



## [Albania Mercury Country Situation Report 2018](#)

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## 1. Introduction:

Based on the numerous environmental problems of Albania, including management of wastes containing mercury and the inherited contamination sites, it is certainly the case that Albania is one of the countries that contribute globally to mercury pollution.

Albania became a signatory to the Minamata Convention on 9 October 2014 and it had been also actively participating in the Intergovernmental Negotiating Committee (INC) on Mercury. The need for this report is to give a clear picture of the mercury sources in Albania, to highlight the known contaminated sites and mercury hotspots in the media while simultaneously raising our country's national obligations under the mercury treaty. This report will show the initiatives and steps that our country has undertaken and will identify the problem of mercury pollution to be addressed, contributing to National Implementation Plans and global data on mercury pollution.

In recent years, EDEN center has implemented projects/activities based on a contaminated mercury site, called Soda PVC Plant (the site of a former chemical manufacturing complex including a chlor-alkali electrolysis plant.)

In 2012, EDEN Centre conducted fish sampling of cod (11 samples) and mullet (3 samples) in collaboration with local fisherman using protocols developed by the Biodiversity Research Institute (BRI 2011). BRI measured mercury levels (total mercury content = THg) in fish samples in their laboratory in Gorham, Maine, USA. The maximum mercury values observed in mullet were more than four times higher than the reference dose. Two of the mullet samples also exceeded the EU limit (data not shown). Four of the cod samples also exceeded the reference dose as indicated by for example the maximum mercury value.

In same year (2012) EDEN Centre conducted 15 hair samples from inhabitants near the area. BRI measured mercury levels in hair samples in their laboratory and the results of analyses showed 2 residents with higher levels than allowed limit for reference 1ppm. Meanwhile, 3 of the residents were over 50% of the limit level.

In 2015 EDEN conducted sampling of 30-35 women aged 18-44 from a community living nearby the hotspots. All collected hair samples were examined by a Certified Laboratory (Wildlife Research Laboratory of the Biodiversity Research Institute) using a Mercury Direct Analyzer (DMA) according to the EPA 7473 method from the amalgamation atomic absorption spectrum after the gold thermal sample desorption using Milestone DMA-80.

Mercury levels in human hair ranged from <0.025 milligrams per kilogram (mg / kg) to 90.4 mg / kg with an average of 1.685 mg / kg. A concentration of 1 mg / kg is equivalent to 1 part per million (1 ppm) which is the reference level used in this assessment.

Referring to results of analyses, mercury levels in the population were higher levels than allowed limit in 7 residents, in 7 other residents were over 50% of the limit level. Compared to the samples taken in 2012, the number of inhabitants with elevated levels have tripled.

Mercury is a chemical of global concern owing to its long-range atmospheric transport, its persistence in the environment, its ability to bioaccumulation in ecosystems and the food chain, and it has significant negative intergenerational effects on human health and the environment. Action is needed to minimize and eliminate mercury emissions and releases in order to reduce this threat.

Examples such as Vlora highlight the impacts of mercury waste on human health and the environment. To prevent continuous mercury pollution of sea ecosystems and fish serving as food for the local community and tourists in Vlora, it is necessary to prevent further releases from the contaminated area and wastes into the sea. Until this problem is addressed, mercury will continue to contaminate both the local area and contribute to global mercury pollution.

The new treaty is an important step forward in the control of mercury pollution worldwide and represents a global consensus that mercury pollution is a serious threat to human health and the environment, and that action is needed to minimize and eliminate mercury emissions and releases in order to reduce that threat. The mercury treaty requires that Parties take measures to ensure that mercury waste is managed in an environmentally sound manner taking into account the existing waste management regulations of individual countries.

Addressing inherited contaminated sites and the new one's created, should be a priority in the country. Identification and characterization of sites will give an overall 'picture' of the site including soil, water and air sampling, identification of 'receptors' (humans, flora and fauna), activities undertaken on the site, site history and adjacent land uses. Once the site has been characterized, evaluating the risk to humans and the environment can be undertaken.

## **2. Sources of mercury pollution in Albania:**

Based in the "Toolkit for Identification and Quantification of Mercury Releases - Level 1", used under the Minamata Initial Assessment Project in Albania, an aggregated presentation of the results for main groups of mercury release sources is presented in Table 1 of Annex 1, attached to this report.

Main groups of mercury release sources<sup>1</sup>

- Other fossil fuel and biomass combustion
- Oil and gas production
- **Other materials production**

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<sup>1</sup> Minamata Initial Assessment in Albania Chapter 2: Inventory of mercury releases in Albania

- Application, use and disposal of dental amalgam fillings
- **Use and disposal of other products**
- Production of recycled metals
- Waste incineration and open waste burning
- **Waste deposition**
- **Informal dumping of general waste**
- Waste water system/treatment
- Crematoria and cemeteries

Waste incinerators, landfills and informal dumping of general waste that are used to dispose of mercury-containing end-of-use products and wastes, cement factories and the non-ferrous metals processing are the main sources of mercury pollution that directly release mercury into local soils, water bodies, and ground water, which leads to mercury-contaminated sites.

