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Item 6 of the provisional agenda\*  
**Programme of work and budget**

## **Report on activities undertaken within the United Nations Environment Programme Global Mercury Partnership**

### **Note by the secretariat**

The annex to the present note sets out a report on activities undertaken within the United Nations Environment Programme Global Mercury Partnership. The report has been drafted by the Chemicals and Health Branch of the United Nations Environment Programme, reflecting input received from partnership areas since the eighth meeting of the Partnership Advisory Group, held in September 2017, and will be submitted for consideration at its ninth meeting, to be held in November 2018. The report is presented as received, without formal editing.

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\* UNEP/MC/COP.2/1.

## Annex

# Report on activities undertaken within the United Nations Environment Programme Global Mercury Partnership (July 2017–August 2018)

## 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: 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 July 2017 to August 2018, 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 18 November 2018, there were 182 official partners in the Global Mercury Partnership, including 32 governments, 9 intergovernmental organizations, 67 non-government organizations and 74 others.
- Some of the partners are global industry partners that collaborate with 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 (US EPA) is serving as chair of the Partnership Advisory Group. Individual partnership areas are led by the following organisations.

- Artisanal and small scale gold mining: The Natural Resources Defence Council (NRDC), UN Environment 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 Consiglio Nazionale delle Ricerche<sup>1</sup> (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

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<sup>1</sup> (National Research Council)

## Delivery

The activities of the Partnership were delivered in the form of the following:

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

Detailed activity reports from individual partnership areas are provided in the next section.

## Future work

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

### III. Activity Report by Partnership Area

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

- a) The Natural Resources Defence Council (NRDC), UN Environment, and the United Nations Industrial Development Organization (UNIDO) are jointly leading the artisanal and small-scale gold mining (ASGM) partnership area.
- b) The objectives of the partnership area are to:
  - Support governments in setting national objectives/targets
  - Eliminate worst practices and promote alternatives
  - Explore innovative market-based approaches
- c) Key activities in this area.

The partnership area chose to report on key activities by partner. Below are the activities undertaken by each partner:

- Artisanal Gold Council (AGC)

During the reporting period, AGC further implemented the following projects in order to eliminate worst practices and support market-based approaches:

- Sustainable Development of Artisanal and Small-Scale Gold Mining in Indonesia with funding from Global Affairs Canada;
- Developing Training Materials to Promote the Reduction of Mercury use in ASGM in Peru, Indonesia, Philippines and Papua New Guinea with funding from APEC<sup>2</sup>;
- Strengthening of responsible practices in economic, social and environmental development in ASGM in Guinea with funding from GIZ<sup>3</sup>; and,
- Reducing the Supply of Mercury available for use in the Andean ASGM sector in Peru with funding from the US Department of State.

In parallel, in projects funded by the Global Environment Facility (GEF) and implemented by UN Environment or UNIDO, AGC supported the governments of Mali, Senegal, Gabon, Peru, Laos and Ecuador in producing National Action Plans for ASGM, as part of their compliance with the Minamata Convention. Together with the UN Environment mercury programme, AGC also developed a Toolkit on Baseline Estimates of Mercury Use in ASGM and conducted training in the Democratic Republic of the Congo, Mozambique, Indonesia, Mongolia and Ecuador.

<sup>2</sup> Asia-Pacific Economic Cooperation

<sup>3</sup> Deutsche Gesellschaft für Internationale Zusammenarbeit (German Association for International Cooperation)

AGC is now beginning work on Increased Transparency and Control of Mercury in Peru and Abating Mercury Emissions via Mobile Processing Units for Small-Scale Gold Processing in Suriname, both funded by the US Department of State.

