Global Partnerships for Mercury Reduction

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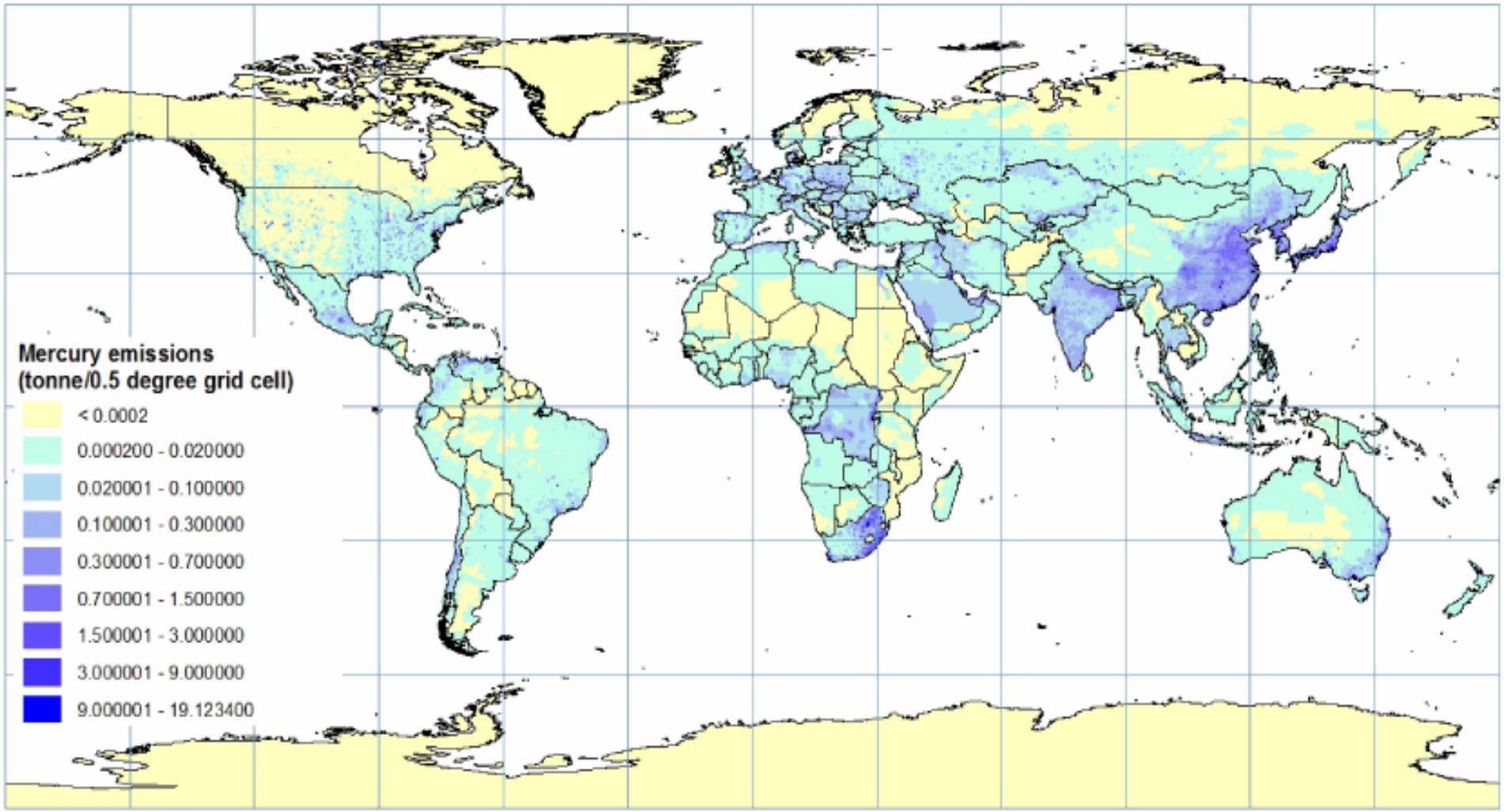
Overview

- Global Mercury Context
- Summary of UNEP Governing Council decisions
- Current status of partnership efforts
- Closing remarks

Mercury Emissions, 2000
diffuse + point sources

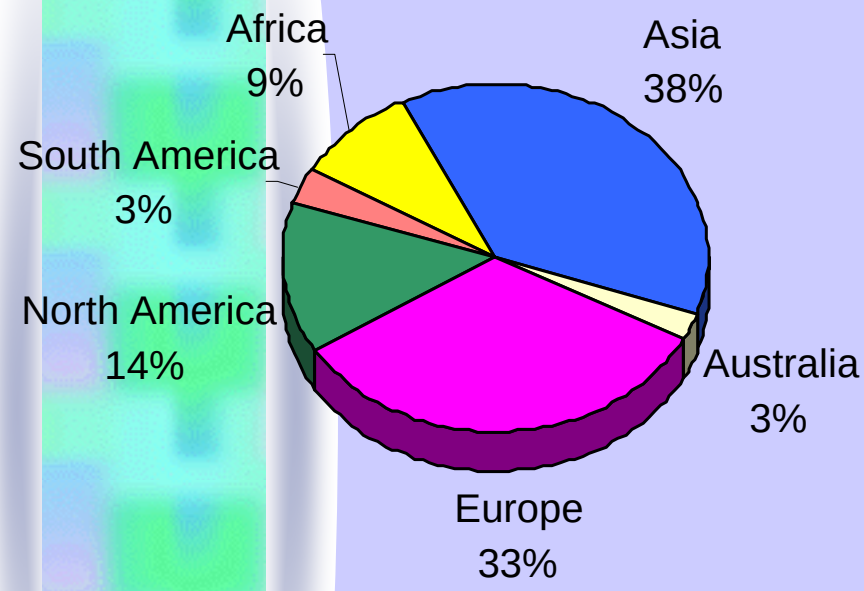


no projection (geographic)

Arctic Monitoring and Assessment Program, using J. Pacyna 2000 data.

