Minamata Initial Assessment

For AZERBAIJAN

REPORT

Azerbaijan
2018

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ACRONYMS

WHO	World Health Organization
AAM	Anglo Asian Mining plc
AAM	Anglo Asian Mining
ADB	Asian Development Bank
AIMC	Azerbaijan International Mining Company
ANAS	Azerbaijan National Academy of Sciences
AR	Azerbaijan Republic
BAT	Best available technology
BEP	Best Environmental Practice
BP	British Petroleum
CFL	Compact Fluorescent Lamp
EU	European Union
JORC	Joint Ore Reserves Commitee
MENR	Ministry of Ecology and Natural Resources
MH	Ministry of Health
MM	Mass media
MoA	Ministry of Agriculture
MoE	Ministry of Economy
MoES	Ministry of Emergency Situations
MoJ	Ministry of Justice
MoT	Ministry of Taxes
MTCHT	Ministry of Transport, Communication and high Technologies
NGO	Non-Governmental Organization
NP	National Parks
PUR	Polyurethane
SCC	State Customs Committee
SOCAR	State Oil Company of Azerbaijan Republic
SSC	State Statistical Committee
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UV	Ultra-violet

FOREWORD

> The Azerbaijani state... protects... the nature of the country… Everyone has the right to live in a healthy environment… Protection of environment is the duty of every person.
>
> *(Constitution of the Republic of Azerbaijan)*

Mercury is one of the most dangerous eco-toxicants that adversely affect human health and the environment. Minamata tragedy, which took place in Japan's Minamata prefecture in the 1950's, was a clear example of mercury's harmful impact to human health and the environment.

The objective of the Minamata Convention is to establish the legal basis for the protection of human health from mercury and its compounds brought about by anthropogenic activities. The Document also obliges the Parties to the Minamata Convention to control or prohibit storage and processing of mercury and mercury compounds for the use in various processes, international trade of mercury, etc.

Negotiations on the preparation of Minamata Convention had started in 2010, then, after 3 years of negotiations the convention has been opened for signature on 9th October 2013d during the Meeiting in Minamata Prefecture of Japan. After the 50th country's ratification of the convention, it entered into the force on 16 August 2017. Currently, the Convention has been already signed by 128 countries and approved and ratified by 92 countries.

As with many international environmental agreements, provisions of this Convention envisage technical and financial assistance for developing countries in the implementation of initial steps for joining this convention. In the result of consultations hold during the Intergovernmental Negotiations Committee meeting on Mercury, the Global Environmental Facility (GEF) has been accepted as a driving force and financial mechanism for promoting the Minamata Convention.

Azerbaijan as a developing country is eligible for receiving funding, and therefore, the project "Minamata Initial Assessment for Azerbaijan" was funded by GEF. The project aims to strengthen national decision making towards ratification of the Minamata Convention and building capacity towards implementation of its provisions in the future.

The Project team, consisting of experts of the Ministry of Ecology and Natural Resources, the Ministry of Health, the Ministry of Education, the Committee on the Environment, Energy and Natural Resources of the Parliament, the National Academy of Sciences, and independent experts conducted a two-year research and prepared this study on "Minamata Initial Assessment for Azerbaijan" (MIA for Azerbaijan). During these two years the Team has conducted the research and prepared the following reports: i) inventory on mercury emission sources of the country; ii) national legislative/regulatory gap analysis; iii) analysis of an institutional framework to identify institutional and capacity needs of the country; iv) identification of risk groups and analysis of gender dimension of joining the Minamata Convention. Also, the awareness-raising publication materials were prepared, and disseminated among the target groups by broad advocacy campaigns at universities, schools, clinics and other public institutions.

The results of this study were presented also by the team members on the Conference of the Parties to Minamata Convention (COP) held in Geneva, Switzerland, on October 24-29, 2017, on conferences held in Moscow (Russia) and Astana (Kazakhstan), and numerous meetings within the country. We

hope, this study will play an important role in improving the situation with the environment and health care in Azerbaijan.

The Team members of Minamata Initial Assessment for Azerbaijan, are thankful to every organization and person that contributed to its preparation.

"Minamata Initial Assessment for Azerbaijan" Project Team

EXECUTIVE SUMMARY

The Minamata Convention on Mercury is the first global legally binding agreement specifically designed to address contamination from this heavy metal. The Minamata Convention is a global treaty to protect human health and the environment from the harmful effects of mercury by systematically controlling mercury emissions and releases, including phasing out the use of mercury in certain products and processes. The major highlights of the Convention include a ban on new mercury mines, the phase-out of existing ones, control measures on air emissions, and the international regulation of the informal sector for artisanal and small-scale gold mining.

Azerbaijan is not a signatory to the Minamata Convention but is carefully reviewing the Minamata Convention on Mercury and considering its ratification. As a potential next step in preparing the country for meeting future obligations under the Minamata Convention and to take early action towards reducing releases of mercury and safeguarding its population and environment, Azerbaijan indicated the need for preparing an inventory of mercury releases in the country.

The national inventory on mercury emission from various sectors has been conducted by the MIA consultants. With involvement of all relevant national stakeholders and entities involved in aspects of mercury management, an inventory was undertaken during the period December 2016 to November 2017. The objective of the inventory was to identify the main sources of mercury releases in the country. The results of this preliminary inventory are presented in this report and subsequently are expected to inform the development and adoption of a National Action Plan (NAP) on Mercury.

This inventory was conducted using the "UNEP Toolkit for Identification and Quantification of Mercury Releases Level 2" guidelines, except for a few sections, which used Level 1. Accordingly, 2015 input data was used, where available. The Toolkit is based on mass balances for each mercury release source type. Inventory Level 1 works with pre-determined factors used in the calculation of mercury inputs to society and releases, the so-called default input factors and default output distribution factors. These factors were derived from data on mercury inputs and releases from the relevant mercury source types from available literature and other relevant data sources. Throughout the Level 1 Inventory, certain mercury related data and information was obtained that was not required to complete the Level 1 inventory, however these data could prove useful for a future Level 2 Mercury inventory or specific mercury management related activities. With the objective of safeguarding this information and allowing easy access to it for interested parties and/or a future Level 2 inventory, it was recorded and incorporated into specific sections of the report.