- Biodiversity Research Institute (BRI) and BaliFokus  
BRI and Balifokus will launch a project entitled “Reducing mercury use and releases in Indonesia’s ASGM sector: Restrict Supplies and Secure Storage of Mercury” funded by the US Department of State. The goal of this project is to reduce the supply and availability of mercury in Indonesia by assisting the Indonesian government to (a) amend the draft of the National Implementation Plan to phase-out and eliminate mercury by restricting mercury supplies especially for the ASGM sector and (b) secure the storage of confiscated mercury, by-products and recovered mercury from wastes at the local level. By restricting the supply of mercury, and improving and enforcing the regulations, Indonesia’s ASGM sector will be incentivized to adopt cleaner processing methods, thereby reducing mercury emissions and releases and lessening both human health and environmental impacts.
- Canadian Artisanal Mining Innovation (CAMI) research group of the University of British Columbia  
Under the reporting period, CAMI further implemented or started the following ASGM projects:
  - Assessing Ecuador’s Gold Supply Chain with funding from CIRD<sup>4</sup>, UNIDO, and the Ecuadorian Central Bank;
  - Perceptions of Small and Large Scale Mining in Tambogrande, Piura, Peru;
  - Introducing Mercury-free Techniques in Artisanal Gold Mining;
  - Environmental and Social Issues of the Artisanal Gold Mining in Arequipa;
  - Assessment of the Projects in Colombia;
  - Assessment of the Processing Plants of the Formalized Artisanal Miners in Colombia and Training of 600 Miners;
  - Assessment of the Toxicity of Mercury-cyanide Complexes;
  - Implementation of Mercury-free Methods for Female Artisanal Miners in Colombia;
  - Extraction of Mercury from Cyanide Solution in Brazil; and
  - Study of Alternative Lixiviants of Gold Using Cyanogenic Plants in Brazil, Colombia and Peru.
- Centre for Brazil Mineral Technology (CETEM) and its Mercury Lab (LEMA)  
The centre completed the Mercury Initial Assessment for ASGM, in Brazil. Two drafts and the final report were presented. Data on mercury use, mercury recovered by environmental controls (efficiency), and estimates of legal and illegal national gold production by ASGM were integrated in order to estimate total mercury emissions and releases. Further, mercury levels in the atmosphere were measured during the amalgamation and subsequent burning processes (with and without environmental controls). In addition, a hands-on training requested by colleagues from the Mozambique Minister of Mineral Resources and Energy was delivered.
- International Commission on Occupational Health (ICOHs) and the Scientific Committee MinOSH (Mining Occupational Safety and Health) participated in several conferences:
  - Health and Safety in Mining in Odense, Denmark in August 2017. This conference included participation of miners, who demonstrated the mercury free gravity-borax method for gold extraction. The 3-day conference was followed by a 1½ day training on occupational safety and health in mining together with The Nordic Institute for Advanced training in occupational health (NIVA);

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<sup>4</sup> Canadian International Resources and Development Institute

- In May 2018, during the 32nd ICOH International Conference in Dublin, MinOSH arranged special sessions and oral presentations on occupational safety and health in mining, among them one on ASGM, mercury poisonings and mercury-free mining; and
- In June 2018, during the World Mining Congress in Kazakhstan, MinOSH participated on an International Social Security Association (ISSA) arranged special session on occupational safety and health in mining with a presentation that included the issue of mercury-free gold mining.

In addition, MinOSH published 3 papers on occupational safety and health in mining in the journal Occupational Health Southern Africa. Through the Danish Society of Occupational Medicine, MinOSH has been supporting a Danish project on mercury-free ASGM in Uganda, Mozambique and the Philippines. For the coming year attendance in several conferences is planned; one conference will be arranged by MinOSH in Indonesia and one together with ISSA Mining in South Africa. Finally, a project on mercury-free mining is being elaborated for Bolivia.

- Levin Sources

During the reporting period Levin Sources supported the government in setting national objectives/targets through the following projects:

- Forest Smart Mining: Identifying Good and Bad Practices of Artisanal and Small-scale Mining (ASM) in Forest Landscapes with funding from the World Bank;
- Sharing expertise on best practices to address ASM impacts on biodiversity at the Convention of Biological Diversity (CBD);
- Development of Kenya's Artisanal Mining Strategy with funding from DFID<sup>5</sup>;
- Diagnostic of the Gold and Diamond Artisanal and Small-scale Mining Sector in Guinea with funding from the World Bank; and
- Artisanal Gold Mining in the Garamba Complex and Development of an Action Plan in the Democratic Republic of the Congo with funding from Fonds Européen de Développement.

In parallel, in order to eliminate the worse practices and promote alternatives, Levin Sources worked on Remediating Metal Mine Contaminated Water Bodies in Asia with funding from Durham University, UK. Finally, under its priority action on exploring innovative market-based approaches, the following projects were implemented:

- Feasibility for the Establishment of a new National Gold Refinery in Madagascar with funding from the World Bank; and
- Scoping Study on the Artisanal Gold Sector in Niger to assist project preparation with funding from the World Bank.

- National Action Plan on ASGM in Madagascar

During the reporting period, the Ministry of Environment in Madagascar finalized and validated its project on the National Action Plan for ASGM. As part of the project, an overview of the AGSM sector in the country was completed. In parallel, awareness raising workshops were organized targeting government officials as well as the general public. A training workshop for local experts was also conducted and focused on eliminating mercury use in ASGM in Madagascar. The National Action Plan is under finalization and should be then rapidly validated by the government.

- Pan American Health Organization (PAHO)

The second edition of PAHO's virtual course on "The implication of mercury on human health and environment in the context of the Minamata Convention" was implemented during June-August 2018, for Spanish speaking countries in Latin America. The course is composed of six modules, including ASGM. Regional experts, especially those involved in different Minamata projects are invited to present WebEx sessions. Following 80 hours of work, 32 students completed the course. The participants are

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<sup>5</sup> Department for International Development UK

mostly working in government, especially health and environment, and there are also students from academic institutions, with a background in health and environment areas of knowledge.