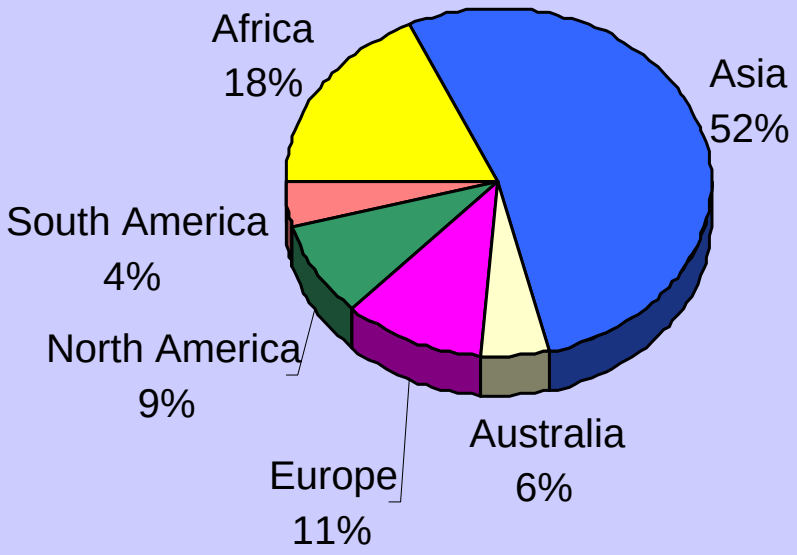
Anthropogenic Air Emissions of Mercury: Distribution by Region in 1990 and 2000

1990



Total: 1,881 metric tons/yr

2000

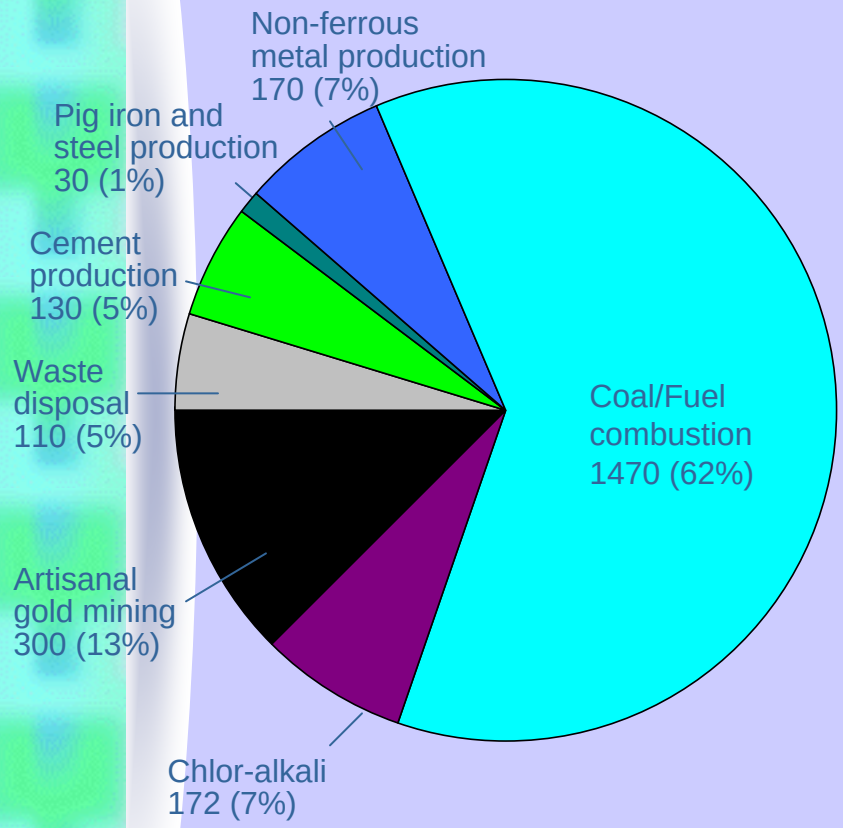


Total: 2,269 metric tons/yr

Asia and Africa account for about 70% of global emissions and show steady, significant increases due to industrialization.

Based on Pacyna, J., Munthe J., Presentation at Workshop on Mercury: Brussels, March 29-30, 2004

Anthropogenic Air Emissions of Mercury: Distribution by Industrial Sector in 1995