I Results of the Mercury Inventory

Table 1. Summary of mercury inventory results

Source category	Estimated Hg input, Kg Hg/y	Estimated Hg releases, standard estimates, Kg Hg/y							Percent of total releases *3*4
		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	0%
Other fossil fuel and biomass combustion	107.9	101.5	0.0	0.0	0.0	0.0	6.4	108	1%
Oil and gas production	3,064.9	440.5	608.8	0.0	870.0	0.0	1,018.3	2,938	34%
Primary metal production (excl. gold production by amalgamation)	53.8	9.6	5.0	0.0	0.4	32.5	6.3	54	1%
Gold extraction with mercury amalgamation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0%
Other materials production*6	316.5	188.3	0.0	0.0	128.2	0.0	0.0	316	4%
Chlor-alkali production with mercury-cells	-	-	-	-	-	-	-	0	0%
Other production of chemicals and polymers	0.0	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	0%
Application, use and disposal of dental amalgam fillings	-	-	-	-	-	-	-	0	0%
Use and disposal of other products	2,468.9	634.9	278.0	652.7	0.0	736.6	166.8	2,469	29%
Production of recycled metals	5.5	1.8	0.0	1.9	0.0	1.8	0.0	6	0%
Waste incineration and open waste burning*2	952.4	726.2	0.0	0.0	0.0	0.0	226.2	952	11%
Waste deposition*2	162.0	1.6	0.0	0.0	0.0	0.0	0.0	2	0%
Informal dumping of general waste *2*3	1,300.0	130.0	130.0	1,040.0	0.0	0.0	0.0	260	3%
Waste water system/treatment *4	2,650.0	0.0	1,325.0	742.0	0.0	331.0	252.0	1,325	15%
Crematoria and cemeteries	137.5	0.0	0.0	137.5	0.0	0.0	0.0	138	2%
TOTALS (rounded) *1*2*3*4*5*6	**6,270**	**2,230**	**1,020**	**1,530**	**1,000**	**1,100**	**1,680**	**8,570**	**100%**

As presented in the following figures, the annual total estimated amount of Hg emitted and released in Azerbaijan is 6,270 kg. The main source of mercury release is oil and gas production, with annual estimation of 3,065 kg of Hg per year. The next main source is “use and disposal of other products” with 2,469 kg of Hg per year, followed by waste of Hg through air and water (Table1).

Amount of mercury emitted into air

In 2016, a total of 2,220 kg of mercury was emitted into the air in Azerbaijan. The primary contributions of mercury emissions and releases were from natural gas extraction (435kg), cement production (188.3 kg), incineration of electric switches and relays (412 kg), incineration of general waste, open fire waste burning, controlled landfills and informal dumping of general waste (858 kg). Therefore, reduction of mercury emissions into air requires improvements of environmental activities in these sectors. After the ratification of the Convention by the country, attention to these issues should be increased.

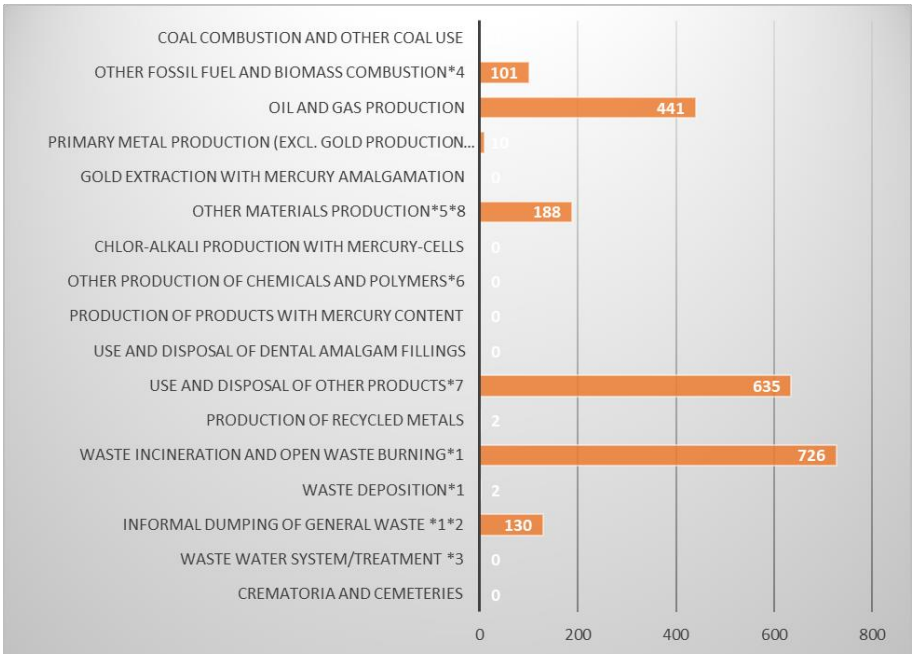


Figure 1. Estimated mercury releases to air (Kg Hg/y)

Discharge of mercury into water

The total estimated amount of mercury releases to water in Azerbaijan is 1,020 kg. The main sources of mercury-containing discharges are the extraction and processing of natural gas (580 kg), mercury-containing laboratory and medical equipment (129.5 kg), and informal dumping of household wastes (130 kg). A total of 1,325 kg of mercury is discharged into water by waste water treatment systems.

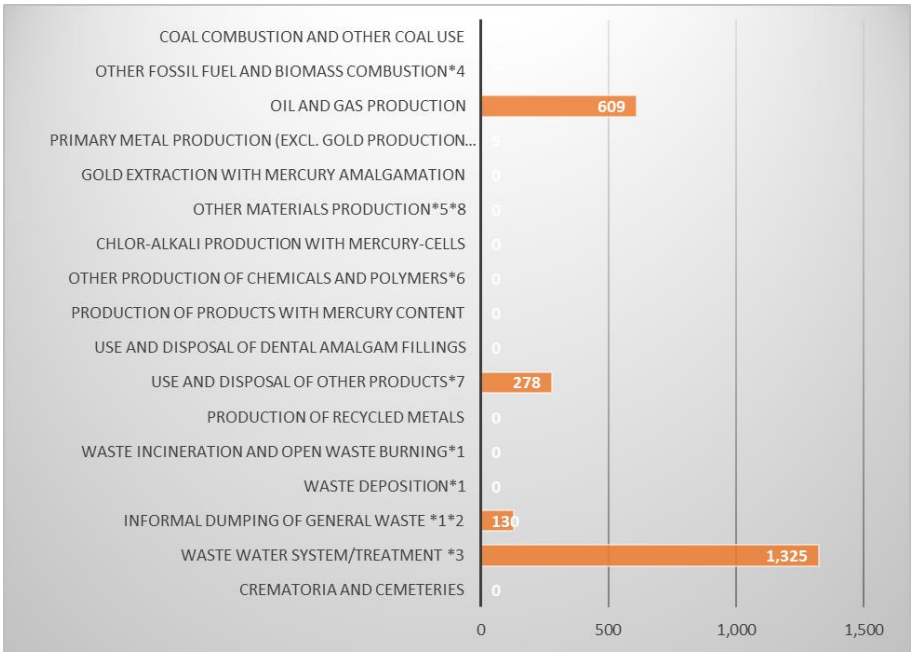


Figure 2. Estimated mercury releases to water (Kg Hg/y)

Mercury wastes in soil

An estimated annual total of 1,530 kg of mercury is released to soils in Azerbaijan. The main sources of these releases are mercury electric switches and relays (549.4 kg), informal dumping of general wastes (1,040 kg), waste water treatment (742 kg) and cemeteries (137.5 kg).