The origin of mercury in waste and waste water produced in the country is mercury in products and materials. Waste fractions and waste water do therefore not represent original mercury inputs to society (except imported waste). Waste and waste water may however represent substantial flows of mercury through society. The controlled landfills and informal dumping of general waste were found to be the major flows of mercury in waste.

The informal dumping of urban waste is the first contributor of mercury release to land and the second contributor of mercury release to air and water; Less than 2/3 (67%) of the general waste is collected and deposited on landfills and incinerated in Albania.

Related to the known contaminated sites, the former chlor-alkali and PVC plant in Vlora (known as the Soda PVC plant) is the most significant source of mercury contamination in Vlora Bay. The plant started operation in 1967 and used a mercury cell process to produce caustic soda and PVC. At its peak, the plant produced 24,000 metric tons of calcinate soda, 15,000 metric tons of caustic soda, and 10,000 metric tons of PVC. Soda PVC Plant discharged its waste directly into Vlora Bay and also dumped polluted sludge on a site near the seashore. The plant was closed in 1992 and its buildings have been completely destroyed since that time. However, the dumped sludge remains near the shore with no precautions taken to prevent further contamination of the Bay or nearby residents. In 2002, an identification mission of UNEP/MAP (GEF Project GF/ME/6030-00-08) identified this area as a “hot spot” after a soil sample found mercury levels greater than 10,000 ppm in the area of the former plant - 1,000 times greater than typical E.U. thresholds.

The former Soda PVC plant in Vlora was cleaned partly by a Dutch-funded project (data not available to the public) that was completed in 2011 and the contaminated site waste has been collected at the “Hazardous Waste Landfill of Ex-Soda PVC Plant”, on a surface of 15,000 m<sup>2</sup>, which is monitored, stored and maintained by MEI (Ministry of Energy and Industry) subsidiary in liquidation. The Ex-Soda PVC Plant Landfill Monitoring Reports are submitted every 4 months to the NEA (National

Environmental Agency) from the former Enterprise/Liquidation Plant of nitrogen Fertilizers, Fier, which is charged by MEI to monitor and store the Landfill of Vlora.

The area of the Ex-Soda Plant in Vlora is therefore considered as rehabilitated from the governmental institutions but there is no monitoring by the NEA regarding the situation after rehabilitation. Capacities at NEA are low both technically and financially. The Regional Health Directorate in Vlora does not have the appropriate technical and human capacity to monitor mercury or its health effects in the population of the EX-Soda PVC Plant area. EDEN Center has been working since 2011 in that area within some projects financially supported by IPEN (mostly of the projects consisted in the studies for the mercury levels in fish and inhabitants. The results of the studies showed that pollution is still consistent in that area.<sup>2</sup>

### 3. Levels of mercury pollution and sources in Albania:

Based on the “Toolkit for Identification and Quantification of Mercury Releases - Level 1”, the results of the mercury inventory<sup>3</sup> (developed in 2017) for the reference year 2016, shows that the total releases of the mercury **to society** from all source groups, are 4150 Kg Hg/y; of which 78.5 % are from mercury intentionally used in products such as thermometers, blood pressure gauges, fluorescent light bulbs etc.

The **following source groups** contribute to the major mercury inputs (except waste and waste water categories):

1. **Use and disposal of other products** (3,259.0 kg Hg/y) (78.5%)
2. Other materials production (242.6 kg Hg/y)

The individual mercury release **sub-categories contributing** with the highest mercury inputs were:

- **Thermometers (2,588 kg Hg/y)**
- Electrical switches and relays with mercury (403 kg Hg/y)
- Cement production (243 kg Hg/y)
- Other laboratory and medical equipment with mercury (115kg Hg/y)
- Batteries with mercury (94 kg Hg/y)

1. **In total, 1240 kg of mercury is released to air** in Albania on an annual basis. The mercury release sub-categories contributing with the highest mercury releases to the atmosphere were:

- **Thermometers (517.7 kg Hg/y)**
- Informal dumping of general waste (362.5 kg Hg/y)
- Cement production (182.0 kg Hg/y)
- Electrical switches and relays with mercury (120.8 kg Hg/y)

2. **In total, 1200 kg of mercury is released to water** in Albania on an annual basis. The mercury release sub-categories contributing with the highest mercury releases to the water were:

- **Thermometers (776.5 kg Hg/y)**

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<sup>2</sup> Please refer to question 1 for the data of the studies.

<sup>3</sup> Minamata Initial Assessment in Albania Chapter 2: Inventory of mercury releases in Albania

- Informal dumping of general waste (362.5 kg Hg/y)
  - Other laboratory and medical equipment with mercury (38.0 kg Hg/y)
3. **In total, 770 kg of mercury is released to land** in Albania on an annual basis. The mercury release subcategories contributing with the highest mercury releases to the land were:
- Informal dumping of general waste, mercury-containing thermometers, electrical switches and relays with mercury and cemeteries.
4. The total **mercury flow to general waste** accounted for 1010 kg Hg/y. The use and disposal of mercury-containing products were found to be the major flows of mercury in waste and waste water. The major contributing sub-categories to releases to the general waste were:
- **Thermometers** (776.5 kg Hg/y)
  - Electrical switches and relays with mercury (120.8 kg Hg/y)
  - Batteries with mercury (46.8 kg Hg/y)
  - Other laboratory and medical equipment with mercury (38.0 kg Hg/y)

The origin of mercury in waste and waste water produced in the country is **mercury in products and materials**. Reducing mercury in products is the most effective means to decrease the emissions into various media, particularly from the mercury containing waste streams.

