General information for all participants

United Nations Environment Programme (UNEP) Governing Council and Global Ministerial Environment Forum – 25th meeting

Working Group to Review and Assess Measures to Address the Global Issue of Mercury

Introduction

Over the past several decades, scientific studies have shown that mercury is a persistent pollutant in the environment and that it cycles globally. Mercury is a neurotoxin. It is able to pass through the blood-brain barrier as well as the placental barrier. Health effects are especially acute in utero, where exposure can cause long-term cognitive and developmental defects. Although humans are exposed through other mechanisms, eating predatory fish containing methylmercury is by far the most significant exposure pathway. Mercury also poses environmental risks because it accumulates in food webs, notably in lakes, oceans and the Arctic. Mercury may persist in ecosystems for decades to centuries once mobilized.

In response to growing concerns about health and environmental risks, the United Nations Environment Programme (UNEP) Governing Council, which includes 58 representatives from regionally diverse countries, called for a global assessment on mercury. This study, the ***International Mercury Assessment***, now complete and attached, details the risks mercury poses to humans and the environment. This is the first organized meeting of global representatives since the *Assessment* was released. Although the *Assessment* establishes many scientific facts, some issues, including mercury fluxes through atmospheric emissions and mercury demand, remain uncertain.

UNEP has established a Working Group on Mercury to discuss, in light of the *Assessment,* whether global actions to address mercury might now be appropriate. At today's meeting, the Working Group will address the **form** that future action might take (e.g. legally binding treaty, voluntary actions) as well as the **scope** of any international efforts (e.g. what issues to include), given the available scientific information.

UNEP has invited six country representatives to participate in today's meeting, including Brazil, Canada, the People's Republic of China, the European Union (EU), Tanzania and the United States of America. Three of these countries are also representing the standard regional groups of nations often used in UNEP discussions: Brazil is representing the Group of Latin American and Caribbean countries (GRULAC), the European Union is representing EU member states, and Tanzania is representing the African Group of countries. A list of countries in each group is included below.

In addition, three non-governmental organizations (NGOs) with a particular focus on the science and technical aspects of mercury have asked to participate in today's meeting: a scientist from Mercury Free Future (MFF), a scientist from the Arctic Council's Arctic Monitoring and Assessment Programme (AMAP) and the Chief scientist from the World Coal Power Association (WCPA). The six countries have agreed that these NGO scientists may speak and present information at the meeting. However, only countries will be allowed to vote, if any voting takes place.

A Chairperson from Japan has agreed to moderate today's discussion as necessary. This meeting's **mandate** is to decide whether to recommend to UNEP some kind of formal international mercury negotiations, and if so, what the agenda for such negotiations should include. Alternatively, the group might decide that only individual voluntary measures are appropriate, or that further information gathering is all that is required. If the group decides it wants to make a formal recommendation to UNEP or to any other organization, it will take a unanimous vote of the six country representatives. The Chair will record the outcome of the meeting on each issue and any specific information requests.

The following questions form the **agenda** for the Working Group meeting:

- Does the Working Group, given the current status of scientific information on mercury's impacts, feel that global action of some kind is warranted?
- What **form** should future collaborative action take (e.g. legally binding treaty, voluntary actions)?
- What might be the **scope** or focus of any future negotiations (e.g. what issues to include)?
- What **additional scientific information**, if any, will be necessary to inform future negotiations and collaborative action?

More specifically, the Working Group has identified four main questions on the form and scope of future action on mercury. The UNEP Secretariat developed a number of options for each of these issues:

1) **Is global action necessary to address mercury, and what form should it take?**
2) **Should atmospheric emissions of mercury be included within the scope of a potential agreement?**
3) **Should global demand for mercury use in products and processes be included within the scope of a potential agreement?**
4) **Should mercury use in artisanal and small-scale gold mining (ASGM) be included within the scope of a potential agreement?**

Issue 1. Is global action necessary to address mercury, and what form should action take?

In today's discussions, the Working Group should address whether there is sufficient evidence to justify concerted global action on mercury and, if so, what **form** that action ought to take. At today's meeting, a decision should almost certainly be made about whether or not to move forward with a formal treaty-making effort.