- RWTH<sup>6</sup> Aachen University, Germany

Active since some years in Sudan, Aachen University reported an apparent higher mercury use in artisanal gold extraction. Through field survey and site assessment, the university estimated that ASGM gold production is about 60t/year, most of it being produced by whole ore amalgamation in Chinese roller mills. About 5000 mills are assumed to be under operation in Sudan. Further complicating the situation, most tailings are then leached by cyanide plants, generating dissolved and mobile mercury-cyanide. More recently, gold production decreased as a consequence of a shortage of mercury supply, potentially indicating the first positive effects of the entry into force of the Minamata Convention.

- Sustainable Alluvial Mining Services (SAMS): Esa'ala ASGM Pilot Project (Papua New Guinea)

The Sustainable Alluvial Mining Services (SAMS), a non-profit organization, recently launched a project to achieve sustainable rural development driven by revenue generated from a responsible artisanal small-scale mining industry in Esa'ala District and Milne Bay Province, Papua New Guinea. The project is funded by the local District Authority and implemented by a team of young mining professional volunteers. The SAMS also raise funds through fundraising and training programmes to support this project. The initial phase on Planning and Mobilization is almost completed; the second project phase will start after October 2018. One of the project milestones was co-facilitating the Asia-Pacific Economic Cooperation-funded Workshop on Business Training for ASG Miners together with the Artisanal Gold Council. The project also collaborates with the GEF-Papua New Guinea country office to roll out training and awareness programmes on Mercury Safe Uses in ASGM at country level.

- UN Environment

During the reporting period, UN Environment continued supporting the development of previously approved GEF-funded National Action Plan projects in Burundi, the Central African Republic, the Republic of the Congo, the Democratic Republic of the Congo, Eritrea, Guinea, Honduras, Indonesia, Kenya, Laos, Madagascar, Mali, Mongolia, Myanmar, Niger, Paraguay, Senegal, Sierra Leone, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe and received approval for the project in Kyrgyzstan. As part of the National Action Plan implementation, UN Environment is providing regular support to the countries together with key partners and is developing key tools such as the baseline estimate methodology with AGC (see above) and the ASGM formalization handbook with UNITAR(see below). UN Environment organized a regional meeting of National Action Plan projects in Asia in Indonesia in November 2017. The workshop promoted exchanges between countries facing similar situations.

As the lead agency of the GEF GOLD programme, UN Environment developed and received approval for the 2 projects under its implementation within the Programme: The Global Project executed by the co-lead of this partnership area and the Mongolia-Philippines project, co-implemented with UNIDO.

- United Nations Industrial Development Organization (UNIDO)

During the reporting period, UNIDO further supported the implementation of the GEF-funded

- Vinyl Chloride Monomer project in China;
- Mercury waste management project in Tunisia; and
- National Action Plan projects in Burkina Faso, Ecuador, Gabon, Ghana, Mozambique, Nigeria and Peru.

UNIDO also assisted the following 23 countries in the implementation of their GEF-funded mercury initial assessment projects: Armenia, Benin, Burkina Faso, Cabo

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<sup>6</sup> Rheinisch-Westfälische Technische Hochschule

Verde, Chad, China, Colombia, Comoros, Guatemala, Guinea, Mali, Mongolia, Nepal, Niger, Nigeria, Sao Tome and Principe, Senegal, Sri Lanka, Sudan, Togo, Turkey, Vietnam and Yemen. Furthermore, with the support of Switzerland, UNIDO continued the implementation of a global programme on promoting ratification and early implementation of the Minamata Convention. The programme assisted eight countries (Armenia, Bangladesh, Costa Rica, Guatemala, Malawi, Philippines, Tunisia and Vietnam) and two sub-regions (Caribbean and ECOWAS) through awareness-rising on the ratification dossier, domestication of international chemicals waste management conventions, and sustainable management of mercury-containing products and wastes.

Under the GEF GOLD programme, UNIDO, jointly with UN Environment finalized the developments of the GEF GOLD Mongolia-Philippines and GEF GOLD Burkina Faso projects. UNIDO will also execute part of the GEF GOLD Global project.

- United Nations Institute for Training and Research (UNITAR)

With financial support from the GEF and in collaboration with UN Environment, UNITAR has continued to support a number of countries (the Democratic Republic of the Congo, Eritrea and Sierra Leone) in developing National Action Plans. This includes face-to-face and online trainings, support in undertaking field studies and desk studies in the sector, and the provision of ongoing day-to-day support.