Approximate amount of mercury used in amalgam fillings in Albania for 2016 was calculated to be 42 kg.

#### 4. Imports and exports:

Data provided from Albanian Customs for these sub-categories pointed out the following information<sup>4</sup>:

- the presence/usage of medical thermometers with mercury, air, laboratory, dairy;
- the presence/usage of electrical switches and relays;
- the presence/usage of light sources with mercury such as fluorescent tubes (double end); compact fluorescent lamp (CFL single end) etc.; and
- the presence/usage of batteries with mercury

Some gaps were found for the import data from the mercury inventory:

- It was not possible to get information related to the quantity of some mercury containing products imported to Albania, i.e. electrical and electronic switches, laboratory chemicals, paints. There is no specific HS Customs Code for these mercury containing products. This is principally because Customs use these codes to calculate tariffs, not for inventory of items entering the country. For paints, manufacturers use trade names and often do not indicate the level of mercury. Better estimation methods are necessary;

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<sup>4</sup> Minamata Initial Assessment in Albania Chapter 2: Inventory of mercury releases in Albania

- There is a lack of chemical composition data for imported cosmetics, soaps and pharmaceutical products (except vaccines), as well as for imported laboratory mercury chemicals. The input approximations according the population can be improved in a near future;

Some legal provisions related to im-/export of mercury and some mercury compounds are already covered (i) by the Law No. 10 277, dated 13.05.2010 on the accession of the Republic of Albania to the Rotterdam Convention “On the procedure of prior informed consent for some hazardous chemicals and plant protection products in international trade” (ii) Law on Chemicals Management No. 27/2016 that sets the legal framework for the implementation of international conventions in this domain and (iii) DCM Nr. 665, dated 21.09.2016 on im-/export of hazardous chemicals.

The recommendation regarding the import data are as below:

- Adoption of the DCM “On rules for banning the export of metallic mercury, compounds and certain mercury mixtures, safe storage of metallic mercury and specific criteria for the storage of metallic mercury and its compound/mixtures, considered as waste
- Improving imports data collection from customers, by developing a sub classification within the HS code to capture subcategories of the various products listed;
- The cosmetic sector needs to be better regulated in terms of imports and targeting products that may contain harmful substances including mercury;

There are no existing or new mercury mining or stocks of mercury or mercury compounds exceeding 50 metric tons (MT), and mercury supply generating stocks exceeding 10 MT/yr in Albania (confirmed by mercury inventory)

## **5. Mercury added products in the market:**

There are several source sub-categories addressed in the UNEP Toolkit regarding consumer products with intentional use of mercury, such as: thermometers with mercury, electronic switches and relays with mercury, light sources with mercury, batteries containing mercury, polyurethane produced with mercury catalyst, paints, cosmetics and related products.

**Mercury thermometers** have a wide use for educational and medical purposes (fever thermometers, chemical experiments, water and acid baths, blood banks, etc.), as well as for industrial purposes (heating and cooling equipments, chemical tanks and vats, bakeries, candy making etc.). According to Customs data 338,871 units of mercury thermometers are imported in Albania in 2016, from which, 134,380 units were medical Hg thermometers and 204,491 were other glass Hg thermometers (air, laboratory etc.).

This sub-category is the largest contributor of mercury input to the environment (2,589 kg Hg/y). As reported in Table 14, the major part of this mercury was

released to water and waste (776.5kg Hg/y). Mercury releases in air and land were respectively 517.7 kg/y and 517.5kg/y.

**Electrical switches and relays.** The mercury is used in electrical switches and relays, because of its electrical conductivity, low volatility, and fluid properties over a large temperature range. Because of the lack of information on the distribution of mercury switches and relays in Albania, the mercury input and release from this sub-category was quantified using the default method of the Toolkit Level 1. The mercury input calculated was 403 kg/y which indicates a degree of over estimation. The major part of the mercury was released to land;

**Light sources with mercury.** According to data provided by Customs 1,345,448 pieces of mercury containing lights were imported in Albania in 2016. Of this total, 158,534 pieces were fluorescent tubes (double end); 1,152,518 pieces were compact fluorescent lamps (CFL single end) and 34,396 pieces belong to the sub-category "other Hg-containing light sources".

**Batteries with mercury.** According to data provided from Customs, nearly 33 tons batteries for power radios, laptop computers, toys, and portable power tools were imported in Albania. According to the UNEP Toolkit 1 calculations, the estimated Hg input for this sub-category was 94 kg Hg/y. The major contributors in this group are zinc-air, alkaline and silver-oxide button cells (89kg/y), followed by plain cylindrical alkaline and permanganate batteries (5kg/y). The amount of mercury released to waste (46.8 kg Hg/y) was two times higher than the amount of mercury released to air or land.