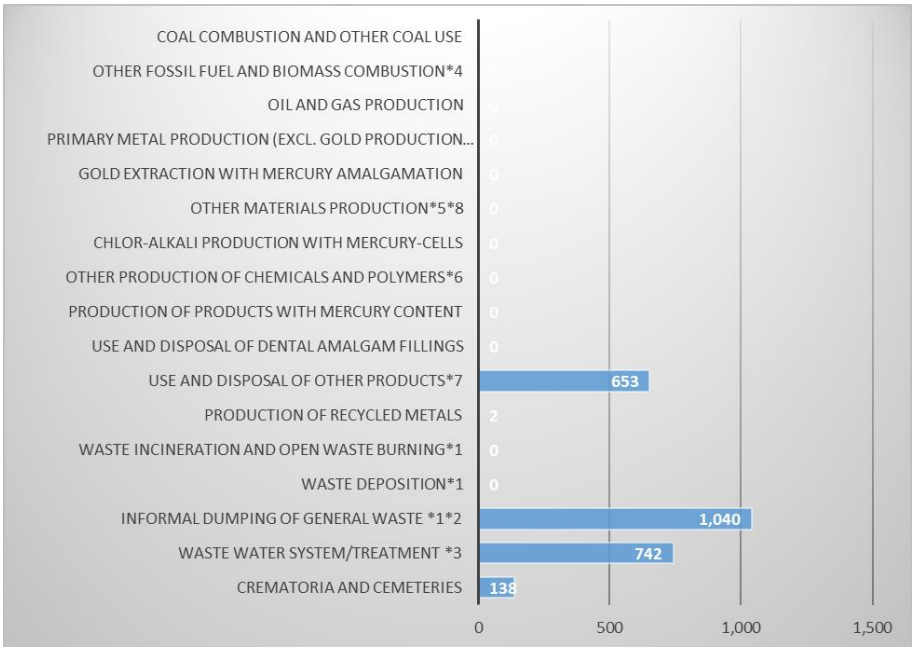


Figure 3. Estimated mercury releases to land (Kg Hg/y)

Separation of mercury with general wastes

The total estimated annual amount of mercury released to general waste in Azerbaijan is 1,100 kg. The main sources of mercury are from wastes are the results of alumina production from bauxite (32.5 kg), mercury-containing switches and relays (412 kg), thermometers (94.9 kg), laboratory and medical equipment (129.5 kg), and waste water treatment (331 kg). It should also be noted that about 400 tons of wastes that contain mercury from a former chlorine-alkaline plant is buried in a landfill according to EU Directives (Section 3.5).

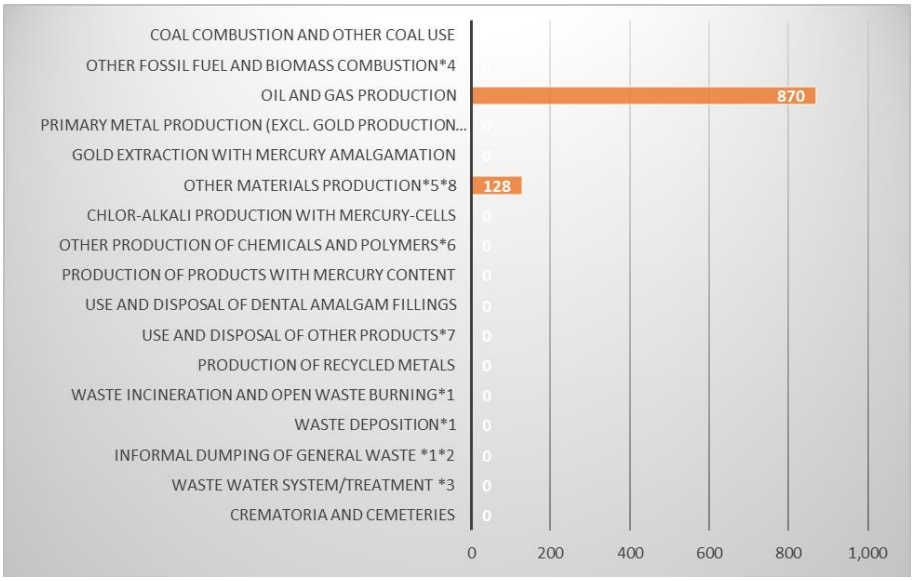


Figure 4. Estimated mercury outputs to by-products and impurities (Kg Hg/y)