In addition, UNITAR has developed a number of tools that support the development and implementation of National Action Plans, and has conducted trainings on these tools. Specifically, UNITAR and the UN Environment Global Mercury Partnership have drafted a 'Handbook for Developing National ASGM Formalization Strategies within National Action Plans'. This was supported by a group of international experts on ASGM formalization, specifically formed for the development of the handbook. Moreover, UNITAR has developed a 'Socio-economic ASGM Research Methodology' for investigating key socio-economic aspects as part of the national ASGM overview that is produced under the National Action Plans. Finally, with financial support from the Global Mercury Partnership, UNITAR has developed an electronic data collection application (KoBoCollect) to facilitate understanding of the local ASGM sector. The tool helps: to combine location data with basic site-specific information to build a map; to contextualize and manage the pictures taken at the mining site; and to manage data collection off-site and share progress with key stakeholders.

- Zero Mercury Working Group (ZMWG)

The European Environment Bureau, with its Zero Mercury Working Group (ZMWG) partner organizations, completed the implementation of 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." The project assisted the governments of Tanzania and Ghana with the development of ASGM National Action Plans, including collecting baseline data on the sector and facilitating consultations with mining communities. The project created background documents on the profile of the ASGM sector, as well as a series of short briefing papers, that are now accessible to decision makers, on key issues under the National Action Plan. The project also provided training for non-governmental organization partners on Baseline Mercury Inventories by international mining experts, contributing to local non-governmental organization capacity building. The project concluded with a workshop in Nairobi, with more than 23 African countries attending. Emphasis was given on the importance of consulting miners as part of the National Action Plan process, and the ZMWG guide was presented.

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

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

- The chlor-alkali partnership continued interviews with several development banks and agencies, including the following: European Investment Bank, European Bank for Reconstruction and Development, Asian Development Bank, International Finance Corporation, U.S. EXIM Bank, U.S. Trade and Development Agency and U.S. Department of Commerce.
- Partnership members have carried out reviews of ongoing and potential conversion projects in Mexico, Morocco, Peru, Tunisia and Uruguay.
- The chlor-alkali partnership area, led by USEPA and the waste management partnership area, led by the Ministry of the Environment of Japan (MOEJ) carried out a joint mission to Uruguay to identify the needs and challenges faced by a chlor-alkali producer and the Uruguayan government, both for financing of the conversion process and for addressing the management and disposal of mercury wastes.

d) Planned future activities include:

- Continuing to collect more information from countries on ongoing and potential conversion projects;
- Providing technology advice for potential conversions;
- Facilitating the acquisition of financing for promising potential conversion projects; and
- Increased focus on addressing stocks management and disposal for converted facilities.

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

a) The CNR- Institute of Atmospheric Pollution Research (CNR-IIA), Italy and the Biodiversity Research Institute (BRI), USA are co-leading this partnership area.

b) The objectives of the partnership area are to:

- support the implementation of the Minamata Convention and support the development of a global monitoring system for measuring mercury levels in air, marine and terrestrial ecosystems in order to assess the effectiveness of measures as will be established by the Conference of the Parties (COP) to the Minamata Convention;
- assist all parties involved including countries to implement the necessary actions to fulfil the Minamata Convention requirements and specific objectives;
- 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; and
- facilitate the dialogue between the scientific community and policy makers and stakeholders.

c) Key activities in this area include:

- To support the preparation of the Global Mercury Assessment (GMA) 2018;

During the period 2017-2018, as requested by the UN Environment Assembly (Decision 27/12: Chemicals and waste management, 2013), UN Environment has developed, in collaboration with many scientists, an update of the Global Mercury Assessment (GMA) 2013 to be finalized by the end of 2018.

The work includes two reports:

- A Technical Background Report, (prepared in cooperation with the Arctic Monitoring and Assessment Programme (AMAP), and a
- A Summary report for policy makers (the UN Environment's GMA report to the UN Environment Assembly).

Within the Technical Background Report, that is a fully referenced scientific report, CNR-IIA, in close cooperation with many international scientists, has lead chapter 4 'Levels of mercury in air' in the Technical Background Report (chapter 4 reports the list of all contributing experts and institutions). The aim of the chapter was to provide an up-to-date overview of mercury levels in air (since GMA 2013). In particular, the chapter provides an overview of atmospheric mercury measurements and regional/worldwide spatial and temporal trends with a focus on measurements currently collected in regional monitoring networks around the world.

BRI has generated a new chapter (chapter 7) for the GMA – 2018 on “Mercury Concentrations in Biota”. The chapter was based on BRI’s Global Mercury Synthesis (GBMS) database and describes the spatial gradients and temporal trends of mercury exposure and effects in fish and wildlife for around the world.