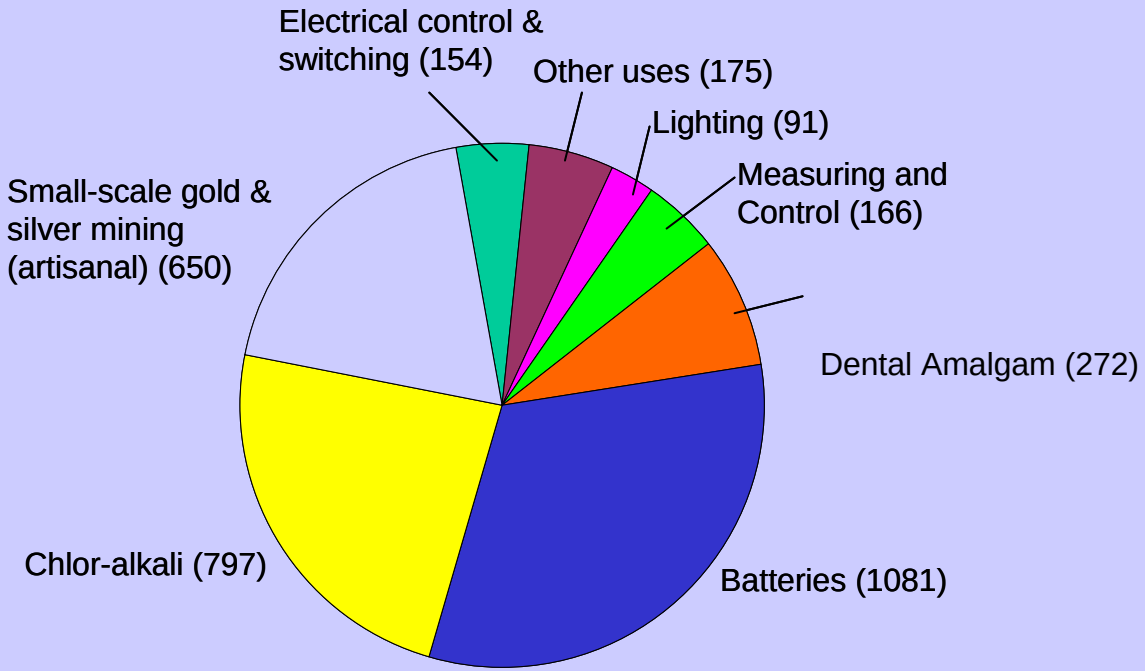


- Coal and fuel combustion is by far the largest source category
- Estimates are rough; most countries do not have Hg inventories
- We need to further develop reliable emissions inventories

Total: 2,382 metric tons

Source: UNEP Global Mercury Assessment, UNEP, Geneva, December 2002

Mercury Use in Products and Industrial Processes



Total: 3,386 metric tons

Source: Peter Maxson, Mercury flows in Europe and the World (2004)

UNEP Governing Council Decisions

- February 2003: established UNEP **Global Mercury Programme** after accepting the findings of the global mercury assessment and concluding that mercury is a global problem

- February 2005: established **partnerships** as one mechanism to address global mercury reductions

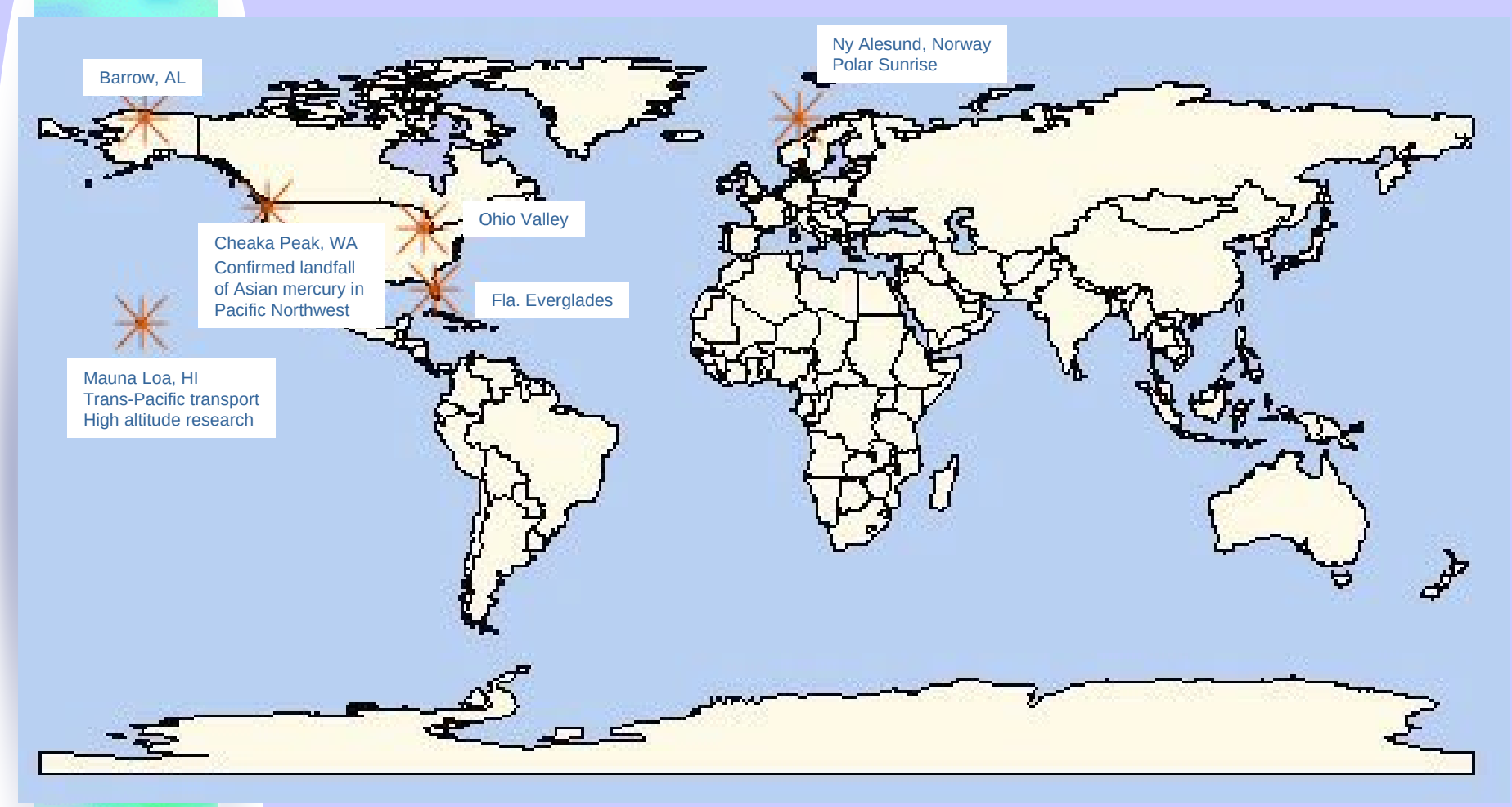
Partnerships

- Urges partnerships to be developed and implemented by governments, intergovernmental and non-governmental organizations, and the private sector in a clear, transparent and accountable manner.
- Governments invited to identify set of pilot partnerships by September 1, 2005.
- UNEP to assist in information dissemination, report on progress, etc.