At previous scientific meetings, some countries have suggested that UNEP should initiate formal international negotiations that would lead to a freestanding, legally binding mercury Convention. Other countries, however, have suggested there is a need for more evidence that mercury poses a serious global threat. They suggest that voluntary measures and additional research might be sufficient at this point.

More broadly, countries have discussed several principles that might guide decision making, including:

- *The Precautionary Principle*: Future action may not require complete information; instead, scientific uncertainty should not be used as a justification for delayed action.

- *Common but differentiated responsibilities*: Future action may acknowledge that countries vary in their ability to act given the stage of development; although all countries may have responsibility to address this problem, this principle suggests their actions may vary in degree.

Option 1.1: There is sufficient evidence that mercury us a global problem with significant risks. Initiate formal international negotiations for a new legally binding mercury convention.

Option 1.2: There is a need for more evidence that mercury is a global problem with significant risks. Enhance voluntary measures.

Issue 2. Should atmospheric emissions of mercury be within the scope of a potential agreement?

The Working Group will need to determine whether there is sufficient information to say beyond a reasonable doubt that anthropogenic emissions are a significant source of mercury in the environment and, given the risks, should be within the scope of global action.

Atmospheric emissions will be a significant topic at today's meeting. Suggested mechanisms to address atmospheric emissions could include requiring national emission inventories (following pre-set procedures) as well as timetables and targets for reducing emissions. Countries might also decide that further information on emissions inventories is a necessary precursor to global action of any kind.

Option 2.1: There is sufficient information that atmospheric emissions are a large source of mercury. This issue should be *included* in the scope. Future negotiations could include requiring national emissions inventories and proposed timetables and targets for all major emitters.

Option 2.2: There is insufficient information that atmospheric emissions are a large source of mercury. This issue should be *excluded* from the scope. Future negotiations could gather information on emissions inventories to all media before taking action.

Issue 3. Should global demand for products and processes be included within the scope of a potential agreement?

The Working Group should consider whether there is sufficient evidence that demand for mercury in products and processes significantly contributes to the global mercury problem, and whether to recommend any actions to reduce both the supply and the demand for mercury compounds.

Future actions recommended by the Working Group could include a ban on some or all products and processes. The Working Group might also decide to draft a list on which products and processes should be the focus of future action. Finally, given the available scientific information and alternatives, some products and processes might be excluded from the list at the moment.

Option 3.1: There is sufficient evidence that demand for mercury used in products and processes significantly contributes to the global mercury problem. All products and processes should be *included* in the scope of future negotiations.

Option 3.2: Demand for mercury used in *some* products and processes contributes significantly to emissions and mercury releases, while other mercury uses do not. The parties should draft a list for inclusion in the scope of future negotiations.

Option 3.3: There is insufficient evidence that demand for mercury used in products and processes significantly contributes to the global mercury problem. All products and processes should be *excluded* from the scope of future negotiations.

Issue 4: Should mercury emissions from artisanal and small-scale gold mining (ASGM) be included within the scope of a potential agreement?

At today's meeting, representatives will have to assess if there is sufficient information that mercury use in ASGM is a significant part of the mercury problem and whether it should be considered within the scope of future negotiations.

Mercury is used in small-scale gold mining to aid in extraction. Artisanal mining could be an important issue within the global mercury negotiations, since it represents an acute, and preventable, exposure pathway. However, ASGM may prove difficult to mitigate because it intersects strongly with issues of poverty and

development in the global South. This may link, in part, to discussions about financial and technical support to the developing world and whether further assessments of ASGM are needed before further actions could be prescribed.

Option 4.1: There is sufficient evidence that mercury use in ASGM is a significant part of the global mercury problem. ASGM should be *included* within the scope of future negotiations, with potential actions including requiring countries to submit national action plans on ASGM with timetables to phase out the usage.

Option 4.2: There is insufficient evidence that mercury use in ASGM is a significant part of the global mercury problem or that ASGM is a tractable problem. ASGM should be *excluded* from the scope of future negotiations while financial and technical support are provided to conduct further assessments on ASGM.

