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**Global Mercury Partnership
Partnership Advisory Group
Fourth meeting**
Rome, 27-28 September 2012

Reporting of the mercury emissions from fate & transport partnership area

UNEP Global Mercury Partnership

Note by the Secretariat

Individual partnership area evaluations have been prepared by the partnership areas in response to Annex I Section 3.f.iv of the UNEP Global Mercury Partnership Overarching Framework. The mercury releases from fate & transport partnership area has drafted a partnership area evaluation. It is available in the annex to this document for information.

4.0 Proposed Reporting Format for individual partnership areas

Please note: individual partnership areas are asked to respect a 4-page maximum reporting limit.

1. GENERAL INFORMATION	
1.1 Individual partnership area:	Mercury Air Transport and Fate Research (F&T)
1.2 Individual partnership area lead:	Prof. Nicola Pirrone Director CNR- Institute of Atmospheric Pollution Research Rome, Italy pirrone@iia.cnr.it
1.3 Reporting year/period:	July 2010 to June 2012
1.4 How many meetings were held over the reporting period?	Number of face to face meetings: 1 (at 10 th International Conference on Mercury as a Global Pollutant (ICMGP), Halifax • Nova Scotia • Canada, July 24-29, 2011. Number of teleconferences: > 5 Other: F&T has taken part to many meetings and workshop and, amongst other, to: the UNEP meeting on mercury held in Geneva on July 20 th – 22 nd 2010; the International Workshop “Mercury Contaminated Sites: Characterization, impacts and remediation” held in Piran (Slovenia) on October 10 th – 14 th 2010 organized by the Jožef Stefan Institute; the PAG meetings (Partnership Advisory Group) organized by UNEP in 2010 and 2011; the INC3 held in Nairobi (Kenya) on October 29 th – November 4 th 2011 where UNEP and F&T have organized an exhibition space on partnership activities. The F&T will also take part to INC4 exhibition space to be held in Punta del Este, Uruguay, from 27 June to 2 July 2012, organized by UNEP.
1.5 How many partners are parts of this partnership area?	29 (at June 2012) including Canada, China, Germany, Italy, Japan, Korea, Slovenia, South Africa, UK, USA, and several research and other governmental and private institutions.
1.6 How much funding was raised through this partnership area? What about in-kind assistance?	All countries involved provided in kind contributions in terms of personnel involved, travel funds, and facilities made available (i.e., teleconferences, computing).
1.7 What is the objective of the individual partnership area?	
<p>F&T aims to support the decision of the GC and specifically the activity of the overarching partnership by:</p> <ul style="list-style-type: none"> • Accelerating the development of sound scientific information to address uncertainties and data gaps in global mercury cycling and its patterns (e.g., air concentrations and deposition rates, source-receptor relationships, hemispheric-global air transport/transformation emission sources, transboundary movement through hydrological and atmospheric pathways, air/water exchange, aquatic mercury cycle and exposure in biota, particularly fish); • Enhancing compilation and sharing of such information among scientists, between scientists and policymakers, with various global stakeholders, and other interested parties; • Providing technical assistance and training, where possible, to support the development of critical information; • Enhancing the development of a globally-coordinated mercury observation system to monitor the 	

concentrations of mercury species into the air and water ecosystems in cooperation with the GEO Task HE-09-02d “Global Observation Network for Mercury” as part of GEOSS 2012-2015 work plan.

- Enhancing the exchange of information and cooperation with the Task Force on Hemispheric Transport of Air Pollutants (TF HTAP) of the UNECE-LRTAP Convention.

Considering the importance of an integrated evaluation of mercury impacts on the whole environment, the scope of the Partnership’s research activities has been recently extended to include aquatic transport and fate of methylmercury to biota as well as human exposure.

2. MONITORING PERFORMANCE
(Tracking partnership activities and partner contributions)

2.1 Please provide a short overview of key partnership area efforts completed since the previous Governing Council (brief description, outcomes, costs, timeframe).

- a) Cooperation with the Task Force on Hemispheric Transport of Air Pollution (TF HTAP) of United Nations Economic Commission for Europe Convention on Long-range Transboundary Air Pollution (UNECE-CLRTAP) that led in the second half of 2010 to the publication of the Report “Part-B: Mercury.” The objective of HTAP 2010 assessment is not limited to informing the LRTAP Convention but, in a wider context, to provide data and information on issues of long-range and intercontinental transport of air pollution and to serve as a basis for future cooperative research and policy action (Pirrone, N. and Terry Keeting, Editors). This Report released in July 2010 has been provided as input to the preparation of the report for the Paragraph 29 study as requested to the Executive Director of the UNEP Chemicals during the 2008 GC, following the same approach adopted for the 2008 report.
- b) The F&T partners were involved in several special sessions of the 10th International Conference on Mercury as a Global Pollutant (ICMGP), held in Halifax • Nova Scotia • Canada.
- c) All partners have received financial support from their government as well as from private institutions to carry out their tasks and contribute to the MFTP goals and objectives.
- d) The leader of the F&T, in cooperation with partners and other research and university institutions in the world, started a 5-yr research project (2010-2015) funded by the European Commission aiming to build a Global Mercury Observation System (GMOS). This project is consistent with the Partnership’s recommendation for a global monitoring system that was made in its 2008 report to UNEP, titled “Mercury Fate and Transport in the Global Atmosphere.” GMOS will support major international programs and conventions aiming to control the effectiveness of control measures that will be adopted in the future to reduce the impact of mercury pollution related to man-made activities on human health and ecosystems.