Partnerships : Current Status

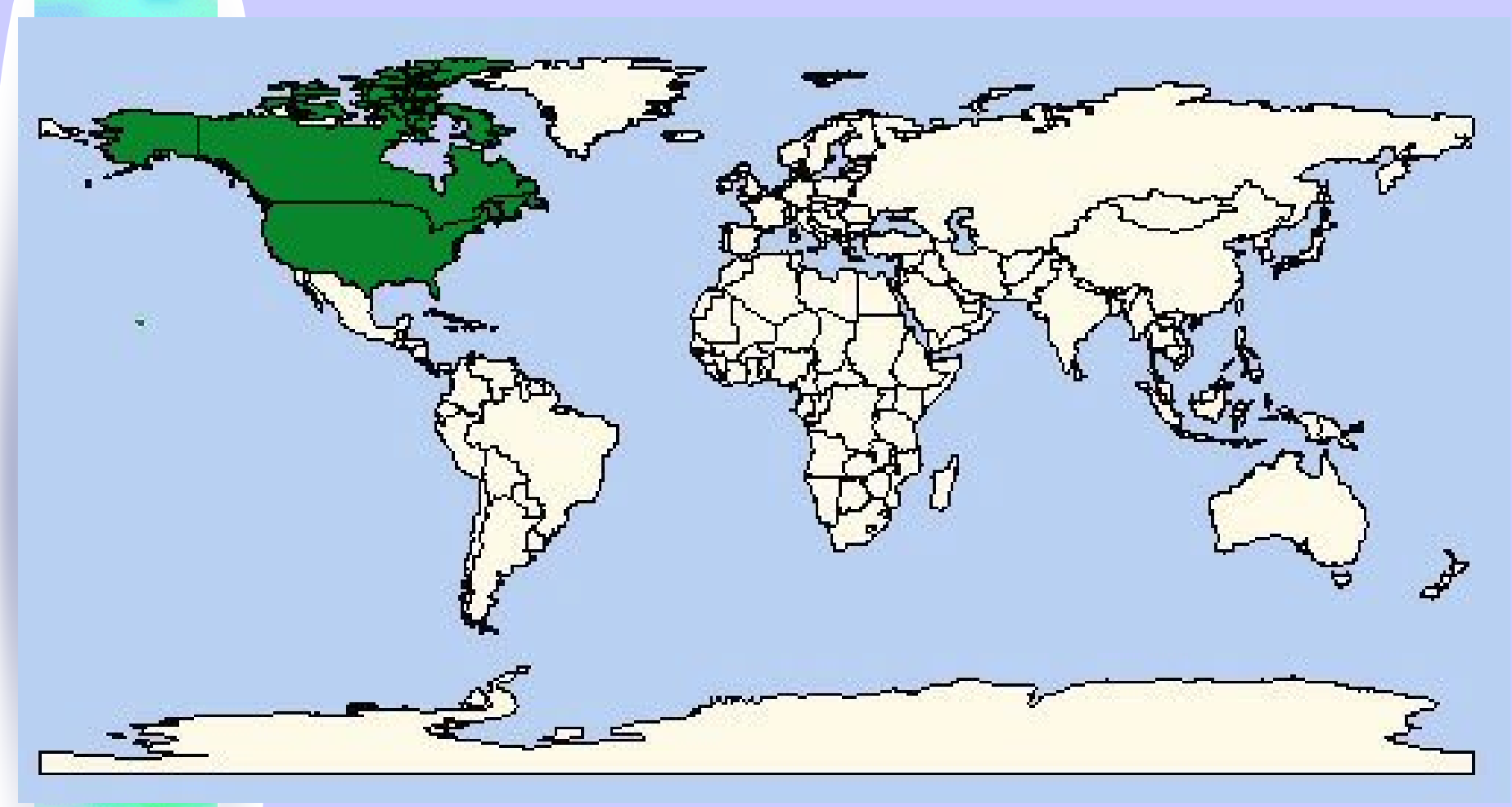
- 18 countries submitted ideas to UNEP for pilot partnerships
- U.S. suggested pilot partnerships:
  - Products
  - Artisanal and small scale gold mining
  - Chlor-alkali facilities
  - Coal combustion
  - Global Air Transport and Fate Research
- U.S. pledged about $ 2 million for partnerships and collaborative activities
- www.chem.unep.ch/mercury/partnerships