- To facilitate the dialogue between the Mercury Air Transport and Fate Research Partnership Area (F&T) and on-going programmes such as the Group on Earth Observation (GEO) Flagship on “Global Observation System for Mercury - GOS4M”;
- To support countries and individuals to improve monitoring capabilities in their own countries;
- To promote continuous studies on mercury contamination in air and marine systems - with reference to this several ad-hoc field campaigns have been organized and carried out in different parts of the world;
  - In this framework, ERA-PLANET “the European Network for Observing our Changing Planet” programme has been developed and is under implementation.
  - ERA-PLANET is an ERA-NET Co-fund action under the EU Horizon 2020 Framework Programme (Grant Agreement number 689443), which aims to strengthen the coordination of European research programmes in the field of Earth Observation (EO), within the Group on Earth Observations<sup>7</sup> and the European Earth observation Copernicus programme<sup>8</sup>.
  - Within this programme, the projects iGOSP ‘Integrated Global Observing Systems for Persistent Pollutants’<sup>9</sup> and iCUPE (Integrative and Comprehensive Understanding on Polar Environments)<sup>10</sup> have been developed and are under implementation. iGOSP aims to develop a new paradigm for real-time monitoring of the quality of our environment with reference to the contamination of air, water and terrestrial ecosystems by persistent pollutants. The overarching objective of this project is the development of a fully integrated system of advanced sensors (based on nano-structured advanced materials) for major persistent pollutants coupled with state-of-the-art interoperable systems for data sharing and data management. iGOSP aims to better understand the dynamic processes of mercury and other persistent pollutants in the polar environments and to assess the fate of these contaminants between different environmental compartments.
- To foster the cooperation with other organizations involved in the Minamata Convention implementation including, but not limited to, WHO;
  - In cooperation with WHO and UN Environment a pilot project funded by GEF (Development of a plan for global monitoring of human exposure to and environmental concentration of mercury) has been carried out to develop standard operating procedures and a monitoring plan for the Global Mercury Partnership for mercury. Ad-hoc field campaigns have been, and still are carried out in different countries with passive air samplers and active systems to monitor mercury levels in air. This activity is aimed to assess the impact of mercury levels in air on human exposure of different population groups in WHO-selected contaminated sites. This project aims, specifically, to provide key elements towards harmonized approaches for developing a global mercury monitoring

<sup>7</sup> GEO, [www.earthobservations.org](http://www.earthobservations.org)

<sup>8</sup> [www.copernicus.eu](http://www.copernicus.eu)

<sup>9</sup> [www.igosp.eu](http://www.igosp.eu)

<sup>10</sup> [www.atm.helsinki.fi/icupe](http://www.atm.helsinki.fi/icupe)

plan, and to strengthen the capacity for mercury analyses in humans and in the environment.

- In cooperation with UN Environment, a pilot project was conducted by IPEN and BRI to measure mercury levels in humans (using hair) in multiple countries in Asia and elsewhere. The first round of such global analyses of mercury in humans and fish was completed and is now, respectively, published (humans) and submitted for publication (fish). In partnership with IPEN, BRI is conducting an awareness-raising effort on mercury exposure in humans (based on hair samples) in 15-20 small island developing States with an emphasis in the Caribbean Region in close collaboration with the Basel Convention Regional Centre – Caribbean.
- In partnership with ZMWG, BRI is conducting an awareness-raising effort of mercury in cosmetics for participating countries from around the world with an emphasis in the Caribbean Region in close collaboration with the Basel Convention Regional Centre-Caribbean.
- 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 mercury database (called Global Biotic Mercury Synthesis) and generate interaction with communities of interest within the Minamata Convention was completed. Phase 2 planning is in progress.
- Multiple communication pieces were generated to assist Minamata Convention delegates better understand mercury in the environment and in the products that we use. Those pieces were displayed at COP1 and will again be distributed, along with new information, for COP2.
- BRI provided syntheses of the Minamata Inventory Assessment mercury inventories to the Global Mercury Assessment process and presented them at various forums to increase understanding of patterns and trends of mercury in developing countries.
- BRI is conducting Minamata Initial Assessments for over 35 countries;
- As a partner with the Basel Convention Regional Centre – Caribbean, BRI is proposing to initiate the Caribbean Region Mercury Monitoring Network.
- Two meetings of the F&T Partnership took place: (1) Global Observation System for Mercury partnership has had its first workshop back-to-back with the GEO-XIV Plenary. The workshop was held at USEPA, Washington DC on 20 October 2017 and aimed to build the GOS4M Governance; (2) The project workshop, organized by CNR-IIA in close collaboration with the Chemicals and Health Branch of UN Environment and the WHO Regional Office for Europe – European Centre for Environment and Health (WHO-ECEH), for the discussion of the results and lessons learned of the pilot study of the Global Plan for monitoring mercury, within the GEF project “Development of a Plan for Global Monitoring of Human Exposure to and Environmental Concentration of Mercury”. The workshop was held on 13-14 February 2018 at CNR – Montelibretti research Area (Rome, Italy). BRI participated in the CNR-WHO workshop on mercury in the global environment and provided information about biotic mercury exposure.

d) Planned future activities include:

- The overarching goal is to build the global observing system for mercury in cooperation with countries and UN Environment and all parties involved. The cooperation with on-going programs such as the GOS4M Flagship of the GEO will be a key milestone of the future activities since it would be instrumental to the future activities and achievement of goals set by the UN Environment F&T area. The overarching aim is to monitor mercury levels in air at rural/background and contaminated sites and marine systems, including biota samples.
- In order to facilitate the cooperation between GEO and UN Environment and the Minamata Convention Secretariat, the F&T co-chair is working closely with both institutions to draft a Letter of Agreement that would allow to all parties involved to support its part’s missions and short-medium term goals. Details on this Letter of Agreement will be provided as soon as the process will be completed.