**Dental amalgam fillings.** Mercury dental amalgam fillings are still in use in Albania. Because of a unique HS Custom Code for all amalgam fillings, was not use for this sub-category the data provided from Customs. The inventory was based on the questionnaires completed by dental clinics and amalgam suppliers. The information for mercury amalgam fillings was taken from dental clinics established in different geographical areas in Albania, as well as in the capital, Tirana. The approximate amount of mercury used in amalgam fillings in Albania for 2016 was calculated to be 42 kg Hg/y. The output releases of mercury under this sub-category are calculated using output distribution default factors of Toolkit 2.

**Manometers with mercury.** According to the information taken from laboratory questionnaires received from universities and research institutions, the number of manometers with mercury is very low. Additionally, gross suppliers that import chemicals, equipment, and medical devices have declared that the number of imported manometers with mercury is extremely small, or zero. The calculation of mercury input for this sub-category in Toolkit 1 was done according to the number of inhabitants in Albania and was estimated to be 14 kg Hg/y;

**Paints/pigments.** According to Albanian Customs data, 78,135 kg of pigments were imported in 2015 and 68,865 kg in 2016. Due to the lack of chemical specifications in imported items, the inventory team took a survey in the market,



targeting major suppliers regarding the chemical composition of pigments. In the cases of pigments that declared the composition on their labels (Vivechrom, Seus Paint, STO), no mercury content was found. In other cases (Neon, Day Lux and Deutsch Color) there was no declared composition in the label, or there was no label at all (Rali Color, Xromodhomia, and Universal). No additional scientific research data were found on this issue;

**Skin lightening creams and soaps with mercury chemicals.** According to Albanian Customs data, the total amount of skin creams and soaps imported in Albania was 5,252,153 kg in 2015 and 5,757,261 kg in 2016, without any specification on their composition. To identify skin lightening creams and soaps containing mercury, the inventory team took a survey in the market. According to the investigation in major suppliers and cosmetic shops skin lightening creams and soaps didn't have mercury in their declared composition.

**Laboratory chemicals.** According to Customs information, a total amount of 26.2 kg of mercury chemicals was imported in 2015 without chemical specifications. Without chemical names, it was not possible to calculate the mercury amount. In 2016, no mercury chemicals were imported in Albania. From questionnaires addressed to Universities and Research Institutions, no mercury chemicals were ordered in 2015 and 2016. The input of mercury from this sub-category was 29kg/y and the majority of it would be released to the water and the waste;

**Mercury sphygmomanometers.** According to our surveys, mercury sphygmomanometers are no longer in use in hospitals, medical clinics, etc., so they have been phased out. Aneroid or electronic sphygmomanometers are widely used by professionals and for household use. According to Customs, 26,956 pieces were imported in 2015 and 51,060 pieces in 2016 in total, with no specifications. There is no information regarding the manner and locations where they are stored.

Generally, there is a lack of knowledge and awareness about the health and environmental problems of mercury in products. The source collection of waste streams is very poor.

Legislation related to integrated waste management has been prepared by the Ministry of Environment in compliance with the relevant EU directives. To date, there is no sub-legal act specifically designed for mercury waste management.

Some provisions related to the mercury containing electrical components and fluorescent lamps as well as the batteries, accumulators and their waste are in place from:

- DCM No. 957 of 19.12.2012 "On the waste of electrical and electronic equipment". These provisions are mostly related to the waste management of these components, including the proper labelling, and promote the replacement of heavy metals with suitable alternatives.
- DCM No 866 of 04.12.2012 "On batteries, accumulators and their waste". The decision aims to a) establish rules for the placing on the market of batteries

and accumulators; b) prohibit the placing on the market of batteries and accumulators containing hazardous substances; c) maximize the separate collection of waste batteries and accumulators; d) promote a high level of recycling; d) reduce the quantities of waste batteries and accumulators that destroyed together with mixed municipal waste;

According to the Law No. 27/2016 “On chemicals management”, it is predicted that specific criteria for the storage of metallic mercury considered as waste will be approved by the Council of Ministers.

There is no basic and complementary infrastructure for hazardous waste management in Albania for treatment and disposal of hazardous waste. Furthermore, there is no data on mass and currents of waste. Also, sites for the construction of facilities for hazardous waste management, or reception centres, have not yet been defined in any region or city/town of the country.

## **6. Human exposure to mercury:**

### **Most common forms of mercury exposure:**

- thermometers
- electrical switches
- cement production
- batteries w. mercury

The most endangered groups are: general waste handlers, dentists, schools, laboratory, personnel involved in mercury analysis, however, there is no programme or strategy for identifying populations at risk for mercury.

- The informal dumping of general waste is the first contributor of mercury release to land. The poor people living in these areas are highly exposed to mercury containing products such as battery leakages and other mercury – containing waste. The more exposed people are the Roma and Egyptian population;

-The Albanian legislation does not forbid the use of dental amalgams in dental clinics. which can be risky for patients and dental hygienists, and others working in dental clinics;

-The cement production is the sub- category which presents the third largest contributor to amount of mercury released in the atmosphere; People living in this area are the most at risk;

-Other high risk of mercury pollution is and subcategory of mercury thermometers which are widely used for educational and medical purposes;

-Albania has no gold mining or gold- treatment industry which is known as the highest exposure of workers to mercury.