Current Bilateral and Multilateral Programs

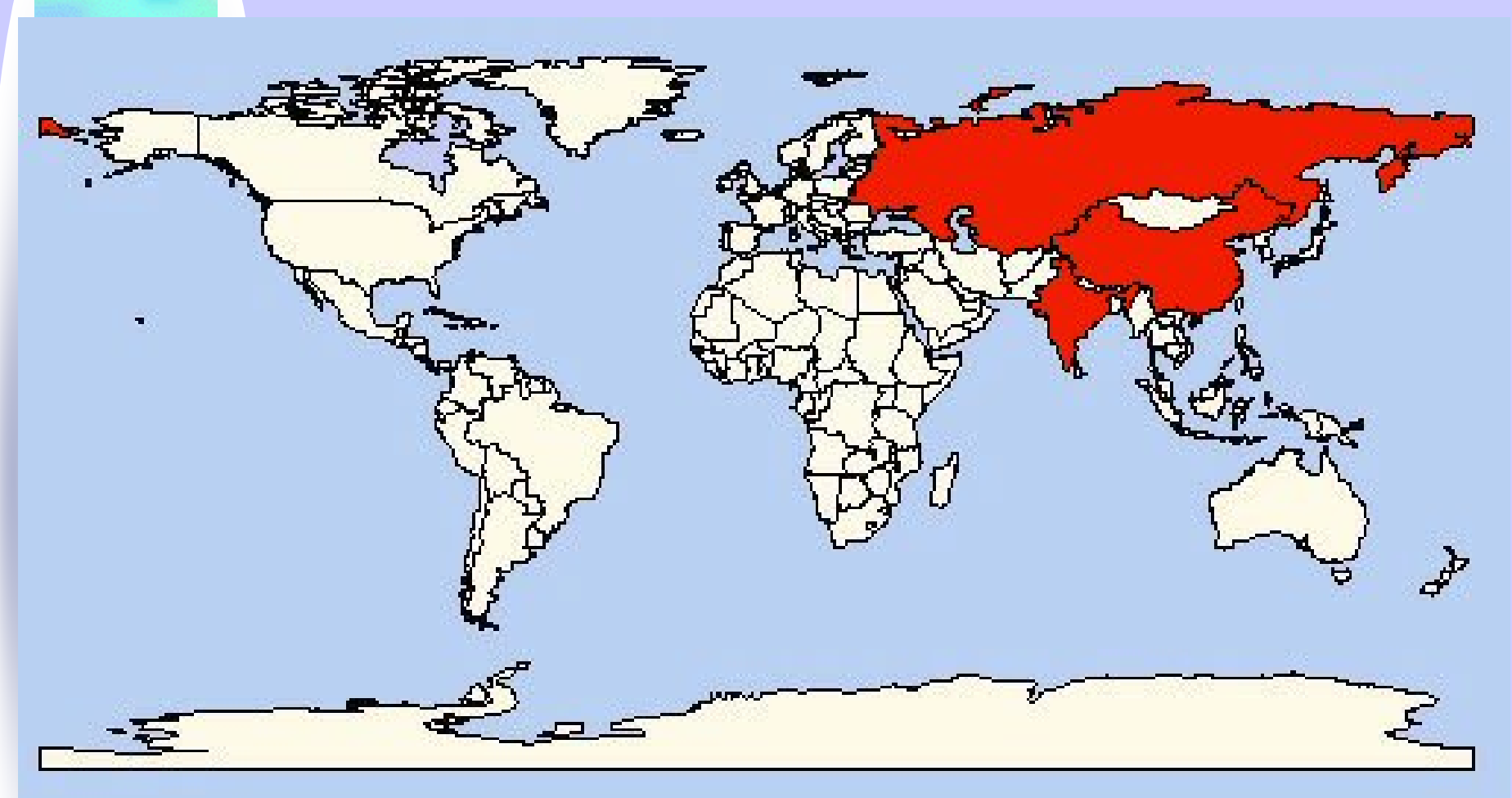


Atmospheric Monitoring Stations

-- Global Mercury Research

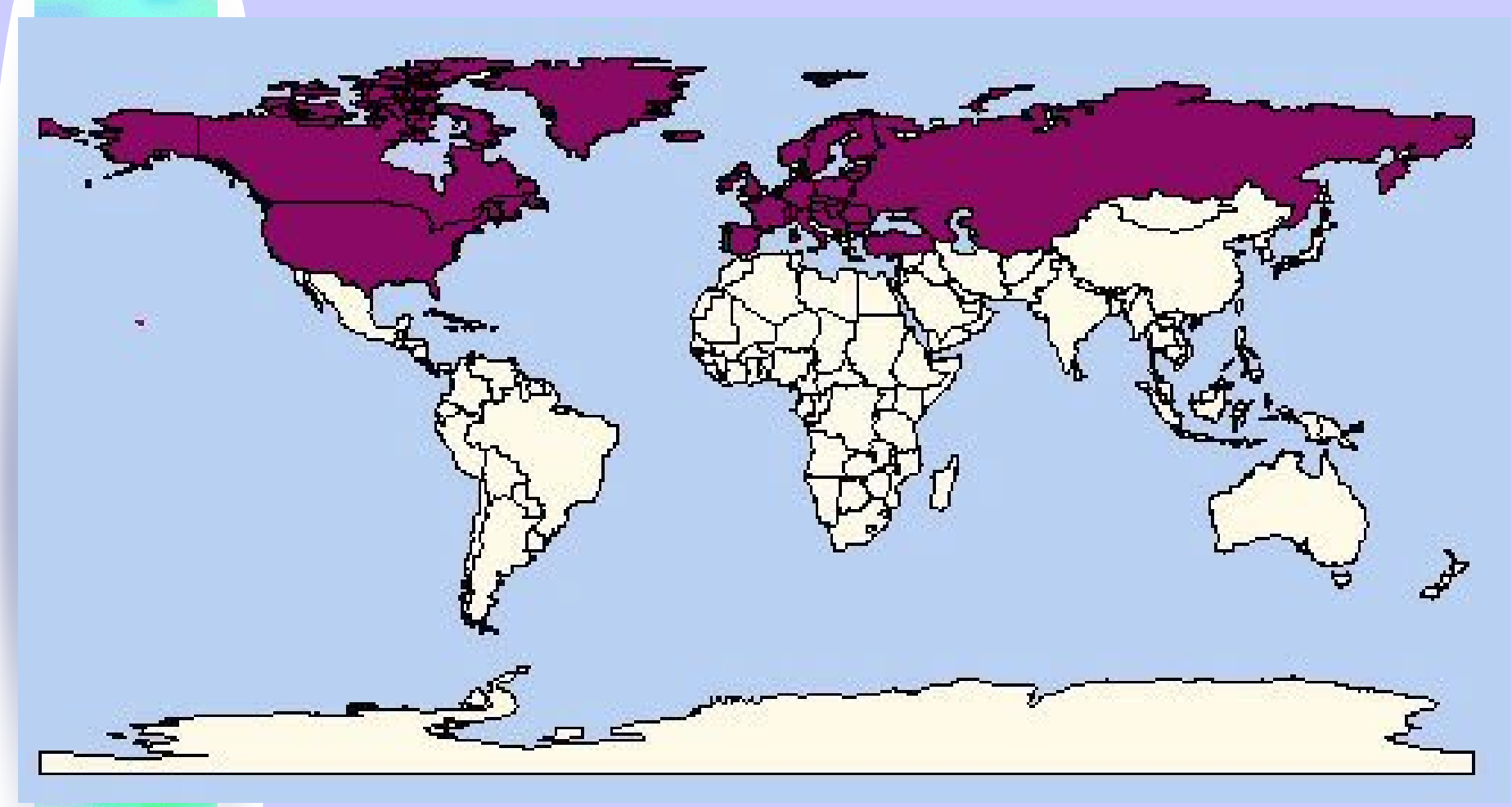


- US/Canada Great Lakes Binational Toxics Strategy (Hg and other PBTs)
- New England Governor's/Eastern Canadian Premiers' Mercury Action Plan