- A second overarching goal is to develop a biomonitoring toolkit that can quantitatively assist countries in how, when, where and what to bio-monitor 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 US 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:
  - Survey on Harmonized System Initiative of the UNEP Global Mercury Partnership: Initiated a survey of COP1 attendees regarding country-level interest in developing extended and globally-coordinated commodity codes under the Harmonized Commodity Description and Coding System (Harmonized System or HS) of the World Customs Organization;
    - The overarching goal of this initiative, if implemented, is to help to facilitate the phase out of the mercury-added products listed in Part 1 of Annex A of the Convention by 2020.
    - In addition, enhancing data generated by the Harmonized System could allow for the collection of information which can distinguish between mercury-added and non-mercury added products, would facilitate implementation of Article 4 of the Convention, ease and improve overall reporting, and foster better communication among trading partners.
    - A brief, online (Google Docs) survey was sent to representatives of governments that attended COP1 by the Minamata Secretariat on behalf of the UNEP Global Mercury Partnership – Products Partnership.
    - To date, 40 countries responded with 39 countries supporting the effort. Work is still underway on this project with the hopes of encouraging more countries to complete the survey.
  - Contributing to the Preparation/Implementation of the Minamata Convention – Developing Strategies to Implement Product Phase-out Provisions (European Environment Bureau (EEB) and ZMWG partner organizations): Completed the implementation of a multi-year project (July 2014-December 2017) to engage with governments and relevant stakeholders through Project Advisory Committees to developing and implementing product phase-out strategies;
    - The ZMWG checklist and guide, was developed, including steps governments can follow to create a phase-out roadmap.
    - Two pilot countries (Nigeria and Mauritius) used the guide to draft national roadmaps, in addition to implementing the following elements: (1) a study looking at the transition of the national market towards Convention compliant products; (2) a legal gap analysis vis-à-vis Article 4 requirements; and (3) draft laws to meet Article 4 requirements.
    - As a concluding stage to the project, a two-day conference, followed by an awareness raising and knowledge sharing meeting, were held in Nairobi in cooperation with the UN Environment Global Mercury Product Partnership.
    - Twenty-nine African countries and Jamaica attended in order to share experiences in phasing out mercury-added products. Lessons learned from these experiences were shared through case study examples, and gave the opportunity to governments to develop their own draft country roadmap on the basis of the ZMWG checklist and guide.
    - In addition, more than ten Caribbean islands have used the checklist and guide to develop their first draft roadmaps to phase-out mercury added products.

- Overall, the project contributed to raising awareness about Minamata Convention obligations among various stakeholders, government agencies, and officials, as well as non-governmental organizations, traders, and other relevant parties (\*Mauritius and Nigeria have now ratified the Convention).
- In parallel, non-governmental organizations in Bangladesh, Côte d’Ivoire, India, Kenya and the Philippines are being supported by EEB/ZMWG to carry out projects to assist their countries to phase-out mercury-added products via the outcomes of the above-mentioned project.

d) Planned future activities include:

- Continue to support efforts related to the Survey on Harmonized System Initiative of the UNEP Global Mercury Partnership (e.g., coordinating meetings and assisting in sharing materials);
- (Ongoing) Exploring organizational modifications to enhance operations of the Partnership;
- (Ongoing) Coordinating with UNEP to develop alternatives and manufacturers of mercury-added products outreach;
- (Ongoing) Compiling a list of projects and other publicly available resources on mercury-added products and alternatives; and
- (Ongoing) Sharing the progress of the US mercury inventory and reporting rule.