## **7. Possible damage caused by mercury**

Although it is understood that a system for the continuing professional education of human resources in the health care system is needed, there are insufficient institutional and professional capacities for the prevention, diagnosis, treatment and monitoring of health risks related to the exposure of mercury and mercury compounds. For example:

- There is no program or strategy for identifying and protecting populations at risk from mercury in their diet;
- There is no educational program to prevent mercury exposure as a potential occupational hazard, and;
- No activity has been undertaken since 2010 to promote the prevention and treatment of potentially affected populations of Hg exposure.

#### 8. Storage:

- According to the Law No. 27/2016 of 17.03.2016 "On chemicals management", Rules for banning the export of metallic mercury, compounds and certain mercury mixtures, safe storage of metallic mercury and specific criteria for storage of metallic mercury considered as waste will be approved by the Council of Ministers with the proposal of the ministers responsible for the environment;
- So far no landfill for hazardous waste has yet been built in Albania. Some of this type of waste remains stored near the former production plants (often in poor conditions), some of it is exported and some is stored in an uncontrolled manner. A critical issue is the burden inherited from the previous industrial activities, including uncontrolled dumping of hazardous waste, pollution of the environment causing hotspots, and storage of unused, obsolete or prohibited chemicals.

#### 9. Mercury wastes:

The use and disposal of mercury-containing products were found to be the major flows of mercury in waste and waste water. Also, the informal dumping of general waste is the first contributor of mercury release to land and the second contributor of mercury release to air and water.

	activity rate/y	estimated Hg input, kg hg/y (standard estimate)	estimated Hg releases
incineration and open burning of medical waste	21	1	air: 0.5 Kg hg/y treatment/disposal: 0.1
controlled landfills/deposits	330,158	1.651	air: 16.5 water: 0.2
informal dumping of general waste	724,968	3,625	air: 3,625 water: 362.5 land: 2899.9

Meanwhile, according to the legal framework in force, all natural or legal persons who collect, transport and store hazardous waste should be provided with environmental permits provided for in Category III of Law No. 10081, of 23 February 2009 "On Licenses, Authorizations and Permits in the Republic of Albania", which define the health and safety rules for the transport of hazardous waste;

As local and foreign experts have emphasized in several reports, the main problem is not the lack of laws, or their quality. In other words, the most vital problems are related to the enforcement level, lack of sustainable institutional and operational plans, the financial bill and a clear separation of responsibilities amongst respective Central and Local Government Institutions.

Waste management in Albania is still a low political priority and this issue is one of the highest environmental priorities of the country. Also, this issue has been brought up in all the EC's Progress Reports of the last ten years for Albania.

The main problems, expressed in general terms, relate mainly to:

- Partial service coverage;
- Insufficient collection and removal of waste;
- Limited amount of waste deposited and treated at landfills;
- The presence of a large number of landfills (both authorised and unauthorized), which are not in line with the sanitary and engineering standards;
- Limited number and poor quality of waste collection and transport equipment;
- Lack of waste separation at source and low recycling rate;
- Lack of infrastructure for an integrated waste management;
- Poor implementation of the sector-based law in particular, and of bylaws, in general;
- Poor interaction and coordination of Central Government Structures with local government and other interested sectors.

#### **10. Recommendations, from a public interest, NGO perspective, on reducing and eliminating human sources of mercury in your country:**

Albania is party to the Rotterdam, Basel and Stockholm Conventions and signed the Minamata Convention on Mercury in 2014. This enables the country to benefit from the international experience and cooperation on environmentally sound management of chemicals and wastes.

Recently Albania has approximated to a great extent the EU chemicals legislation, including REACH Regulation and CLP legislation. The obligation of Albania for the approximation of the Albanian legislation on the environment with the EU derives from the Article 108 of the Stabilisation and Association Agreement between the European Union and Albania. The recently approved chemicals legislation is listed below:

- Law No. 27/2016 on chemicals management, of 17.03.2016;
- Decision of the Council of Ministers (DCM) No. 488 of 29.6.2016 "on the classification, labelling and packaging of chemicals;

- Decision of the Council of Ministers No. 489 of 29.6.2016 “on the approval of the list of substances of very high concern (SVHC) and of the criteria for the inclusion of the substances in the SVHC list, and of the issuing of a conditioned authorization for continuing the use of SVHCs;
- Decision of the Council of Ministers No. 665 of 21.9.2016 “on the export and import of hazardous chemicals”.

The current activities related to mercury that were support by GEF and UNDP within the Minamata Initial Assessment Project were aimed at: (i) preparing a platform to ratify the Minamata Convention on Mercury in Albania; and (ii) build national capacity to meet reporting and other obligations under the Convention.

The priority areas for successful implementation of the Minamata Convention on Mercury are derived from the major gaps in information identified during the institutional and legislative gap analyses and national mercury inventory. Albania will benefit from new and updated information about the mercury sources, magnitude of mercury, and how it cycles through the air, water, land and waste systems within the country, as well as building capacity in managing the risks of mercury. There exist potential synergies between the Minamata Convention and implementation plans of other chemicals conventions and it will be beneficial for future implementation efforts to take advantage of the overlapping needs of these conventions in order to enhance coordination of chemicals management efforts within the country.

Based on the findings *from the Mercury Inventory Report & Assessment of the legislation and of the capacities of main institutions for the implementation of Minamata Convention in Albania*, the Implementation Plan and Priority of Action (2018 -2022) has been developed.