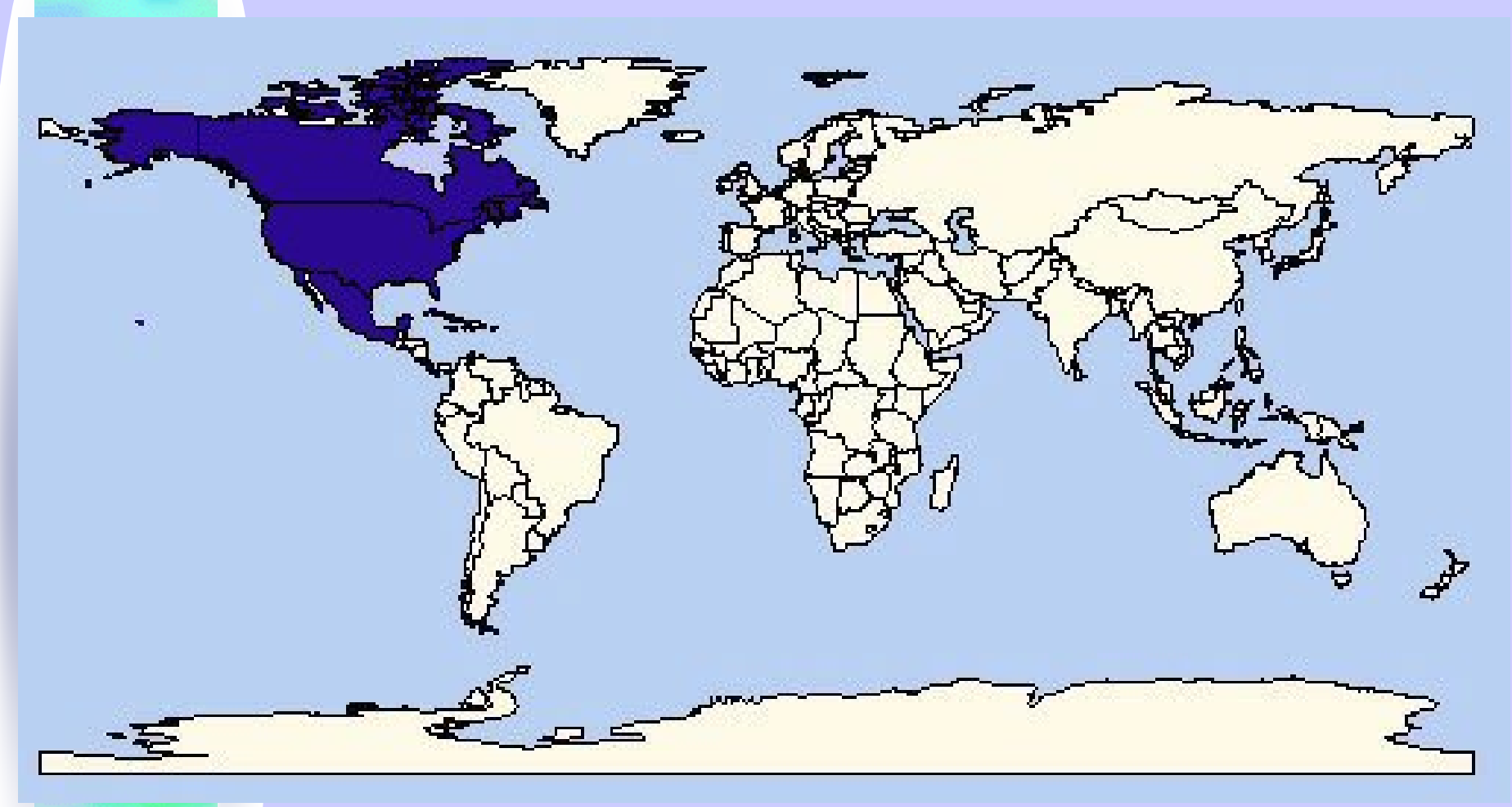
Capacity Building and Technology Transfer