**5) Mercury releases from coal combustion**

a) The International Energy Agency Clean Coal Centre has been acting as lead in this partnership area and is now joined by 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:

- UN Environment project:  
The UN Environment project on mercury inventories and reduction potential in Indonesia, Thailand and Vietnam has been completed with final reports being presented to government, utilities and academia in Thailand and Indonesia in November 2017. The final reports from each project included recommendations to utilities on how best to reduce emissions, but also recommendations to government and regulators on potential options for promoting or requiring mercury reduction at large-scale facilities. These have been uploaded to the Coal Partnership website.
- Mercury and Multi-pollutant emissions from Coal (MEC) and annual Coal Partnership meeting:  
The annual MEC (Mercury and Multi-pollutant emissions from Coal) Workshop was held in Krakow, Poland on 21-23rd May 2018. One morning of the event was dedicated to the annual meeting of the Coal Partnership. Updates were given by partners along with requests that the partnership work towards sharing more information on potential project work under the Minamata Convention in the future.
- Other outreach:  
Meetings were held in Kazakhstan with United Nations Developing Programme colleagues who are working on the Kazakhstan mercury inventory, including discussions on potential future project work.  
  
Meetings were held with delegations from Vietnam and Indonesia to discuss potential future coal-fired plant projects in support of their Minamata Convention implementation efforts at the U.S. Trade and Development Agency Coal-Fired Power Emissions Control Technologies Reverse Trade Mission, Pittsburgh, Pennsylvania, May 18, 2018.  
  
Meetings were also held with delegations from South Africa, Romania, and Turkey to discuss potential future coal-fired plant projects in support of their mercury emission reduction strategies at the U.S. Trade and Development Agency Coal-Fired Power

Emissions Control Technologies Reverse Trade Mission, Kansas City, Missouri, April 16, 2018.

- Presentations on behalf of the partnership at international meetings:
  - “Activities in South East Asia supporting Implementation of Minamata Convention on Mercury”, 2018 MEGA Symposium, Baltimore, Maryland, August 20-23, 2018.
  - “South East Asia Implementation Efforts for Minamata Convention on Mercury”, A&WMA’s 111th Annual Conference and Exhibition, Hartford, Connecticut, June 25-28, 2018.

- Partner activities:

Individual coal partnership partners are keen to share their expertise through the partnership to Minamata parties (see below). These include work by SBB in Poland, installing mercury control at Patnow Power Station II and Belchatow Power Station (the world’s largest lignite-fired power station). Italian partners are involved in the Spanish Ministry of Economy and Competitive project on mercury removal in oxyfuel combustion. There are similar projects happening with many partners and it would be nice if these could be listed on the partnership website to foster collaboration.

d) Planned future activities include:

- The Coal Partnership has also been in discussions with UN Environment and GEF about a large GEF supported programme of work to support implementation of the Convention in the context of industrial emissions of mercury. The structure of the programme would encompass the sources listed in Annex D and covered in Article 8 (Emissions) of the Convention.
- This Annex includes point sources of emissions of mercury and mercury compounds to the atmosphere from the following categories: coal-fired power plants; coal-fired industrial boilers; smelting and roasting processes used in the production of non-ferrous metals (refers to lead, zinc, copper and industrial gold; waste incineration facilities; and cement clinker production facilities.
- In the framework of GEF this activity would be organised as a programme, similar to the GEF-GOLD programme. A proposal to the GEF consisting of 1 programme framework document (20-30 pages) and suite of child projects (2-4 pages each) is in preparation. Child projects are: a coal component; non-ferrous metals smelting component; cement component (probably implemented by UNIDO); and possibly a waste component (not confirmed yet).
- GEF programmes require significant co-financing which needs to be estimated at the submission stage (due in the first quarter of 2019) in addition to endorsement letters from countries identified to be engaged in the work programme. These countries are required to be signatories to the Convention with significant actual or potential industrial emissions from these sectors.

**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:

- Holding a partnership area meeting:

The Waste Management Area (WMA) held a core-member meeting on 10th September 2018 in Vienna, Austria. The objective of the meeting was as follows.

- To review and evaluate each activity implemented under the WMA and identify achievements and challenges.

- To discuss the way forward for GMP and WMA and to develop a concrete action plan.

A total of 25 partners participated in the meeting and the participants discussed WMA's priority actions and future direction.

- Dispatching partners to the relevant meetings:

The WMA dispatch experts to several relevant meetings to share our information and knowledge through making presentations and participating in discussions. The outcomes of the meetings and collected information will be shared with other partners afterwards. In this year, we plan to dispatch experts from the WMA to the following meetings:

- The International Expert Group Meeting on Sustainable Management of Mercury Waste organized by UNIDO on 10th – 11th September 2018 in Vienna, Austria
- World Congress 2018 organized by the International Solid Waste Association on 22nd – 24th October 2018 in Kuala Lumpur, Malaysia

- Collaboration with the Chlor-alkali Area:

The WMA and USEPA (the co-lead of the Chlor-alkali Area) conducted a joint survey on technical needs assessment of chlor-alkali conversion on 19th – 23rd March 2018 in Uruguay. The Ministry of the Environment, Japan dispatched three experts from the WMA with expertise on: Ion-exchange membrane method, Decommissioning of mercury cell plant and mercury waste management, and Financing. The 2nd joint study is now under planning.