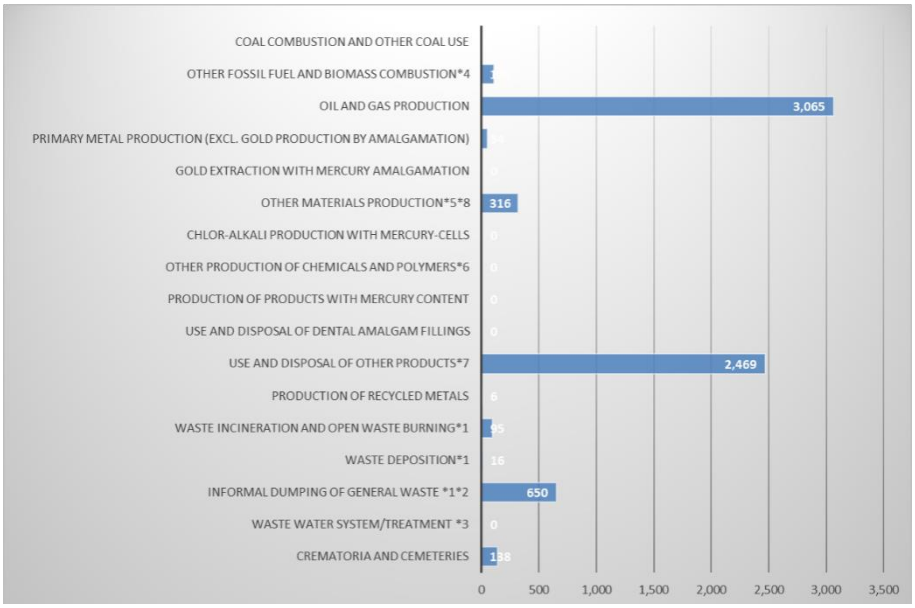
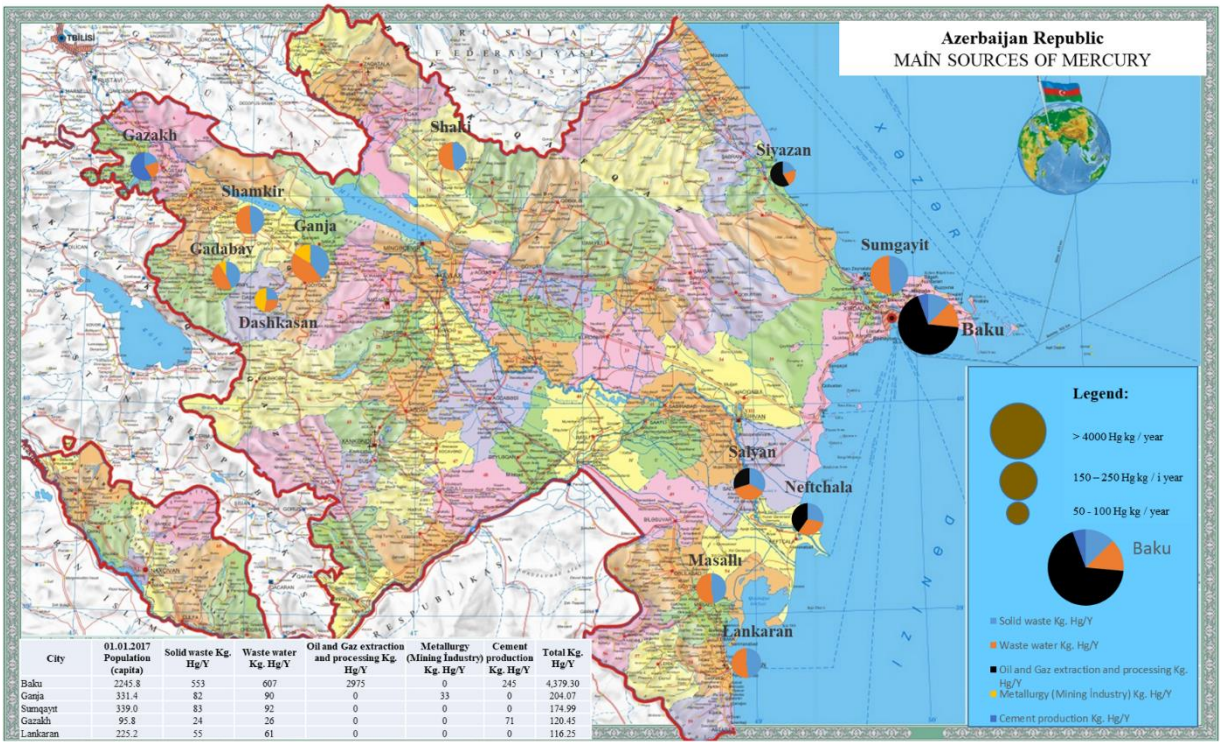


Figure 5. Estimated mercury inputs (Kg Hg/y)

Hotspot map: Main sources of Mercury in Azerbaijan Republic



City	01.01.2017 Population (capita)	Solid waste Kg. Hg/Y	Waste water Kg. Hg/Y	Oil and Gaz extraction and processing Kg. Hg/Y	Metallurgy (Mining İndustry) Kg. Hg/Y	Cement production Kg. Hg/Y	Total Kg. Hg/Y
Baku	2245.8	553	607	2975	0	245	4,379.30
Ganja	331.4	82	90	0	33	0	204.07
Sumqayıt	339.0	83	92	0	0	0	174.99
Gazakh	95.8	24	26	0	0	71	120.45
Lankaran	225.2	55	61	0	0	0	116.25

Figure 6. Hotspot map: Main sources of mercury

II Major Findings of the policy, regulatory and institutional assessments

For Azerbaijan, several articles of the Convention are not applicable and will not be included as part of the country's implementation plan, including: (1) supply/mining of mercury (Article 3), (2) manufacturing processes, such as production of non-ferrous metals and other processes (Article 5), and (3) artisanal and small-scale gold mining (Article 7). Besides those listed above, the other articles of the Convention are applicable in Azerbaijan. For the point source categories listed in Annex D of the Convention cement production and waste incineration facilities are relevant for Azerbaijan.

The assessment of the existing policy and regulatory framework resulted in the identification of the following gaps which require legislative and regulatory action:

- The need for legislation which covers additional exemptions in the legislation as defined by Part I of Annex A;
- The need for adoption of regulations fully aligned with the Minamata Convention, specifically related to a clear ban on all manufacturing processes defined in Part II of Annex B, including BATs and the prohibition of certain types of production etc.;
- The need for the monitoring to establish, maintain and regularly update an adequate inventory of mercury and mercury-compound emissions and releases;
- Respecting deadlines set out in laws to establish the funds for the National Implementation Plan for mercury to be purposely stipulated in the state budget;
- The absence of appropriate data collection and reporting system at central level (in particular- waste generation).

The assessment of the existing institutional framework resulted in identification of following gaps:

- Administrative capacity in ministries for regulating the chemical management issues is insufficient;
- Administration for inspection capacity is inadequate (in terms of professional qualifications and number of staff) and does not meet the actual needs for efficient inspection supervision in the area of chemicals;
- Capacity for inspection control of the legislation governing air emissions needs to be improved. This need is also clear for water monitoring, where there is a notable shortage of staff qualified for meeting the requirements relating to the collection and validation of data, as well as for quality assurance of data and reporting;
- Human resource capacity for implementation of the legislation governing air emissions is also insufficient for full implementation of the relevant legislation;
- For better understanding of needs for certain branches of industry, additional professional training of staff is needed;
- A centralized data collection system for the types and quantities of waste is not at a satisfactory level yet;
- Need for establishment of regular channels of cooperation with ministries in order to achieve knowledge transfer, as well as with nearby countries, on mercury and mercury compounds;
- Initiate establishment of regional working bodies with the task of improving mercury pollution reduction and the information exchange at the broader level.

