



The State of Mercury in Cabo Verde



The Minamata Convention on Mercury is a global agreement specifically designed to address contamination from a heavy metal. Opened for signature in October 10, 2013 and entered into force on August 16, 2017, the Convention seeks to address issues related to the use and release of mercury in trade and in industrial processes. The treaty also addresses major sources of atmospheric emissions and releases of mercury into the environment, as well as long-term storage and disposal of mercury and mercury compounds.

Under the Minamata Convention, individual countries are charged with protecting human health and the environment from the risks of mercury exposure by systematically controlling mercury emissions and releases, including phasing out the use of mercury in certain products and processes.

Cabo Verde has not signed the Convention but is taking steps toward ratification. As part of this effort, Cabo Verde

conducted a Minamata Initial Assessment (MIA). The primary activities of the MIA include:

- A review of the institutional and capacity needs for implementation of the Convention;
- An assessment of national regulations, policies and legislation to assist with preparations for compliance with the obligations of the Convention; and
- An identification of the primary sources of mercury emission and releases as part of a detailed National Mercury Profile.

The MIA was conducted with financial assistance from the Global Environment Facility and was implemented in collaboration with UNIDO and the Ministry of Agriculture and Environment, through the National Directorate of the Environment in Cabo Verde. This brochure summarizes the major findings of the MIA.



Findings from the Minamata Initial Assessment

What are the Sources of Mercury?

The origin of mercury can be natural (e.g., volcanoes) or anthropogenic (e.g., human-caused releases). The major sources of mercury in Cabo Verde, based on the mercury inventory conducted for the MIA, include the following:

- Use and disposal of mercury-added products, such as batteries, thermometers, and electrical switches and relays (241 kg Hg/yr)
- Waste management, including open fire waste burning, waste deposition/landfilling, and waste water treatment (92 kg Hg/yr)



As a result of the MIA process, the magnitude and distribution of these anthropogenic releases into the air, water, and land are now quantified for Cabo Verde. Based on the MIA findings, the use and disposal of mercury-added products contributes significantly to mercury input to the environment. Specifically, products including batteries (120 kg Hg/yr), electrical switches and relays (50 kg Hg/yr), and thermometers (43 kg Hg/yr) account for the majority of this mercury. Waste management practices such as open fire waste burning also contribute significantly towards mercury input to the environment, and to air in particular. The total calculated mercury input to society in Cabo Verde is 350 kg Hg/yr.

How are People Exposed to Mercury?

Elemental mercury, which is found in manufactured products, is not necessarily toxic to humans. Exceptions may include dental amalgam and cosmetics, but these products are still under scientific investigation, so their potential harm is not yet fully characterized.

Methylmercury, the organic form of mercury, is toxic to humans because it can biomagnify in food webs and bioaccumulate over time in organisms. A neurotoxin, methylmercury can cause physiological harm and behavioral disorders in people.

Fish from the sea or freshwater systems can be a major source of methylmercury. In general, fish species that are small, short-lived, and forage low in the food web contain less methylmercury, while predatory species that are long-lived and grow larger can contain higher levels of methylmercury. Many of the fish available in Cabo Verde are safe to eat, although more information is needed about the mercury concentrations to better characterize how mercury is distributed in different species of fish in the waterscape of Cabo Verde.

Seafood and fish with reduced levels of mercury (*healthier choices*):

- Salmon, sardine, scad

Seafood with average levels of mercury (*moderate risk*):

- Skipjack, albacore and yellowfin tuna, octopus, dentex

Seafood with higher levels of mercury (*riskier choices*):

- Atlantic bluefin tuna, Spanish mackerel, shark



Atlantic Bluefin Tuna

How Does Mercury Affect Ecological Health?

The process of methylation, the conversion of mercury to methylmercury, varies widely on the landscape and within the waterscape. Areas that are particularly sensitive to mercury deposition—where methylation rates are highest and biomagnification in the food web is greatest, and where animals experience significant reproductive harm—are called biological mercury hotspots. These areas generally represent aquatic ecosystems or have an aquatic connection within the food web.

Generally, aquatic ecosystems connected to wetlands, either marine (e.g., estuaries) or freshwater (e.g., lakes), are prime areas for high methylation rates. Fish and wildlife predators that live in estuaries and lakes, or that forage in a food web associated with these

habitats (e.g., mangroves), often contain elevated mercury levels. The combination of high methylation rates and longer-lived animals higher in the food web creates the greatest risk.

Habitats at Greatest Risk:

- Wetlands, mangroves, aquatic habitats near contaminated sites

Wildlife at Greatest Risk:

- Brown Booby, Sooty Tern, Brown Noddy, Black Noddy and Red-billed Tropicbird



Red-billed Tropicbird



Forested Mountains



Coral Reefs



Coastal Regions

What is the State of Mercury in Cabo Verde?

The impacts of mercury pollution can be challenging to identify and reverse. However, strategies to reduce mercury contamination are important because mercury can cause significant adverse effects to human and ecological health.

Findings from the MIA in Cabo Verde indicate the input of mercury into ecosystems may be elevated in some areas but with effort by the government, key stakeholders, and the general public, those inputs can be further identified and reduced.

Lifecycle management of mercury-added products also presents a challenge for Cabo Verde. The adoption of legislation that limits and restricts the importation of such products will be an important first step towards the successful implementation of the Minamata Convention, which will help to reduce overall mercury releases on the islands.

Like many SIDS, regional atmospheric mercury loads may be impacting local marine fisheries. However, with greater collaboration and cooperation across the region, the potential risks associated with mercury in the environment can be reduced.

WHAT CAN YOU DO TO HELP?

