification of Minamata Convention with special emphasis to the mercury waste management pursuant to the provisions of Art.11 of the Convention. Regional workshop on ESM of mercury waste and regional study has been completed. "Global Mercury Waste Assessment" is now being drafted, and will be released at COP1.
- d) Planned future activities include:
- Study on the excess mercury management after the system conversion and/or shut-down of chlor-alkali industries.
  - Study on the management of the mercury-added medical device wastes (i.e. thermometers and sphygmomanometers) from medical institutions.
  - Technical input to the intersessional activity on mercury waste thresholds depending on the COP1 decision.

## **7) Mercury supply and storage**

- a) The governments of Spain and Uruguay are jointly leading the supply and storage partnership area.
- b) The objective of the mercury S&S partnership area is :
- Reduce or eliminate production and export of Hg from primary mining.
  - Determine mercury available from chlor-alkali, non-ferrous metal mining and oil/gas production.
  - Develop industry sector plans for the storage of Hg from chlor-alkali plants, non-ferrous metal processing, oil & gas production.
  - Assess and facilitate information an options and availability of technologies for storage or final disposal of excess mercury supply from other sources.
  - If the existing waste infrastructure is sufficient and if it could be used for the management of surplus mercury for the near term.
  - Assess and facilitate availability of options and technologies for the ESM of excess Hg supply, including its storage or final disposal.

c) Key activities in this area include:

- In October 2016, the mercury supply and storage experts meeting was held in the Ministry of Agriculture and Fisheries, Food and Environment. The meeting was led by the co-leaders of the area (Spain and Uruguay)
- Participation of the Supply and Storage S&S Area in the Project Meeting on Environmentally Sound management of Mercury Waste Bangkok, Thailand, November 2016.
- The Mercury Supply and Storage Partnership participated in the Chlor-Alkali Experts Group in Vienna (June 2016).
- Review of the results from the Uruguay's project on the application of mercury stabilization and solidification technologies (stabilization of chlor-alkali mercury waste). Stabilization/ solidification process performed in two centers in Spain: National Technological Center for Mercury (CTM) and Cement International Technologies (CIT). Two types of mercury waste were stabilized with excellent results regarding mercury concentration leached.
- Review of the UN Environment's update document to the Summary of Supply, Trade, and Demand Information on Mercury (June-July 2017).
- Invitation to participate in Committee meetings in the DEF Project: "Preparatory Project to Facilitate the Implementation of the Legally Binding Instrument on Mercury (Minamata Convention) in Argentina to Project Health and the Environment".

d) Planned future activities include:

Integration of the Mercury Supply and Storage Partnership area with other partnerships as storage is part of the waste life cycle or the supply for chlor-alkali plants and storage for waste coming from mercury products.

## **8) Mercury releases from cement industry**

a) The World Business Council for Sustainable Development (WBCSD), Cement Sustainability Initiative (CSI) is leading this partnership area.

b) The objective of this partnership area is:

to minimize mercury releases to the environment from cement manufacture. The partnership area aims to supplement existing programs in key, strategically selected ways to ensure that reductions are globally significant.

c) Key activities in this area include:

Guidance for reducing and controlling emissions of mercury compounds in the cement industry

- The CSI has finalized and released its mercury guideline which provides specific guidance in measuring and controlling mercury emissions from cement manufacturing. This guideline has been publicly released (<http://www.wbcsdcement.org/pdf/CSI%20Guidance%20for%20reducing%20and%20controlling%20emissions%20of%20mercury%20compounds%20in%20the%20cement%20industry.pdf>) and circulated with the CSI member companies and cement trade association around the world.
- There are now 2 guidelines regarding cement industry, one from UNEP and one from CSI; both are complementary, the UNEP one more general (addressed to UN member states and decision makers), the CSI one more technical (addressed to industry).
- This partnership will continue promoting the CSI guidance in the cement sector.

#### Need for additional and more reliable mercury data

- UN Environment and the CSI are collaborating in the field of the Global Mercury Inventory. Efforts concentrate around measurement methodology and improved data to allow a better understanding of worldwide mercury emissions.
- CSI participated with an expert in a workshop on the Global Mercury Inventory in November 2016 in Copenhagen. The objective from UN Environment for this workshop was to present their preliminary calculations for the Global Mercury Inventory based on data from 2014 and 2015. Based on this, discussion with national and industry representatives took place about which kind of support could be achieved from governments and industry side. The scope consisted mainly of two work packages:
  - the Point Sources Data Base and
  - the Global Mercury Inventory.
- UN Environment has developed a database for point sources of all relevant mercury emitting industries. For the cement industry, the main source of information was the cement database which is available in the internet. Currently it contains about 1,800 cement plants worldwide. The objective of this Point Sources Data Base is to allow a modeling of mercury hotspots, which shall serve as a basis for atmospheric distribution modeling in the future.
- The data situation regarding emissions from the cement industry (as well as from other sectors) is rather poor. While sufficient information is available from Europe and North America, less information is available e.g. for many African and Asian countries.
- For countries with limited information regarding emission data, UN Environment works with the cement capacity (often mentioned in the CemNet database) multiplied with an emission factor per ton of cement. Huge uncertainties derive from the facts that:

- the cement database is not always up-to-date;
  - cement capacity is used instead of production; and
  - the default emission values used by UN Environment are high compared to information, which is not publically available.
- Obviously, confidentiality constraints have been discussed so UN Environment is well aware of these constraints. Emissions control information is used for adapting the emission factor for unabated mercury with certain factors which depend on the technologies (e.g. ESP, bag filters, DeNO<sub>x</sub>, DeSO<sub>x</sub>, etc.).
  - In the Global Mercury Inventory, the emissions of countries are calculated based on cement production, unabated emission factors for limestone and different fuels as well as adaptations of these emission factors based on emission control technologies which are implemented in the countries. For the level of implementation, certain percentage distributions are used; for countries without information default distributions are applied. This means that for countries with limited information (like most countries in the developing world as well as China and India), more or less default values are used for the calculation.
  - The CSI expert provided detailed information about the German cement industry. Based on this, the Inventory was adapted which led to significantly lower emissions than before. Similar situations are likely to apply to other countries however the calculation could only be improved with more detailed (partly confidential) information from the cement industry. There is risk that henceforth, mercury emissions from cement industry get over-estimated due to the use of assumptions rather than industry data that will contribute to more reliable estimations.
  - The project plan for a CSI mercury emission database has been further elaborated; however short-term progress in the implementation of this project will be limited due to budget restrictions.

#### Meeting on the Cement Industry Partnership (CIP)

- Early November 2016, delegates of UN Environment met with delegates of the CSI, Cembureau and VDZ. The purpose of the meeting was mutual update of activities and developments (mentioned above).
- Participants also shared ideas for further collaboration (e.g. work on aspects related to the implementation of the Minamata Convention, side-event at the COP 1).

#### d) Planned future activities include:

- Potentially to organize a side-event at the COP 1 of the Minamata Convention in Geneva, possibly on 29 September.
  - Carry internal reflection amongst CSI members to explore how the cement sector can support the Global Mercury Inventory with industry data that will contribute to more reliable estimations.
-