III Potential priority areas for implementation of the Convention

1. Strengthening the legal framework	Timeframe
1.1 Amendments to Laws	**2018-2020**
1.2 Legislative ban on the import and export of products listed in Part I, Annex A of the Convention	**2018-2020**
1.3 Legislative ban on manufacturing processes using Hg	**2018-2020**
1.4 Obligation to collect and disseminate information on Hg emitted, released or disposed	**2018-2020**
1.5 Adoption of secondary legislation to regulate the issues related to the collection and processing of data on waste	**2018-2020**
1.6 Establishment of Eco-Fund	**2018-2020**
2. Enhancing institutional capacity for the management of mercury	**Timeframe**
2.1 Building capacities for implementation of Rotterdam Convention	2018-2020
2.2 Appointment of a body responsible for the receipt of information on emergency health response or establishment of a poison center	2018
2.3 Strengthening capacities of regulatory, implementing and enforcement institutions for implementation of chemicals management tasks, including monitoring, reporting, permitting etc.	2018-2020
2.4 Additional employment/diversification of tasks (introduction of specialized working place)	2018-2020
2.5 Training for Customs Officers and first responders	2018-2021
2.6 Sources of funding designated for capacity building activities of national state authorities to be defined and included in their annual budgets	annually
Sub total	
3. Improving research, monitoring and reporting	**Timeframe**
3.1 Establishment of regular channels of cooperation with state authorities of other Parties to achieve knowledge transfer	2018-2020
3.2 Take part in the work of regional working bodies with the task of improving mercury pollution reduction and information exchange at the broader level	2018-2020
3.3 Updating the national inventory on mercury release	2018-2020 every 2 years
3.4 Introduce the new section on mercury in the current draft of the Report on the state of the environment by the Agency for protection on nature and environment and annually update information. Use section of the Draft Report to prepare the first report to the Conference of Parties.	2018-2020 every 2 years

4. Education and awareness raising	Timeframe
4.1 Strengthen technical and internal communication, communication with representatives of government, institutions, agencies, and professional associations, meetings with representatives of industry, political parties, local self-governments, and professional organizations in order to obtain their support.	2018-2020
4.1.1 Development and implementation of awareness program for decision makers on the importance of ratification of the Minamata Convention	2018
4.1.2 Development and implementation of awareness program on the importance of ratification of the Minamata Convention among state and public employees and officers on national and local levels	2018
4.2 Establish communications with vulnerable groups, NGOs, media, business sectors and all citizens	2018
4.2.1 Arrange educational events and other methods of awareness raising to educate the general public on the dangers of exposure to mercury and mercury compounds	2018-2019
4.2.2 Distribution of relevant brochures in all health institutions especially private dentists and gynecology ambulances, as well as gynecology ambulances in primary health institutions and hospitals	2018
4.2.3 Round table with all relevant stakeholders/press release	2018
4.3 Establish the e-based presence to ensure the visibility, knowledge sharing, and regular updates of information	2018-2020
4.3.1 Establish IT based tools and visibility for mercury related issues/Minamata convention	2018
4.3.2 Ensure regular updates of the IT based tools-Newsletter/Fact Sheets/Info graphics uploaded on the websites of relevant Ministries and other parties included in the Convention implementation; media and social media presence – electronic (TV, portals, news agencies, radio) and printed (dailies), through press releases, public events, articles, interviews, participation in TV/radio shows and broadcasts etc.	2018-2020, continuously
4.3.3 Electronic materials, such as Guidelines on means and benefits on mercury, e-leaflets, e-brochures and info graphics (e.g., communication pieces relating scientific findings in lay language for public use) publicly available and regularly updated	2018-2020, continuously

INTRODUCTION

The protection of human health and the environment from the effects of hazardous chemicals and their wastes is a major challenge for every country in the world. No state is able to solve such global problems in its entirety separately. Consequently, international conventions and other Treaties that cover specific global environmental challenges are adopted. The Minamata Convention on Mercury is one such international legal instrument.

The United Nations has adopted four main conventions on chemical substances: 1) The Stockholm Convention on Persistent Organic Pollutants; 2) The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal 3) The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and 4) The Minamata Convention on Mercury. While Azerbaijan has ratified the two previous Treaties in 2001 and 2003, the most recent treaties have not been ratified yet. Apart from these four international conventions, the Republic of Azerbaijan also participates in the UNEP's Strategic Approach to International Chemicals Management (SAICM) initiative

Over the past 15 years, Azerbaijan adopted a number of legislative acts to regulate the codification, transposition, storage and neutralization of hazardous wastes, including mercury and its compounds. As requested in these legislative acts and associated documents, all mercury and mercury-containing ingredients and their wastes must be safely collected, transported to suitable landfills and neutralized therein. Azerbaijan has started implementing the mentioned normative legal acts for a number of years, created suitable landfills, ensured the collection of mercury wastes at those landfills, and completely halted mercury-containing chlorine-alkaline production.

The Ministry of Ecology and Natural Resources (MENR) provided oversight of the “Minamata Initial Assessment for Azerbaijan” project funded by the Global Environment Facility (GEF) and by the United Nations Development Program (UNDP). The mercury release inventory was made with the use of the "Toolkit for Identification and Quantification of Mercury Releases" made available by the Chemicals Branch of the United Nations Environment Programme (UNEP Chemicals). The Toolkit is available at UNEP Chemicals' website:

http://www.unep.org/hazardoussubstances/Mercury/MercuryPublications/GuidanceTrainingMaterialToolkits/MercuryToolkit/tabid/4566/language/en-US/Default.aspx

This inventory was developed on the Toolkit’s Inventory Level 1. The Toolkit is based on mass balances for each mercury release source type. Inventory Level 1 works with pre-determined factors used in the calculation of mercury inputs to society and releases, the so-called default input factors and default output distribution factors. These factors were derived from data on mercury inputs and releases from the relevant mercury source types from available literature and other relevant data sources.

This report, which is developed within the framework of the Project, will play an important role in educating and awareness-raising of the population regarding the impacts of hazardous chemicals, primarily mercury and mercury compounds on human health, the

environment, and ecosystems. Most of the activities in the project, especially conducting the mercury inventories, were implemented by MENR experts.



Figure 1. Shahdagh and ancient Gobustan

Chapter I: National Background Information

1.1 Population and Geography

Azerbaijan is situated in the Caucasus region of Eurasia. The country covers an area of 86.6 km^2, lying 400 km from the north to the south and 500 km from the west to the east and located at 38° and 42° north latitude, and 44° and 52° east longitude. The capital of the country Baku is located on 40° parallel. Azerbaijan is the largest state in the Caucasus region according to its territory and population. Azerbaijan is surrounded by the Caspian Sea (Lake) in the East, the Great Caucasus Mountains in the North, Minor Caucasus Mountains in the South-West, Talish Mountains in the South and large plains in the center of the country (Mil, Mughan, Shirvan).[1]

The country's largest rivers are Kura (906km - in Azerbaijan's territory) and Araz (680km). The Araz River confluences with the Kura river as the right tributary of the Kura River in the Kur-Araz Depression and flows into the Caspian Sea.