- Choose healthier fish options (those with lower mercury levels) as part of your diet.
- Use your buying power—purchase no- or low-mercury product replacements when possible (See Useful Links on back page for more information).
- Support legislation that helps reduce the impacts of mercury on the environment.

Recommendations from Cabo Verde Mercury Team

- Create legislation that can help facilitate a framework to comply with the Minamata Convention.
- Reduce the import and use of products that contain mercury by selecting no- or low-mercury product replacements:
 - Replace compact and linear fluorescent lights with LED bulbs;
 - Check the ingredients in skin lightening creams and lotions to avoid products that contain mercury; and
 - Choose brands of batteries that do not contain mercury.
- Properly store waste products with mercury and avoid using landfills by creating proper storage facilities for hazardous waste.
- Generate greater awareness and education through existing outreach programs; oversee the development and distribution of information on mercury to the public, including importers of manufactured products.
- Participate in global mercury database and monitoring programs and coordinate existing data with global efforts organized by UN Environment:
 - Hair samples for people
 - Muscle samples for fish
 - Blood, feather, and egg samples for birds
 - Sampling of cosmetic skin lightening creams; and
 - Air sampling with passive devices.

BRI's Mercury Work in Cabo Verde

Biodiversity Research Institute (BRI) collaborates with its partners in Cabo Verde to help identify and estimate any major mercury sources in the region. An international advisor on mercury, BRI serves as co-lead of UN Environment's Mercury Air Transport and Fate Research Partnership Area to assist with the development of a global mercury monitoring and observation system. In addition, BRI serves as an International Technical Expert with the United Nations Development Programme (UNDP) and with UN Environment, and as an Executing Agency for the United Nations Industrial Development Organization (UNIDO). **Useful Links:** BRI mercury publications: www.briloon.org/hgpubs; Minamata Convention: www.mercuryconvention.org

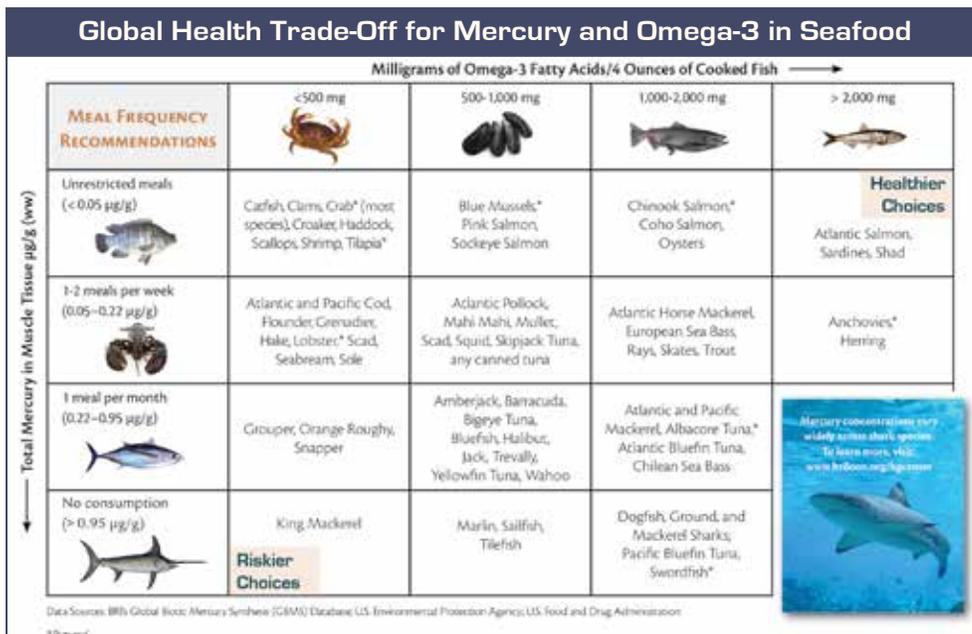
MIA Stakeholders

General List:

- Ministry of Agriculture and Environment (National Secretariat of Food Security and National Direction of the Environment)
- Ministry of Economy and Employment (responsible for fisheries)
- Ministry of Health
- Directorate General of Health
- MIOH (Ministry of Infrastructures and Spatial Planning and Housing)
- Finance Ministry
- Ministry of Education
- General Direction of the Customs
- Chamber of Commerce (Barlavento and Sotavento)
- Parliamentary Group for the Environment
- IGAE (General Inspection of Economic Activities)
- Inpharma
- INIDA
- ARFA
- INDP
- ONLY
- UNICV (Department of Marine Sciences)
- INSP (National Institute of Public Health)
- Dentists (Dentistry - public and private sector)
- ICIEG Cabo Verdiano Institute for Gender Equality and Equity
- AMD Association of Women Members
- NGO platform
- Institute of Quality
- Electra
- ANAS
- ENAPOR
- National Police (Maritime, and border)
- SNPC (National Civil Protection Service)

List of National Steering Group (NSG) participants:

- Ministry of Agriculture and Environment (National Secretariat for Food Security and National Environment Directorate)
- Ministry of Economy and Employment (responsible for fisheries)
- Ministry of Health
- Ministry of Education
- General Direction of Customs
- Parliamentary Group for the Environment
- IGAE (General Inspection of Economic Activities)
- Inpharma (Pharmaceutical Industry)
- INIDA (National Institute of Agrarian Development)
- ARFA (Regulatory Agency of Drugs and Food)
- INDP (National Fisheries Institute)
- UNICA (Intercontinental University of Cape Verde)
- UNICV (Department of Marine Sciences)
- Dentists (Dentistry - public and private sector)
- ICIEG Cabo Verdiano Institute for Gender Equity and Equity
- Quality Institute
- ANAS (National Water and Sanitation Agency)



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