-- China, India, Russia



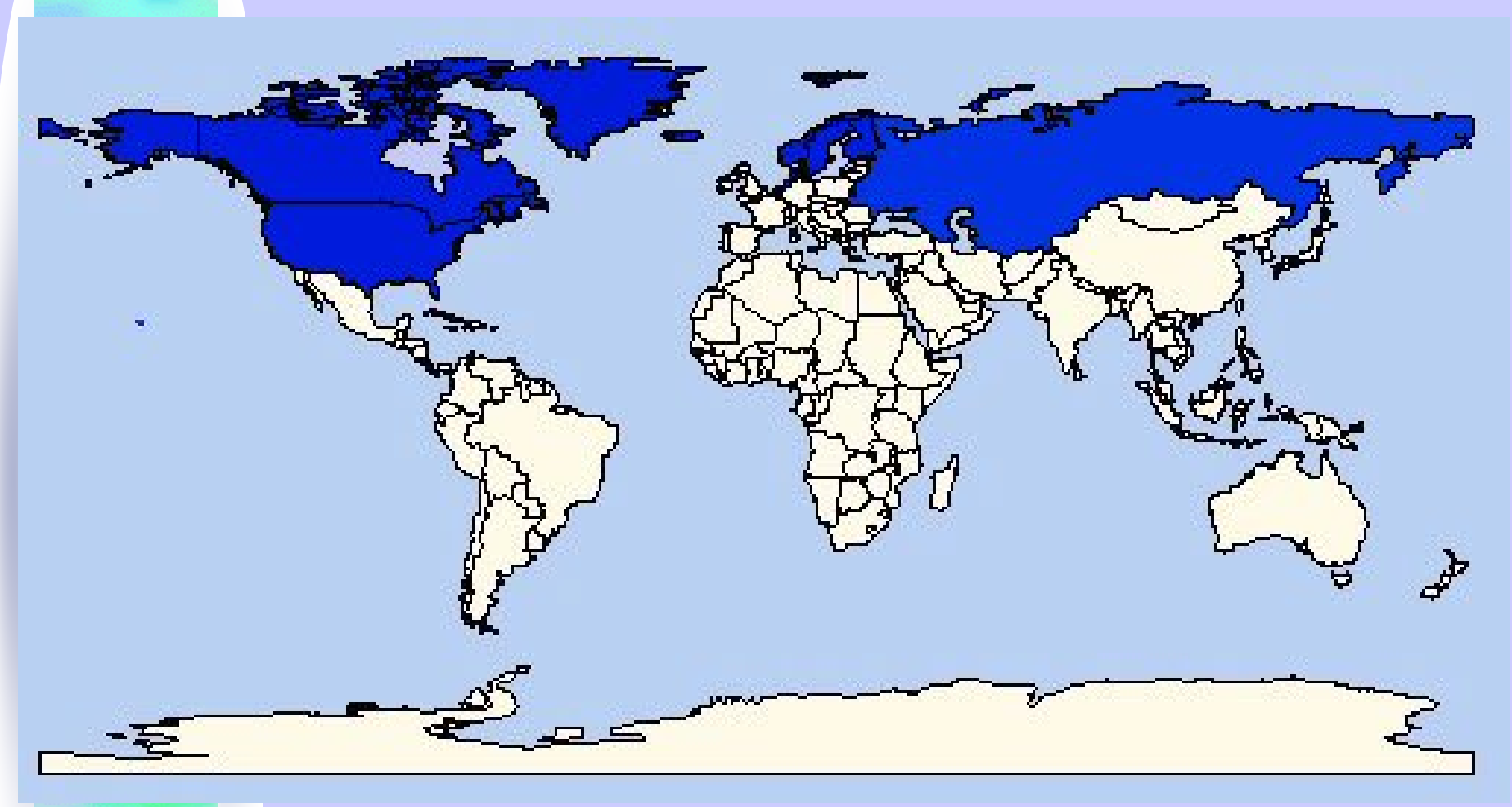
United Nations Economic Commission for Europe (UNECE) Long-Range Transport of Air Pollution (LRTAP) Heavy Metals Protocol

Entered into force 2003; U.S. is a party



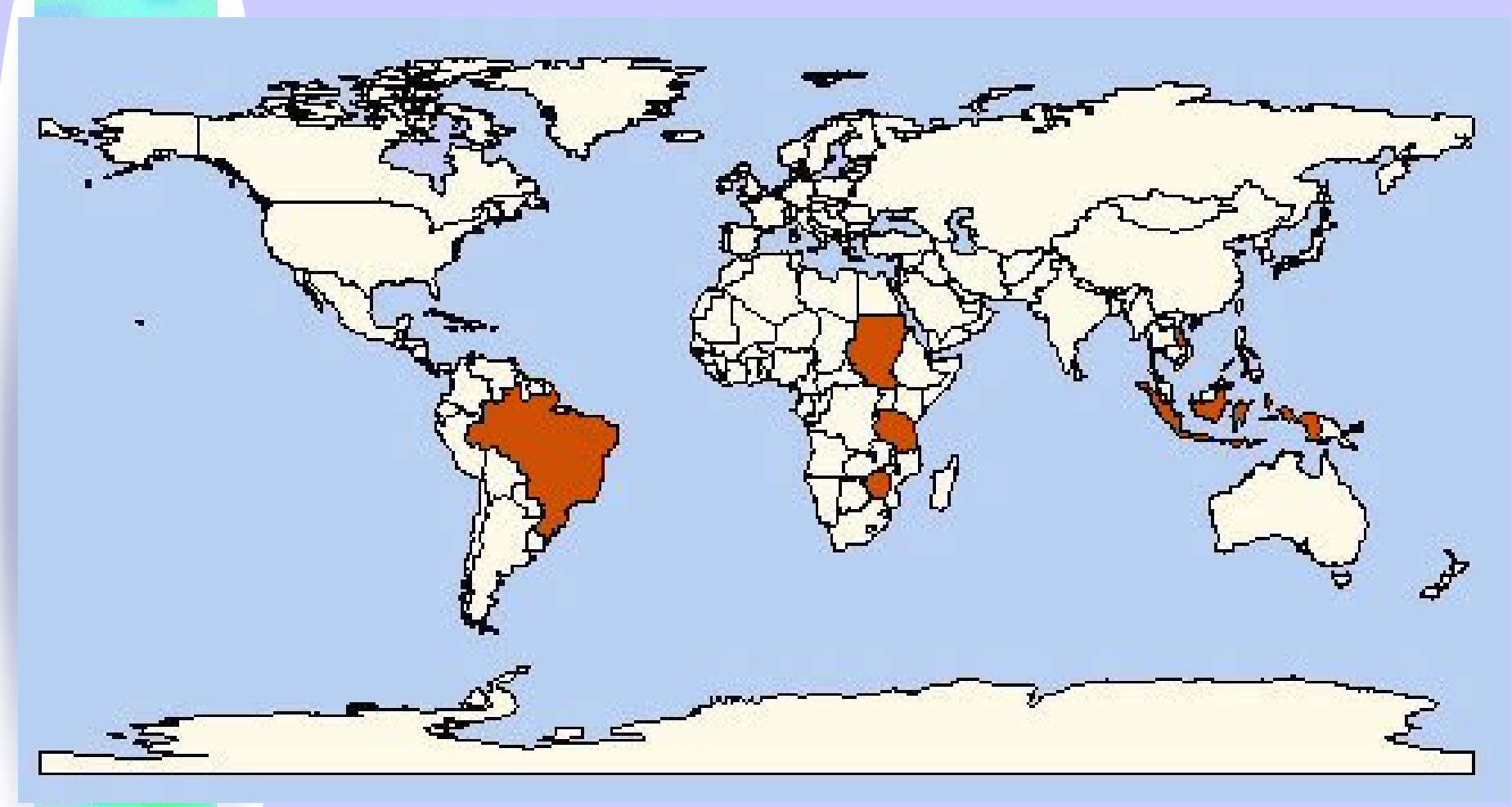
Commission for Environmental Cooperation (CEC)