The Implementation Plan considers five priority areas for action. Total budget, implementing responsibility and timeframe is shown in table below:

Priorities	Lead Institution	Anticipated budget (US\$)	Time Frame
1. Strengthening the policy, legal and institutional framework of mercury management;	MoTE <b>MoHSP</b>	185,000	2018-2022
2. Reducing the use of Mercury containing products and environmentally sound management of mercury waste;	MoTE MoHSP	650,000	2019-2021
3. Capacity building and awareness rising on mercury management;	MoTE <b>MoHSP</b>	180,000	2019-2020
4. Strengthening health sector engagement in the sound management of Mercury	MoTE <b>MoHSP</b>	350,000	2019-2022
5. Improving the inventory, monitoring and reporting of mercury releases from diffuse and point sources	MoTE <b>MoHSP</b>	450,000	2019-2022
<b>TOTAL</b>		<b>1,815,000</b>	

The detailed measures according to the above priorities are described in the Annex 2 of this report.

## Annex 1

Table 1. Summary of mercury inventory results

Source category	Estimated Hg input, Kg Hg/y	Estimated Hg releases, standard estimates, Kg Hg/y						
		Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatment/disposal	Total releases *3*4*5
Coal combustion and other coal use	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Other fossil fuel and biomass combustion	1.9	1.9	0.0	0.0	0.0	0.0	0.0	2
Oil and gas production	13.3	1.5	2.6	0.0	2.8	0.0	3.3	10
Primary metal production (excl. gold production by amalgamation)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Gold extraction with mercury amalgamation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Other materials production	242.6	182.0	0.0	0.0	60.7	0.0	0.0	243
Chlor-alkali production with mercury-cells	-	-	-	-	-	-	-	0
Other production of chemicals and polymers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Production of products with mercury content*1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Application, use and disposal of dental amalgam fillings	42.0	0.8	5.9	0.0	0.0	5.0	5.0	17.0
Use and disposal of other products	3,259.0	669.6	828.3	709.9	0.0	1,002.4	48.9	3,259
Production of recycled metals	11.3	3.7	0.0	3.8	0.0	3.7	0.0	11
Waste incineration and open waste burning*2	0.5	0.5	0.0	0.0	0.0	0.0	0.1	1
Waste deposition*2	1,650.8	16.5	0.2	0.0	-	-	-	17
Informal dumping of general waste *2*3	3,624.8	362.5	362.5	2,899.9	-	-	-	725
Waste water system/treatment *4	-	-	-	-	-	-	-	0
Crematoria and cemeteries	53.5	0.0	0.0	53.5	0.0	0.0	0.0	53
<b>TOTALS (rounded) *1*2*3*4*5</b>	<b>4,150</b>	<b>1,240</b>	<b>1,200</b>	<b>770</b>	<b>60</b>	<b>1,010</b>	<b>60</b>	<b>4,340</b>

\*1: To avoid double counting of mercury in products produced domestically and sold on the domestic market (including oil and gas), only the part of mercury inputs released from production are included in the input TOTAL.

\*2: To avoid double counting of mercury inputs from waste and products in the input TOTAL, only 10% of the mercury input to waste incineration, waste deposition and informal dumping is included in the total for mercury inputs. These 10% represent approximately the mercury input to waste from materials which were not quantified individually in Inventory Level 1 of this Toolkit. See Appendix 1 to the Inventory Level 1 Guideline for more explanation.

\*3: The estimated quantities include mercury in products which has also been accounted for under each product category. To avoid double counting, the release to land from informal dumping of general waste has been subtracted automatically in the TOTALS.

\*4: The estimated input and release to water include mercury amounts which have also been accounted for under each source category. To avoid double counting, input to, and release to water from, waste water system/treatment have been subtracted automatically in the TOTALS.

\*5: Total inputs do not necessarily equal total outputs due to corrections for double counting (see notes\*1-\*3) and because some mercury follows products/metal mercury which are not sold in the same country or in the same year.

## Annex 2

Priority 1: Strengthening the policy, legal and institutional framework of mercury management			
Proposed Actions/Activities:	Lead Institution	Anticipated budget (US\$)	Time Frame
1.1 Adoption by the Parliament of Law on the ratification of Minamata Convention on mercury	MoTE MoEFA	5,000	By the end of 2018 (ongoing)
1.2 Adoption of the DCM "On rules for banning the export of metallic mercury, compounds and certain mercury mixtures, safe storage of metallic mercury and specific criteria for the storage of metallic mercury and its compound/mixtures, considered as waste"	MoTE	10,000	2019-2020
1.3 Adoption of the DCM "On the restrictions of the manufacture, placing on the market and use of certain hazardous chemicals and articles"	MoTE MoHSP	10,000	2019
1.4 Adoption of DCM "On rules for the assessment criteria and the authorization procedure for biocide products" pursuant to art 8 of law 95/2015.	MoHSP	10,000	2019-2020
1.5 Adoption the DCM "On List of prohibited or restricted substances for cosmetic products" pursuant to article 13 of the law 27/2016 on cosmetics products	MoHSP	10,000	2019-2020
1.6 Develop national standards/guidelines with reference to environmentally sound management of Mercury containing wastes, as stipulated in the Convention;	MoTE	15,000	2021
1.7 Develop national guidelines on the handling of mercury and mercury compounds during use, spillage as well as environmentally sound disposal	MoTE MoHSP	15,000	2021
<ul style="list-style-type: none"> <li>- 1.8 Adoption of the DCM "On approval the National Plan on Safety Management of Chemicals and Contaminated Sites", pursuant to the article 26 of The Law on Chemicals Management No. 27/2016. Among others this plan will set out the measures: <ul style="list-style-type: none"> <li>- to control releases (to air, land and water) of Mercury from the relevant point sources and expected targets, goals and outcomes; (Art 8) (Art 9)</li> <li>- Introduce emission limit values for controlling, where feasible, reducing the emissions from the relevant point sources (Art 8)</li> <li>- on identifying and assessing</li> </ul> </li> </ul>	MoTE MoHSP	100,000	2020

