More than 140 countries meeting in Geneva last month signed off on a pact to curb the release of toxic mercury around the world by giant coal-burning power plants as well as 13 million poor artisanal gold miners.

The pact, signed January 21 in Geneva makes significant progress in curbing the mining of mercury, controlling storage of the toxic metal and preventing its release into the environment. It directly attacks the world's largest source of mercury pollution -- small-scale gold mining -- and calls for a reduction in the release of mercury vapors while separating gold from ore, especially in areas adjacent to towns and cities.

The new pact is called the Minamata Convention, named after the bay in Japan where 1,700 fishermen died from mercury exposure 50 years ago. It was then that the world discovered how toxic mercury could affect humans.

"This is the first-ever treaty on a heavy metal and its uses," said the International Institute for Sustainable Development, in a statement on its website.

Mercury -- also widely used in dental fillings -- causes neurological damage that is especially important in children whose nervous system is still developing. Permanent mental disability is a common result from mercury exposure.

Human Rights Watch, in a report on its website, noted that "One doctor in Papua New Guinea told us how some miners with mercury poisoning were 'staring blankly at the wall' and 'did not recover.'"

While some criticized the treaty for not giving more specific guidelines for phasing out mercury release, the new agreement met with approval by the Blacksmith Institute, a non-government organization that has specialized in preventing the release of toxic substances and cleaning up waste sites in 40 developing countries.

"There is not much [in the treaty] that deals specifically with cleaning toxic hotspots and the language used is mostly voluntary," said Richard Fuller, CEO of the NY-based Blacksmith Institute.

"But that is fine," he told the Global Journal. "We cannot expect governments to commit to such processes ... It is a country's prerogative to decide how to deal with toxic hotspots, according to its own means, so a treaty does not necessarily mean there will be direct requirements to deal with the issues ... This treaty brings attention to the problem and that is what matters for us."

The treaty calls on governments to ban burning of amalgam -- a mixture of mercury and gold --- in residential areas.

Blacksmith recently introduced to Southeast Asian miners the use of the chemical borax as a safe alternative to the use of mercury in separating gold from ore.

Blacksmith has also reduced mercury pollution in Indonesia by showing miners how to use a retort, a simple metal cap and tube that captures escaping mercury vapors and collects them in a pot of water so the mercury can be used over and over instead of released into the air.

The new convention still must be ratified by the participating governments and signed at a conference in October in Minamata, Japan.

Fuller noted that U.S. negotiators at the mercury conference indicated that Washington might ratify the pact -- which would be a big boost for the effort to contain mercury damage. The United States had not ratified the Basel and Stockholm agreements banning export of toxic wastes and pesticides to developing countries.

The executive director of the UN Environment Program (UNEP) Achim Steiner told reporters in Geneva that "Everyone in the world stands to benefit... in particular the workers and families of small-scale gold miners."

The convention is to be signed by diplomats representing the participating nations at a meeting later this year.

The pact calls for regulation of: supply and trade in mercury; use of mercury in industry and products; reduction of emissions from gold mining; reduction in power plant emissions.

A few days before the January conference in Geneva, UNEP released a report on mercury, stating that it had doubled its concentration in the top 100 meters of the world's oceans. It estimated that 260 tons of the substance had polluted rivers and lakes.

UNEP also fed into the widespread fear that mercury is contaminating the world's fish, noting that the silvery metal became more concentrated in predator fish that could be consumed by humans.

Critics of the pact noted that new coal-burning power plants have five years to install pollution controls and existing plants had 10 years to comply.
The World Coal Association (WCA) told reporters that coal-burning accounts for 24 percent of global mercury emissions and that controls could eliminate up to 90 percent of that.

The treaty also calls for reducing the use of mercury for fillings in dental work, another source of pollution.

The Australian Dental Industry Association said in a statement that "there was widespread acceptance that dental amalgam is a major source of mercury pollution, particularly in waterways."

The IIISD released a summary stating that the pact will:
-- ban or phase out mercury mining;
-- restrict mercury trade;
-- phase out by 2020 mercury-added products such as certain batteries, switches and relays, lamps, cosmetics, biocides, barometers, manometers and thermometers;
-- require phase-down measures for dental amalgam;
-- phase out chlor-alkali and acetaldehyde production that uses mercury and mercury compounds;
-- reduce or eliminate the use of mercury in artisanal gold mining;
-- control emissions of mercury from coal-fired power plants, coal-fired industrial boilers, production of non-ferrous metals (lead, zinc, copper and industrial gold), waste-incineration facilities and cement clinker production facilities;
-- and set general requirements regarding interim storage, mercury wastes and contaminated sites.

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