[1] https://en.wikipedia.org/wiki/Geography_of_Azerbaijan

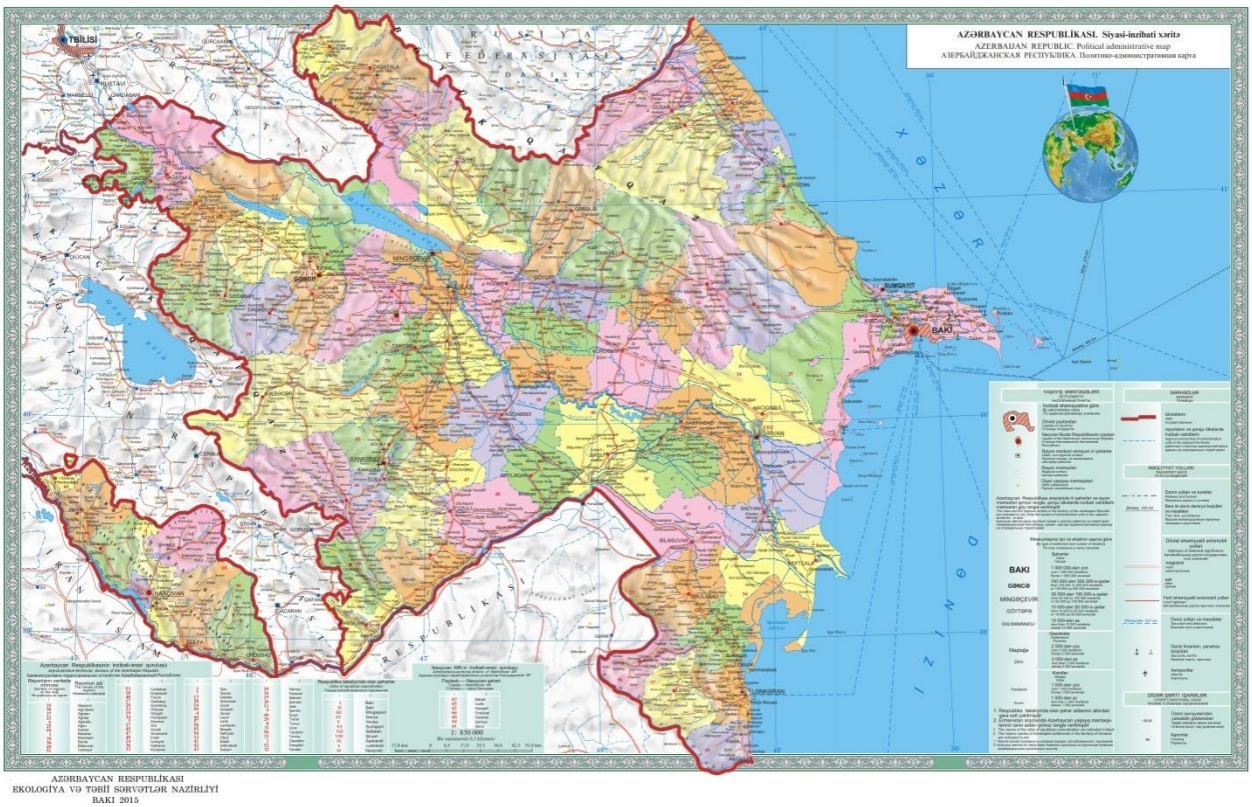


Figure 7. Azerbaijan Republic. Political Administrative Map

Located in the South Caucasus region, Azerbaijan has land borders with 5 countries: Russia (390 km) in the north, Georgia (480 km) in the north-west, Iran (765 km) and Turkey in the south (15 km) and Armenia in the west (1007 km). The total land border length of the country is about 2657 km. The eastern borders of the country are bounded by the Caspian Sea. The total length of the coastal lines of the Caspian Sea is 6380 km, of which 825 km is the coastline of Azerbaijan. The Caspian Sea is bordered with Russia, Kazakhstan, Turkmenistan, and Iran through the sector owned by it (78,000 km²). In 1988-1994, 20% of Azerbaijan's territory – the Mountainous Garabagh region and seven adjacent administrative districts of Azerbaijan was occupied by Armenia. As a result, the country's 1 million population have become refugees and are internally displaced.

The population of the country is 9,810,00 as of January 1, 2017. A total of 5,199,000 individuals or 53% of the population live in urban areas, 4,611,000 or 47% in rural areas. A total of 4,891,200 (49.9%) of the population are male and 4,918,800 (50.1%) are women. The average population density in the country is 112 people per square meter. Of the total population, 22.6 percent are 0-14 years old, 26 percent are 14-29 years old, 71 percent are 15-64 years old and 6.3 percent are 65 years old and older. The literacy rate of the population is 99.75 percent.

Azerbaijan is a tolerant country where people of different religions and nations live in peace and friendship.[2].

[2] http://www.azerbaijans.com/content_1703_en.html

Located at the biogeographic crossing point, the country combines European, Central Asian and Mediterranean biota. The Caucasus is one of the 25 biological hotspots characterized by a rich biological diversity in the world, and some of its species are protected by the CI.3.

In recent years, because of measures taken to protect biodiversity, the total area of specially protected natural areas has been increased 2 times in 2003 and reached 10.3 per cent of the country's territory (893,000 hectares). Due to forestation and forest regeneration measures implemented in the mentioned period, the forested area exceeded 1 million hectares, thus, increasing to 11.8 percent from 11.4 percent of the country's territory.

1.2 Political, legal and economic bases of the country

The Azerbaijani State is a democratic, secular, legal and unitary republic. The State power in the Republic of Azerbaijan is based on a principle of division of powers between the three independent but interconnected branches: legislative power, executive power and judicial power. The activity of each of them is regulated by the Constitution and relevant legislation.[4].

The legislative power in the country is carried out by a unicameral Parliament consisting of 125 members, called the Milli Majlis (the "National Assembly").

The Executive Power is represented by the President of the Republic of Azerbaijan, who is elected for a period of 7 years and who is regarded as the Head of the State, according to the Constitution.

Judicial power in the country is exercised by courts of the Azerbaijan Republic.

Azerbaijan is a state that is pursuing an active international policy and seeking to develop relations with all countries. The ongoing war with Armenia, which has occupied the lands of the country over the last 25 years, creates serious obstacles for comprehensive development. Therefore, the restoration of the territorial integrity of the country is a key standing issue in the state policy.

Azerbaijan actively cooperates with the United Nations, the Organization for Security and Cooperation in Europe, the Council of Europe, Non-Aligned Movement, the NATO Peace Partnership Platform, the World Bank, the International Monetary Fund, the Asian Development Bank, the European Bank for Reconstruction and Development, the Treaty on Conventional Armed Forces in Europe (CFE), The World Health Organization, and other international and regional organizations. It has close cooperation with the European Union in many areas, primarily in energy security. Azerbaijan has diplomatic relations with 158 countries around the world[5].

1.3 Economic Indicators

Over the last 13 years, Azerbaijan has achieved great economic development. There has been a three-fold increase in the Gross Domestic Product, 20 times in the state budget, three times in the volume of investments into the economy, including 5.6 times in the volume of investment in the non-oil sector.