2.2 Please provide a short overview of the key current partnership area efforts (brief description, expected outcomes, budget, timeframe).

- a) Contribution on different aspects related to atmospheric emissions from natural and anthropogenic sources, measurements in air and other environmental media, modeling atmospheric transport and deposition patterns to aquatic and terrestrial receptors and re-emission to the atmosphere.
- b) The GMOS, a 5-year project started at the end of 2010, will provide an important contribution to the future activity of the F&T in relation to the improvement of emission inventories, mercury monitoring programs, regional and global scale modeling, and policy scenario development;
- c) Expected outcomes are technical reports, special sessions in conferences and workshops, and development of joint projects. This activity has been quite successful during the last two years in terms of sharing of information and capacity building.
- d) Harmonization of greenhouse gas and development of mercury global emissions inventories, e.g., by filling current gaps in geographic and source coverage, which includes information on regions not yet accounted for and on sources not yet accounted for in currently used databases, e.g. biomass burning, artisanal gold mining, coal-bed fires and natural.
- e) Further coordination and liaison with various organizations and programs (such as United Nations Economic Commission for Europe, Arctic Monitoring and Assessment Programme, UNEP Regional Seas, Task Force on Hemispheric Transport on Air Pollutants of the UNECE-LRTAP convention);
- f) Planning continues on various joint projects: for example the U.S. and Italy have been discussing potential collaboration on the use of the monitoring data that the U.S. has collected at Mauna Loa, Hawaii. The U.S. has committed to provide two years of data to the UNEP mercury program;

- g) Close coordination with the Group on Earth Observations (GEO), the organization working to built GEOSS (the Global Earth Observation System of Systems), to include mercury in GEOSS work plans;
- h) Contribution to the update of the UNEP 2008 report entitled “Global Atmospheric Mercury Assessment: Sources, Emissions, and Transport.” F&T will contribute to this work requested to UNEP by the UNEP Governing Council in its twenty-six session (2009) in consultation with Governments, for consideration by the Governing Council/Global Ministerial Environment Forum at its twenty-seventh session” in 2013.

The results help provide valuable insights to these countries and to the UNEP Global Mercury Partnership in strategic activities in moving forward.

2.3 Please provide a short overview of any key upcoming, planned partnership area efforts (brief description, expected outcomes, budget, timeframe).

- (a) Further contribution on different aspects related to atmospheric emissions from natural and anthropogenic sources, measurements in air and other environmental media, modeling atmospheric transport and deposition patterns to aquatic and terrestrial receptors and re-emission to the atmosphere;
- (b) Possible partnership activities to further the understanding of atmospheric mercury through a measurement program at K2 Italian Research Station;
- (c) Further coordination and liaison with various organizations and programs (such as United Nations Economic Commission for Europe, Arctic Monitoring and Assessment Programme, UNEP Regional Seas, Task Force on Hemispheric Transport on Air Pollutants of the UNECE-LRTAP Convention);
- (d) Prosecution of close coordination with the Group on Earth Observations (GEO), the organization working to built GEOSS (the Global Earth Observation System of Systems), to include mercury in GEOSS work plans;
- (f) Further contribution on different aspects related to "Global Mercury Observation System – GMOS," - the GMOS project funded by the EC started in November 2010. GMOS is aimed, among other objectives, to support the implementation of future legally binding instruments aiming to reduce the impact of mercury emissions on human health and ecosystems that are under preparation in the framework of the UNEP Mercury Program and last GC meeting's decisions;
- (g) Details on financial commitments of partners to the F&T activity are not available, however, partners are willing to support the activity of the F&T in the years to come;
- (h) The F&T partners will be involved in several International Conferences as the next International Conference on Heavy Metals in the Environment to be held in Rome -Italy, in September 2012 (<http://ichmet16.iaa.cnr.it/>) and the 11th International Conference on Mercury as a Global Pollutant to be held in Edinburg, UK in 2013.

The F&T will continue not only to act as an integrator of scientific information among the partnerships, but will continue to support the overarching goals of the UNEP Mercury Program.

2.4 Identify the priority actions for the forthcoming reporting cycle (2 years).

- Enhancing the development of a globally-coordinated mercury multimedia observation system to monitor the concentrations of mercury species in various media, e.g., the air and water ecosystems;
- Enhancing the quality and timeliness of communication of new scientific findings to policymakers;
- Improving of linkages with other air-emissions-related partnership areas and further planning on various joint projects

3. TRACKING PERFORMANCE RELATED TO UNEP GOVERNING COUNCIL PRIORITIES

3.1 In response to Governing Council Decision 25/5, paragraph 34/c:

Please summarize the key results achieved by the partnership area in terms of the following areas (as applicable).