-- North American Regional Action Plan for Mercury



Arctic Council Action Plan (ACAP) Mercury Project

-- Composed of the eight Arctic nations



United Nations Industrial Development Organization (UNIDO) Global Mercury (Artisanal Mining) Program

-- Brazil, Indonesia, Lao, Sudan, Tanzania, Zimbabwe

Global Partnership for Mercury Reduction in Products

- Goals: Reduce global use of and demand for mercury by reducing or eliminating mercury in products where effective substitutes exist.
- Reduce global mercury releases that may occur during manufacturing and industrial processes and during disposal or recycling of mercury-containing products and wastes.

Global Partnership for Mercury Reduction in Products

- Initial, open invitation meeting held, Portland, Maine, May 2005.
- Government interest: Argentina, Brazil, Burkina Faso, Canada, China, Mexico, India;
- Initial focus areas: health care sector, batteries. Scoping work in China, India, Burkina Faso, Mexico.
- China H2E pilot to start 2006
- Mercury in Products workshop planned for early 2006, leveraging work already underway between the Governments of the United States, Canada, and Mexico, the North American Commission for Environmental Cooperation, and UNEP.

Global Partnership for Mercury Management in Artisanal and Small-Scale Gold Mining

- Affects 20-30 million people in over 40 countries.
- Releases may be 1000 tons per year.
- Goals: Reduce health and environmental impacts associatied with use of mercury in ASGM through outreach to and actions with mining communities regarding options for use and exposure reduction.
- Support existing international efforts in this area. Build on strong UNIDO Global Mercury Program, implementing on the ground pilots to achieve mercury emissions and use reductions by encouraging adoption of appropriate technology use.

Global Partnership for Mercury Management in Artisanal and Small-Scale Gold Mining

- Initial consultative meeting held in Washington, DC in June 2005, with 63 participants from all over the world. Co-hosted by CASM.
- Coordinating with CASM and other stakeholders – website and good guidance materials.
- Pilot project sites under discussion.
- Regional Hub concept, economic dimensions.

Global Partnership for Mercury Reduction in the Chlor-Alkali Sector

- Goals:
  - Make information available on public policy and industry experiences for improving the environmental performance of mercury cell chlor-alkali facilities.
  - Make available operational information on non-mercury cell technology.
  - Provide mercury exposure information for factory workers and operations.
  - Promote the reduction or elimination of global mercury releases in the chlor-alkali process of particular facilities through pilot demonstration projects:
    - adoption of best management practices
    - Primary metric: consumption of mercury

Global Partnership for Mercury Reduction in the Chlor-Alkali Sector

- Projects being developed in Russia, India, Mexico
- Partners: industry (World Chlorine Council and its members), governments (Canada, Denmark, Norway, Russia, India, Mexico)
- Russia: Kick-off workshop held in November, training and site visits by March 2006, reduction project to be finished by December 2006.
- India: Working with India to develop workshop for early 2006.
- Mexico: Working with Mexico and industry to develop workshop for March 2006.

Global Partnership for Mercury Reduction in Coal Combustion

- Improve understanding of the magnitude and impact of mercury emissions from the power sector.
- Improve understanding of existing multi-pollutant approaches (to reduce PM, SO2, NOx) and their effectiveness in reducing mercury emissions (co-control).
- Assist countries in identifying and developing information needed to make informed control strategy choices including on coal composition and variability, emissions speciation, existing facility and control technology specifications.
- Provide information on the applicability, effectiveness and cost of newly emerging mercury specific and multi-pollutant control technologies.
- U.S. with China, Japan and Canada conducted a workshop in Beijing (10/31-11/2/05) to facilitate an increased understanding of multi-pollutant approaches to mercury reductions at power plants in China. Attendance also from India, Russia, South Africa. Follow-up.
- India power sector work

Global Partnership for Air Fate and Transport Research

- Goals: Accelerate the development of scientific information on global cycling and related information on mercury and increase communication between scientists and policymakers.
- Objectives: Faciliate establishment/recognition of regional collaborative research programs, invited to post summary descriptions of their plans and progress on the UNEP website.
- Based on a US/Italy planning trip to China (8/20-92/05), a joint US/Italy/China monitoring/modeling project has been proposed for commencement in 2006. Expected to serve as a model regional program under the UNEP framework.
- Interest from Canada and Japan; ongoing dialogue.
- Draft discussion paper has been placed on the UNEP website. Consultative meeting involving researchers and various public and private institutions will be held in 2006.

Other Mercury Work Areas

- **Inventories: release inventory work under consideration with China and India. Hope to work jointly with Canada and Japan.**
- **Mercury use and trade flows**
- **Risk Communication**

Closing Remarks

- Mercury partnerships have the potential to achieve actual mercury reductions in the short term
- Expected results: measurable reductions in use and emissions in pilot facilities/sites
- Good response from governments
- We welcome more partners and your input

Partnership Contacts

Products: wright.denise@epa.gov

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Chlor-alkali: bandemehr.angela@epa.gov

Combustion: mazza.carl@epa.gov

Fate & Transport: durkee.stan@epa.gov