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MINAMATA CONVENTION

This article covers "Daily Current Affairs" and the topic details "Minamata Convention". The topic "Minamata Convention" has relevance in the Environment section of the UPSC CSE exam.

For Prelims:

About the Minamata Convention?

About Mercury Pollution?

For Mains:

GS 3: Environment

Source of Mercury Pollution?

Way Forward?

Why in the news:

Recently, it was the sixth anniversary of the Minamata Convention

About Minamata Convention:

The Minamata Convention on Mercury is an international treaty designed to protect human health and the environment **from the adverse effects of mercury exposure**. It was adopted on **October 10, 2013, and entered into force on August 16, 2017**. The convention is named after the city of **Minamata in Japan**, which experienced one of the most severe cases of mercury pollution in history due to industrial wastewater discharges. **India is a signatory to the Minamata Convention and has also ratified it.**

Key objectives of the Minamata Convention include:

- **Mercury Supply and Trade:** The convention aims to control the supply and trade of mercury, including its primary mining, export, and import.
- **Mercury Use and Emissions:** The convention encourages the use of best available technologies and practices to reduce mercury emissions and releases from various sources, including industries such as mining, energy production, and waste incineration.
- **Artisanal and Small-Scale Gold Mining:** The convention addresses the significant use of mercury in artisanal and small-scale gold mining, aiming to reduce the exposure of miners and their communities to mercury.
- **Mercury-Added Products:** The convention promotes the phase-out and reduction of mercury use in various products and processes, such as batteries, fluorescent lamps, cosmetics, and medical devices.

- **Mercury Waste Management:** The convention provides guidelines for the proper management and disposal of mercury-containing waste to prevent its release into the environment.

Mercury Pollution: A Menace

Mercury's Nature and Concern:

Mercury is a **naturally occurring element present in the Earth's crust**. It has been classified by the World Health Organization (WHO) as one of the ten most worrisome chemicals or chemical groups in terms of public health.

Mercury's Varied Applications:

- **Thermometers and Barometers:** Mercury's high thermal expansion coefficient and excellent visibility render it suitable for traditional thermometer and barometer use.
- **Chemical and Mining Processes:** Mercury has found applications in diverse chemical and mining operations, including gold mining and chlorine production.
- **Electronics and Electrical Switches:** Mercury-wetted switches serve in electrical applications due to its conductivity, creating reliable electrical connections.

Source of Mercury Pollution

Natural and Anthropogenic Sources

- **Natural Sources:** Volcanic eruptions and erosion can release trace amounts of mercury into the environment.
- **Anthropogenic Sources:** Mercury pollution stems from activities like Artisanal and Small-Scale Gold Mining (ASGM), industrial processes, and improper e-waste disposal.

Impact and Associated Risks:

Mercury accumulates in aquatic organisms, such as fish, mainly as methylmercury. Consumption of contaminated fish exposes individuals to this compound, which poses health risks including Minamata disease. This disorder was first observed in Minamata Bay, Japan, where industrial waste contamination led to mercury accumulation in the fish.



Way Forward

Innovative Solutions

- **Mercury-Removing Filters:** Novel filters could selectively capture and adsorb mercury particles from air, water, and consumer products, aiding in emission reduction.
- **Phytoremediation:** Utilizing phytoremediation, plants absorb mercury from soil and water, enabling its removal from the environment.

planetGOLD Program Implementation

- The global implementation of the planetGOLD program, driven by the UNEP, aims to eliminate mercury usage in artisanal gold mining, ensuring safer work environments. The program, aligned with the Minamata Convention, operates under the Global Environment Facility's support.
- Noteworthy is the mercury-free processing plant in Burkina Faso, a model for transitioning away from mercury use.

In Conclusion

The Minamata Convention stands as a crucial global endeavor to mitigate mercury's adverse effects on health and the environment. With innovative solutions and committed initiatives like the planetGOLD program, the world strives to curtail mercury pollution, ensuring a safer and more sustainable future.

Source:

<https://www.unep.org/news-and-stories/story/ending-toxic-trail-small-scale-gold-mining>

Q.1 Consider the following statements regarding Minamata Convention :

1. It deals with the problem of Arsenic pollution.
2. India has signed the Minamata Convention but is yet to ratify it.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

ANSWER: D

Q.2 The UNEP 'planetGOLD' program is related to which of the following polluting substances:

- (a) Gold
- (b) Cadmium
- (c) Arsenic
- (d) Mercury

ANSWER: D

Q.3 "Discuss the sources, effects, and global efforts to mitigate mercury pollution, emphasizing the significance of the Minamata Convention in addressing this environmental and public health challenge."

Rishabh