- d) Planned future activities include:

- Activities for promoting information sharing:

- To consider approaches to further promote information sharing among partners and others.
- To consider new information sharing systems. Such systems can be built on the experience of other areas of the GMP.
- To review the rule of mailing lists for active communication among core-members (e.g., screening of membership). Such communication should be conducted in a fair and secure manner (to avoid inaccurate information and ensure overall benefit of partners).
- To encourage partners to share information relevant to mercury waste by using a mailing list. Information useful for partners include news, case study information and project information.
- To encourage other partners, especially private sectors to be included in the Resource Person List (RPL).
- To explore the possibility to hold face-to-face meetings (making use of opportunities when events relevant to chemicals and waste are held).

- Activities for technical information dissemination:

- To suspend development of “good practice” documents, rather to consider approaches to disseminate information available in the existing Guidelines/Guidance.
- To develop a Catalogue compiling the technical information shared by the partners and to update that on a regular basis. The catalogue might include the following information:
  - Name of company (technology holder)
  - Overview of technology
  - Contact information
  - Link to company website

- To consider a holistic approach (mainstreaming of mercury waste management in an overall solid waste management strategy).
- To disseminate the technical information through the UNEP-GMP website.
- Project-based activities:
  - To consider how a mercury waste management project can address other global environmental agenda, such as the sustainable development goals, or how to pursue “co-benefits” through collaboration with other sectors (e.g., energy saving).
  - To identify the type of mercury waste generated from each sector and possible technical solutions that can be provided by WMA.
  - To demonstrate feasibility of transboundary movement and environmentally sound management of mercury waste.

## 7) Mercury supply and storage

- a) The governments of Spain and Uruguay are jointly leading the supply and storage partnership area (S&S).
- b) The objective of the mercury S&S partnership area is to:
  - Reduce or eliminate production and export of mercury 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 mercury from chlor-alkali plants, non-ferrous metal processing, oil & gas production.
  - Assess and facilitate information on options and availability of technologies for storage or final disposal of excess mercury supply from other sources.
  - Determine whether 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 the availability of options and technologies for the environmentally sound management of excess mercury supply, including its storage or final disposal.
- c) Key activities in this area include:
  - Information not available at the time of publication
- d) Planned future activities include:
  - Information not available at the time of publication

## 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 programmes in key, strategically selected ways to ensure that reductions are globally significant.
- c) Key activities in this area include:
  - Global Mercury Inventory
    - UN Environment and the CSI are collaborating in the field of the Global Mercury Inventory, concentrating efforts around measurement methodology and improved data to allow a better understanding of worldwide mercury emissions and, in particular of the cement sector.
    - In September 2017, a survey was sent out to CSI companies in order to foster a closer collaboration between UN Environment and CSI and to support the

- Global Mercury Inventory by providing industry data. Mercury is an issue for the sector, even if most cement plants emit relatively low levels of mercury.
  - The survey participants agreed that the CSI should collaborate and partner with UN Environment.
  - Due to earlier work of the CSI on the Global Mercury Inventory there seems to be a risk that mercury emissions from cement industry get over-estimated because of the assumptions made rather than the use of industry data, which will contribute to more reliable estimations.
  - From an industry point of view, it is therefore important to understand whether the mercury inventory toolkit overestimates emissions and if yes, to what extent.
  - Having considered that the CSI does not cover the totality of global cement production and that getting reliable data from companies may take time and demand resources, the group agreed to start with a high-level assessment based on the example of the US, possibly with the support of Portland Cement Association.
  - CSI members agreed that in a second stage, company data should be collected and analysed to better understand how a more detailed assessment using the toolkit compares to the high-level assessment as well as to company measurements.
  - Information on cement production, emission abatement technologies and their respective abatement efficiency are considered easier to obtain, while the concentrations of mercury in natural as well as alternative raw material and fuels are complex to determine and cannot readily be collected on a larger scale.
  - CSI comments to the Draft Global Mercury Assessment (GMA) 2018
    - In the 2018 Global Mercury Assessment, cement manufacturing accounts for about 10.5% of anthropogenic mercury emissions to air. With this cement ranks 3rd after ASGM and coal power plants. Given the significant increase of emission estimates from the cement sector (223t in 2018 vs 173t in 2013) the group decided that it could be worthwhile to question this data.
  - Guidance for reducing and controlling emissions of mercury compounds in the cement industry
    - Furthermore, the CSI has continued to promote the Guidance for reducing and controlling emissions of mercury compounds in the cement industry among its members.
- d) Planned future activities include:
- Following the recent formation of the Global Concrete and Cement Association (GCCA) in January 2018, the members of the GCCA (including eight current CSI members) have agreed to work on sustainability issues for the Cement and Concrete sector within GCCA. As a result, the CSI will cease to exist with effect from 1st January 2019. Given the substantial changes pending, no future activities have been defined at this point in time.
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