Cross-cutting concerns: Financial and technical support

Apart from the four main issues described above, several countries have raised the issue of financial and technical support as a key, cross-cutting concern that needs to be discussed at today's meeting. Developing countries in particular are seeking support from industrialized countries to enable a transition away from mercury use.

Mercury Working Group participants

Japan is acting as the **Chair** at today's meeting.

Brazil is also representing the Group of Latin American and Caribbean Countries – **GRULAC** (Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela)

Canada

China

European Union (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom)

United Republic of Tanzania is also representing the **African Group** (Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Republic of the Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Togo, Tunisia, Uganda, Tanzania, Zambia, Zimbabwe)

United States of America

NGO participants

The Arctic Monitoring and Assessment Programme (AMAP), a Working Group of the Arctic Council (Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden and the United States of America), has sent a Senior Scientist to discuss recent reports.

Mercury Free Future (MFF), a coalition of environmental groups that operate globally, has sent a scientist to discuss mercury risks.

The **World Coal Power Association (WCPA)**, an association of coal power companies that operate globally, has sent a senior scientist to discuss mercury risks.

Glossary – Key Science & Policy Terms

artisanal and small-scale gold mining: small-scale gold extraction, usually without significant resources or equipment and often involving the intentional use of mercury

ataxia: loss of control of body movements

atmospheric mercury depletion events (AMDE)s: rapid drops in the concentration of elemental mercury in the lower atmosphere caused by sunlight-induced chemical reactions, that increase surface mercury deposition rates

atmospheric transport: movement of mercury between countries and continents via the atmosphere

benchmark dose: the level of mercury exposure necessary to produce a set level of harm relative to background exposure

bioaccumulation: the accumulation of toxic substances within the tissue of living organisms over time

biomagnifications: an increase in the accumulation of toxic substances at higher levels in the food web (trophic levels)

chlor-alkali production: an industrial process used for the production of chlorine and caustic soda; this process often employs mercury

common but differentiated responsibilities: a negotiating principle that recognizes all parties as jointly responsible for addressing global environmental challenges, but that distributes the implementation given uneven economic and social development

cost-benefit analysis: an approach to decision-making that quantifies the economic costs and benefits of a proposed policy, and weighs the two against one another

divalent mercury (Hg(II)): a common form of mercury present in many organic and inorganic compounds; divalent mercury has a short lifespan in the atmosphere (days to weeks) and therefore does not transport far distances

elemental mercury (Hg(0)): pure mercury

intentional mercury emissions: mercury released from sources that deliberately employ mercury, for example mercury used in artisanal and small scale gold mining

legally-binding treaty: an international legal agreement between countries that commits each party to a set of policy actions, including common rules and guidelines for all parties; while more difficult and slow to negotiate, treaties can be more effective than voluntary actions

methylation: the addition of a methyl group (CH_3)

methylmercury (MeHg): a common form of mercury in the environment, comprising one mercury atom and one methyl group; methylmercury has high bioavailability and can bioaccumulate in species

Minamata disease: a disease caused by exposure to high levels of methlymercury, leading to atrophy in the brain, tremors, loss of perception, major impairments in functioning and, in severe cases, death

national action plans: a framework and timeline to measure and manage mercury releases at the national level

neurotoxin: a toxic substance that acts on the human nervous system

precautionary principle: the principle that complete information is unnecessary to make policy decisions in the face of future risk or harm; it implies that scientific uncertainty should not be used as a justification for delayed action

re-emissions: mercury release into the atmosphere from actively cycling mercury; this mercury, previously deposited in marine and terrestrial ecosystems, is often re-emitted to the atmosphere from oceans

RfD, reference dose: the maximum oral dose of a toxic substance that is scientifically claimed will not cause adverse health effects

trophic level: an organism's position within a food web; predators are at a higher trophic level in a food web, and thereby, may have higher mercury levels

unintentional mercury emissions: mercury released from sources that do not deliberately use mercury, for example mercury emissions from coal-fired power plants

vinyl chloride monomer (VCM) production: an industrial chemical used to produce polyvinyl chloride (PVC), a common plastic

voluntary actions: an agreement to perform a set of policy actions on a voluntary basis, with no enforcement mechanisms or consequences for non-action; voluntary agreements are likely faster to negotiate than legally-binding treaties but may not result in as much action or financial commitments