contaminated sites from mercury and its compounds and related risk management. <ul style="list-style-type: none"> <li>- to phase out the priority mercury containing products, including budgets, investment plans, and indication of funding opportunities.</li> <li>- to phase-down/phase-out of dental amalgam</li> </ul>			
1.9 Adoption of the DCM “On rules of organization and functioning of the Chemicals Office” pursuant to the article 6 of law no. 27/2016 “On chemicals management”.	MoTE	5,000	2019
1.10 Adoption of Prime Minister Order “On the functions, composition, rules and procedures for the functioning of the Inter-Sectoral Committee on Chemical Safety	MoTE	5,000	2019
Subtotal priority		185,000	

### Priority 2: Reducing the use of mercury containing products and sound management of mercury waste

Proposed Actions/Activities:	Lead Institution	Anticipated budget (US\$)	Time Frame
2.1 Conduct studies on preferences of staff/general public for cost-effective Hg-free alternatives and share the results.	MoTE MoIE	50,000	2020
2.2 Develop a feasibility study for (i) phasing-out of thermometers, sphygomanometers and antiseptics and skin-lightening cosmetics that contain mercury (ii) phasing down the use of dental amalgam;	MoTE MoHSP MoFE GDC	100,000	2020-2021
2.3 Develop a feasibility study on phasing out some types of mercury containing products and make available to public institutions of mercury-free or low mercury content cost-effective alternatives. <ul style="list-style-type: none"> <li>- substitution of the measuring equipment and apparatus in energy sector</li> <li>- changing the compact fluorescent lamps (CFLs) within the educational institutions to LED</li> </ul> changing the street lightning from mercury containing light sources to the other non-mercury alternatives	MoTE MoHSP	200,000	2020-2021
2.4 Develop a pilot project on promoting the use of best environmental practices BET in dental facilities, such as the use of dental amalgam only in encapsulated form and that dental facilities be equipped with amalgam separators to retain and collect mercury containing amalgam residues.	MoHSP IPH AADD MSI	150,000	2019-2020
2.5 Develop a feasibility study and developing project for identification and construction of a disposal site for hazardous waste chemicals	MoHSP	150,000	2019-2020



including mercury waste;			
Subtotal priority		650,000	

### Priority 3: Institutional capacity building and awareness rising on mercury management

Proposed Actions/Activities:	Lead Institution	Anticipated budget (US\$)	Time Frame
3.1 Conduct training on the management (generating, handling, clean-up, storage, disposal, treatment, transport) of elemental Mercury as well as Mercury containing products and wastes for institutions and entities responsible to Mercury Management; (Art 3)(Art 8)(Art 10)	MoTE MoIE MoHSP MARD	30,000	2019-2020
3.2 Conduct training for control authorities, customers, environmental inspectors and market surveillance inspectors on control for the import and export of mercury and mercury compounds (Art 3)	MoTE MoFE GDC	20,000	2019-2020
3.3 Develop and implement a training programme for the National Environment Agency and Environmental Inspectorate: <ul style="list-style-type: none"> <li>– on setting the environmental permit conditions of mercury emissions to the air, water or soil</li> <li>– emissions inventories and mercury emissions</li> <li>– controlling the emissions of mercury from industrial operators</li> </ul>	MoTE NEA SIEFW	30,000	2020
3.4 Conduct specific training on Mercury management for risk groups (e.g. waste handlers, dentists, schools, power generation sector, jewelry sector, mirror production, laboratory personnel involved in mercury analysis in products including food, etc.) (Art 10)	MoHSP IPH MoTE NEA	50,000	2019-2020
3.5 Conduct awareness rising among the larger public: <ul style="list-style-type: none"> <li>– on the human health and environmental effects of mercury and mercury compounds;</li> <li>– on the proper management of Mercury containing products and their wastes (e.g. thermometers, CFLs, tubes, batteries, etc.)(Art 8)(Art 10);</li> <li>– mercury in cosmetics; targeting local importers and users of cosmetics</li> </ul>	MoHSP MoTE	50,000	2019-2020
Subtotal priority		180,000	