[3] http://www.cepf.net/resources/hotspots/Europe-and-Central-Asia/Pages/Caucasus.aspx
[4] http://en.president.az/azerbaijan/constitution
[5] https://en.wikipedia.org/wiki/Foreign_relations_of_Azerbaijan

Azerbaijan ranks 65th in the Doing Business 2017 report. According to the report, the country is one of the 29 countries in the world that are carrying out three or more reforms.[6] In the last statement of the report, Azerbaijan ranks 5th for the Starting Business indicator in the world, and is ranked 1st among post-Soviet countries. The World Economic Forum's Global Competitiveness Index 2016-2017 - Azerbaijan ranks 37th out of 138 countries in this report. The country has been in first place among CIS countries for 8 years.[7]

The risks, uncertainties and other adverse processes in the world economy have also had a negative impact on the Azerbaijani economy. Although there was a decline in the country's economy in 2015 and 2016, the economy of Azerbaijan was able to sustain social and economic stability under new conditions. The main reason for these declines was a sharp drop in the price of oil in the world market, and the decline in the production of goods and services in the country's construction sector by more than 23 percent. Despite these difficulties, the production in the non-oil sector, which is the main sector of the economy, has increased by 5 percent and by 2.6 percent in agriculture in 2016.

In 2016, the Gross Domestic Product was 60.4 billion manat, with its per capita share equal to 6266 manat. A total of 37.2 percent of GDP was produced by industry, 10.6 percent by construction, 10.2 percent by trade, 6.8 percent by transport and warehousing, 5.6 percent by agriculture, 2.4 percent by tourism and public catering, and 1.8 percent by information and communication sectors. A total of 66 percent of the Gross Domestic Product was produced in the non-oil sector of the economy. In other words, current dependence of the Azerbaijani economy on oil has dropped to 34 percent. Revenues of the State Budget amounted to 17.5 billion manat, expenses - 17.74 billion manat.

In 2016, average monthly nominal wages in the country increased by 7 percent compared to 2015 and amounted to 498.6 manat. In 2016, the population's revenues increased by 8.7 percent in nominal terms and reached 45.4 billion manat, compared to the previous year. During 2002-2016, the poverty rate in the country decreased from 46.7 to 5.9 percent. In 2016, compared to the previous year, prices for consumer goods and services increased by 12.4 percent, including prices for food products – by 14.7 percent, non-food products – by 16.7 percent, and paid services to population – by 5.8 percent.

http://www.doingbusiness.org/reports/global-reports/doing-business-2017

[7] http://www3.weforum.org/docs/GCR2016-2017/05FullReport/TheGlobalCompetitivenessReport2016-2017_FINAL.pdf





Figure 8. Heydar Aliyev Center. Architect Zaha Hadid

1.3.1 Investments

In 2016, more than 15.5 billion manats from all financial sources was invested into the development of the country's economic and social spheres, or 22.2 percent less than in 2015. A total of 79.1% of the used funds were spent on construction of production facilities and 4.6% for construction of residential houses; 42.8 percent of the funds invested in fixed capital was funds generated internally; 32.5 percent of the total capital is accounted for the government and 67.5 percent for the non-government sector. A total of 55.5 percent of total investments were directed to the oil sector and 44.5 percent to the non-oil sector. Since 2007, 130.2 billion manat has been invested in the country's fixed capital. The amount of funds invested in fixed capital in 2016 was 1.8 times more than in 2016. The volume of capital investments from foreign sources in 2016 amounted to 9 billion manat, which is 57.2 percent of total investments.

1.3.2 Foreign trade

In 2016, foreign trade turnover of Azerbaijan, which has trade relations with 186 countries, amounted to $17.67 billion. A total of $9.14 billion or 51.7 percent of the trade turnover was the value of goods exported from the country, while $8.53 billion or 48.3 percent was the value of goods imported into the country, resulting in a positive balance of $610 million. A total of 35 percent of trade turnover, including 43.2 percent of exports, accounted for the EU countries, 16 percent of, including 7.3 percent of exports for the CIS member states, and 49.1 percent for other countries.

1.3.3 Industry

The Mining industry. Azerbaijan's mining industry mainly produces oil and natural gas. Although the number of employees working in this field is 1 percent of the total number of employees, the mining industry has an important share in the Gross Domestic Product and the State Budget revenues. In 2016, 41 million tons of oil and 29.3 billion cubic meters of natural gas were produced in the country. A total of 35 million tons of extracted oil and 8 billion cubic meters of natural gas were exported. The share of oil and natural gas in total exports is about 90%.

In 2016, 6 million tons of crude oil was processed in the country:77 percent of ready-made products was sold on the domestic market and 23 percent were exported. As a result of these

activities, processing of oil has increased to 89, 4%. A total of 3 billion cubic meters of natural gas was processed at the gas processing plant. In 2016, 98.3 thousand tons of polyethylene, 118,000 tons of methanol, 52,200 thousand tons of propylene, 9,000tons of isopropyl alcohol, 8,700 tons of paint and varnish products, 210 tons iodine, 1,000 tons detergents, 22,000 tons of plastic pipes and hoses, and other products was produced. Construction of the facility to produce carbamide (nitrogen fertilizer) is in the completion stage.

The mining industry is also distinguished by production of aluminum, copper, iron ore, gold, construction materials, coatings, and decorative stones for raw materials used in construction and road works.

Metallurgy. In 2016, the country produced 420.6 million manat of metallurgy and finished metal products, 33,300 tons of primary aluminium ingots, 27,800 tons of aluminium plates, 2,600 tons of cathode copper, 345,300 tons of cast steel, 235,000 tons of building bars in ferrous metallurgy.

In 2016, 2,102 kilograms of gold, 5,309 kilograms of silver, and 1,941 tons of copper were produced in the Gadabay gold ore field within the framework of the agreement on precious metals between Azerbaijan and a U.S. company. At present, the precious metal ore deposits are processed by applying the "Ball alkalization", "Agitation" and "Flotation" methods. In 2016, new "Gadir" and "Ugur" fields were discovered in the Contract Area and their production by underground method was started. The ore mass produced from "Gosha" field in Tovuz Distirct was processed at Gadabay Gold Ore Plant.

In 2015, a state-owned "AzerGold" company was established to exploit precious metal ore deposits in the country, and the right to use 6 precious and non-ferrous metal ore mines in the country was granted to this company. "AzerGold" has developed a five-year medium-term action plan on the activities to be conducted in the afore-mentioned mines and the fields. Based on this plan, the production of precious metal in the "Chovdar" Gold Mine started in 2017, and it is planned to exploit the Filizchay and Mazımchay fields of the Balakan District and the Goydağ ore fields located in Julfa District, in the following years.