- i) Providing information on best available techniques and best environmental practices and on the conversion of mercury-based processes to non-mercury based processes; →Not applicable to F&T Partnership Area
- ii) Enhancing development of national inventories on mercury; →Further contribution will be provided on different aspects related to atmospheric emissions from natural and anthropogenic sources. The report published in 2010 within the framework of Task Force on Hemispheric Transport of Air Pollutants (TF HTAP) of the UNECE-LRTAP Convention has provided relevant information to the Paragraph 29 study. The update of the UNEP 2008 report entitled “Global Atmospheric Mercury Assessment: Sources, Emissions and Transport” is still in progress and certainly will provide other relevant information on different aspects related to atmospheric

emissions of mercury. Draft of the report was presented at UNEP/AMAP joint meeting in May 2012.
iii) Raising public awareness and supporting risk communication; → The F&T partners have organized a number of workshops and conferences during the period (July 2010 - June 2012) focusing on mercury, including the combined meeting of MEC7 Workshop (Mercury Emission from Coal), UNEP Coal Partnership, and UNEP Fate and Transport Partnership, held in Glasgow, UK on June 17, 2010, and the 10 th ICMGP (International Conference on Mercury as a Global Pollutant) held in Halifax, Nova Scotia (Canada) on July 24-29, 2011.
iv) Providing information on sound management of mercury; → Not applicable to F&T Partnership Area

3.2 (a) Please specify whether the promotion of non-mercury technologies (where suitable economically feasible alternatives do not exist) is relevant to the partnership area. Yes or No → YES. Contributions of F&T partners could include, but not be limited to, providing any available information on costs and effectiveness of alternative control technologies and measures.

(b) If it is relevant, how is the partnership area specifically addressing the promotion of non-mercury technologies? → Dissemination of knowledge through the channels of workshops, conferences, and in cooperation with international programs and conventions.

4. ASSESSING EFFECTIVENESS
(measuring the impact of partnership activities on target beneficiaries)

4.1 What are the partnership area indicators of progress? If no indicators, please specify why.

Indicators of progress are under development in the F&T framework depending also on progress made on global understanding of international mercury emissions sources, fate and transport. The following indicators are proposed by F&T lead:

- Technical reports prepared by F&T to support the UNEP action on mercury in relation to the requests of Governing Council/Global Ministerial Environment Forum;
- Number of publications and reports published by F&T partners with updates on mercury emissions to the atmosphere from anthropogenic, natural sources, processes by region and emission-source category, and on different aspects related to mercury fate and transport, including the mercury cycling in the global environment;
- Update on mercury depositions on different spatial and temporal scales;
- Number of workshops and conferences organized by F&T partners or which have seen F&T partners involved;
- Cooperation projects with international programs, conventions, and linkages with other partnership areas and scientific experts.
- Number of national inventories prepared with UNEP assistance (e.g. using UNEP Toolkit)
- Number of responses to requests for information and/or training

4.2 Please report on progress in terms of each of the partnership area indicators outlined within the partnership area business plan.

Indicators of progress are under development

4.3 What are the strengths of the partnership area?

This partnership area has demonstrated the ability both in organizing top expertise globally (in developing progressive and successive global assessments and in cooperating research) and in communicating effectively with policymakers.

The institutions involved in F&T have a close cooperation among them and with key institutions worldwide. This has led to the GMOS project, which will be, in cooperation with existing national programs, the key project in the years to come to monitor the effectiveness of control policy on mercury contamination worldwide.

4.4 What are the weaknesses and/or major challenges for this the partnership area?
This partnership faces the challenge of involving emerging countries in its activities. It also faces the challenge of ensuring policymakers understand the need for all the various types of scientific information.
4.5 Can the weaknesses or major challenges be addressed through the partnership? If yes, what is the best strategy to address such weaknesses / major challenges in moving forward?
Regular communication among partners is a challenge that is common to several partnership areas and one that the F&T partners should continue to strive to address.
The F&T partners do not see any relevant weakness to be dealt with at this stage.
5. FUTURE COLLABORATION
5.1 Please identify whether there are potential areas of effort for the partnership that would benefit from enhanced collaboration within the overall UNEP Global Mercury Partnership.
The F&T is continuously exploring how the linkages with other air-emissions-related partnerships could be improved and how F&T communication and coordination activities with other partnership areas can be increased. The future development of the GMOS project will certainly enhance and facilitate this cooperation.
At PAG3, three areas of collaboration were explored. All three would benefit from enhanced collaboration within the overall UNEP Global Mercury Partnership. The areas are: Communication and Outreach; Funding and Priorities/ Wish Lists; and Participation and Leadership.
6. OTHER
6.1 Please outline how this report was drafted and who was consulted with in doing so.
All the partners of F&T were consulted for the elaboration of this report.