### Priority 4: Strengthening health sector engagement in the sound management of mercury

Proposed Actions/Activities:	Lead Institution	Anticipated budget (US\$)	Time Frame
4.1 Develop and implement a programme/action plan to identify and protect	MoHSP IPH	10,000	2019-2020

populations at risk.			
4.2 Conduct a feasibility study and an action plan for establishing the institutional and professional capacities for prevention, diagnosis, treatment and monitoring of health risks associated with exposure to mercury and mercury compounds.	MoHSP IPH	30,000	2019-2020
4.3 Develop health guidelines on exposure reduction, setting targets for Hg exposure reduction and public education.	MoHSP IPH	20,000	2020
4.4 Conduct the health risks assessment and the health impacts for the inhabitants near cement factories, waste incinerators, non-ferrous melting industries and potential contaminated sites, associated with exposure to mercury and mercury compounds.	MoHSP IPH NEA	150,000	2020-2021
4.5 Conduct mercury monitoring in air, water, sediments (Vlora bay) and biota in the area of confined disposal facilities in former Soda – PVC plant in Vlora.	IPH NEA	50,000	2020-2021
4.6 Establish national targets aimed at preventing dental cavities and promoting health, minimizing the need for tooth restoration and minimize mercury exposure.	MoHSP IPH AADD	30,000	2022
4.7 Conduct regular bio-monitoring of high-risk groups (e.g. waste handlers, dentists, schools children, power generation sector, laboratory personnel involved in mercury analysis, etc.) and develop guidelines for protection of the each risky category;	IPH NEA FNS	50,000	2020
4.8 Develop and implement a training programme for State Health Inspectorate on the implementation of the new legal requirements on cosmetic and biocidal products.		10,000	2020
Subtotal priority		350,000	

#### Priority 5: Improving the monitoring and reporting of mercury releases from diffuse and point sources

Proposed Actions/Activities:	Lead Institution	Anticipated budget (US\$)	Time Frame
5.1 Update and improve the national inventory on mercury emissions and releases, through: <ul style="list-style-type: none"> <li>– Improving data collection on illegal dumpsites and waste open burning sites;</li> <li>– Improving imports data collection from customers, by developing a sub classification within the HS code to capture subcategories of the various products listed;</li> <li>– Developing a system to weigh the medical wastes that are incinerated and receive information on smaller incinerators located in the outer smaller islands;</li> <li>– Developing a system to capture charcoal</li> </ul>	MoTE NEA	50,000	2019-2020

production figures for permits issued; - Developing detailed information on cement production technologies and pollution control devices;			
5.2 Strengthening regular environmental monitoring and reporting requirements of point sources (e.g., landfill leachate, waste water treatment effluent, water bodies, air emissions of cement/incinerators/non-ferrous industry, etc.), associated with the specificity of mercury.	NEA SIEFW	10,000	2019-2020
5.3 Establish regular monitoring for determination of the MeHg content at seafood and other food items and develop guidelines such as: Smart Seafood Buying Guide	MoHSP IPH MoAgriculture	30,000	2020-2021
5.3 Develop BAT for the following industrial activities: – cement production – waste incineration – non-ferrous industry pursuant to the Article 5 of the law 10448/2011	MoHSP IPH	60,000	2019-2020
5.4 Create capacity of national laboratories and private sector organizations (in terms of human capacity as well as technology capacity) to enable the analysis of mercury concentrations in water, soil, air and biotic (e.g., fish) samples	MoTE NEA MoHSP IPH	150,000	2021-2022
5.5 Support the accreditation of laboratories carrying out mercury chemical analysis based on GLP international system	IPH NEA	150,000	2020-2021
<b>Subtotal priority</b>		<b>450,000</b>	

## Recommendations

In general, there is a lack of technical capabilities of mercury monitoring and testing in various environmental matrices and human exposure indicators.

- There is a need for accreditation of laboratories carrying out mercury chemical analyses.
- Strengthening cooperation and involvement of scientific institutions with competent authorities in mercury monitoring projects and make the data public.
- Raising awareness activities on mercury in general public and in particular in polluted areas.
- Introduction of information on mercury in educational curricula in schools in order to increase institutional and professional capacity.
- Strengthening capacities of Health Institutions in Albanian cities regarding the mercury pollution and monitoring.

- Drafting strategy for identifying and protecting populations at risk from mercury and programs to prevent occupational mercury exposure.
- Identification of mercury in products and labelling the products for its content in order to minimise the risk of exposure due to lack of knowledge for the presence of the mercury.

**Resources on mercury:**

[https://ipen.org/sites/default/files/documents/ipen-booklet-hg-update-v1\\_6-en-2-web.pdf](https://ipen.org/sites/default/files/documents/ipen-booklet-hg-update-v1_6-en-2-web.pdf)

<http://www.al.undp.org/content/dam/albania/docs/minimar%20%20en.pdf>

<https://ipen.org/sites/default/files/documents/IPEN%20Guidance%20on%20Mercury%20Contaminated%20Sites%20INC%207%202016.pdf>

<http://ipen.org/documents/guidance-identification-management-and-remediation-mercury-contaminated-sites>

<http://ipen.org/documents/ngo-introduction-mercury-pollution-and-minamata-convention-mercury>

“Children’s Exposure to Elemental Mercury: A National Review of Exposure Events,” the U.S. Agency for Toxic Substances and Disease Registry, February 2009,

Minamata Initial Assessment in Albania Chapter 2: Inventory of mercury releases in Albania, December 2017