Building materials (cement) manufacturing industry. The rapid development of the construction sector in the country has raised demand for construction materials in recent years. Presently, production of construction materials has become a major industrial complex and plays an important role in the non-oil sector of the country. Three major cement production companies in Azerbaijan - NORM Cement Plant, Holcim (Garadagh) Cement Plant and Gazakh Cement Plant, as well as small-scale cement production enterprises, have a capacity to produce 5 million tons of cement per year. In 2016, 2.32 million tons of cement (15% less than the previous year), 145,300 tons of gypsum cement, 27,400 tons of construction lime, 80,700 tons of concrete blocks and bricks, 201,000 cubic meters of construction bricks, and other products were manufactured and made available for the use in the country's construction sector.

Electric power industry. In 2016, 24.97 billion kilowatt-hours of electricity was generated across the country, with a 1.1% increase. A total of 91.2% of the power generation was made by thermal power plants, 7.8% by large hydroelectric power stations, and 1 percent by alternative and renewable energy sources. An important factor is that, the growth of power generation in the country's hydroelectric power stations was 19.4%. Specific consumption of conditional fuel for the production of 1 kilowatt-hour electric power at thermal-power plants decreased by 6.3 grams and amounted to 286 grams.

1.3.4 Agriculture

While the share of agriculture in GDP is about 6%, this sector of the economy is one of the areas with the majority of jobs. Approximately 40% of the working-age population works in this area. At present, about 20% of the country's land is used as cropland for agricultural crops. The introduction of new technologies, favorable climate and government support continue to open great perspectives for the development of the field. The agrarian sector, which is the main non-oil sector, remains as a very important economic activity area for Azerbaijan. Therefore, there is substantial state support for this sector.

Since 2001, all agricultural producers have been exempted from all taxes for 10 years, except for land tax. They are subsidized from the State Budget each year. Only in 2016, 181.5 million manat was allocated from the State Budget to motor fuel and oil used for the cultivation of sown areas, to wheat and paddy sowing, growing and the sale of seeds and seedlings, the sale of mineral fertilizers and pesticides on preferential terms, improvement of livestock breeding, increased production of animal origin, and the provision of agricultural and irrigation techniques to farmers on preferential terms. In 2016, the Gross Domestic Product in agriculture increased by 2.6%, including 2.8% in animal husbandry, and 2.5% in crop production.

In 2016, compared to 2015, 3,065,100 or 2.2% (65,700 tons) more harvest of autumn and summer cereals and grains was produced from 997,500 hectares. On average, the product harvested from each hectare amounted to 30.6 centnrs.

In 2016, 902,400 tons of potatoes, 1,270,600 tons of vegetables, 464,800 tons of melons and gourds, 882,800 tons of fruits and berries, 136,500 tons of grapes, 1,000 tons of green tea leaves, 312,600 tons of sugar beets, 16,700tons of sunflower for seed production, 3,600 tons of tobacco leaves, and 89,400 tons of cotton were harvested.

In 2016, 523,800 tons of meat, 2,010,000 tons of milk, 1,609,800 eggs, 16,700 thousand tons of wool and 70.8 tons of cocoons were produced.

1.3.5 Tourism

Azerbaijan is an exemplary tourist country distinguished by its hospitality. The number of tourists visiting the country is growing rapidly every year. The number of tourists was 435,000 in 2002, increasing to approximately 2 million in 2016.

In recent years, because of the liberalization of the visa regime by Azerbaijan, the interest of foreign citizens in the country has increased. At the same time, the country seeks to improve the state of natural and national resources through expanding the total area of specially protected natural areas, as well as by promoting its music and other folklore art patterns. A safe environment, efficient labor market, and positive medical and sanitary conditions are among the main factors attracting tourists to Azerbaijan. According to the World Economic Forum (WEF), the share of tourism in Azerbaijan's GDP is expected to increase from 3% to 7.5% by 2022[8]. Hosting the 1st European Games in 2015, the Formula 1 Grand Prix in 2016, the Eurovision Song Contest in 2012 and other international events in Baku has had a major impact on international recognition and image enhancement of Azerbaijan as a target for attracting tourists.

[8] http://www3.weforum.org/docs/WEF_TTCR_2017_web_0401.pdf

The World Tourism Organization has ranked Azerbaijan in 2nd place among the Eastern European countries on the rate of growth of tourism. In 2015, the profits of the tourism enterprises of the country increased three times compared to 2006.

1.3.6 The Transportation

By 2016, 222,200,000 tons of cargo and 1,930,000 passengers were transported by all enterprises and entities operating in this sector. Compared to previous year, the cargo transportation decreased by 0.1% and passenger transportation increased by 2%. A total of 63.6% of cargo was transported by vehicles, 26.8% by pipelines, 6.9% by railways, 2.6% by sea, and 0.1% by air. A total of 88.5% of passengers were transported by vehicles, 11.3% by metro and the rest by air and sea transport.

1.3.7 Information and Communication

The information and communication sectors are at the dynamic development stage. The development of this sector is strongly supported by the Government. The State Fund for Information Technology Development contributes to the development of the field by granting preferential loans and grants to entrepreneurs working in this field. In 2016, 72.4% of the services rendered by businesses to legal entities and physical persons in the amount of 1.6 billion manat belonged to the public sector. Compared to 2015, the volume of information and communication services increased by 4.5% in 2016, and 80.5% of the added value in this field fell to the non-state sector. According to 2016 statistics, the number of Internet users per 100 people was 76.[9].

Since 2013, Azerbaijan has its 1st Telecommunications Satellite (Azerspace 1)[10]. The satellite is capable of covering 1/3 of the Earth's surface. At present, the satellite serves the broadcasting of Turkish and Georgian TV channels along with Azerbaijan. In the near future, the country's 2nd Telecommunications Satellite is expected to be launched into orbit. Moreover, the law-orbited Azersky satellite provides satellite images to state bodies, other enterprises and organizations based on their orders. This satellite was also registered in the International Telecommunication Union.

1.3.8. Trade sector

In 2016, the retail trade network sold goods worth of AZN 30.2 billion to the population, and paid services worth of 7.8 billion manat were provided by service providers. Compared with the previous year, the commodity turnover increased by 1.5%, and the income from services rendered to the population decreased by 1.1%.

1.4. Environmental Protection

In the rapidly globalizing world, environmental protection, the rational use of natural resources and human health, sustainable development, the safe management of chemicals and other issues are important for Azerbaijan. One of the main directions of Azerbaijan's state policy in these areas is the maintenance of ecological balance and the protection of the environment.

[9] http://www.mincom.gov.az/charts-az-AZ/details/67/

[10] "Statistical Indicators of Azerbaijan", Official publication of the State Statistical Committee of the Republic of Azerbaijan, 2016, 2017)
Report on the activities of the Cabinet of Ministers of the Republic of Azerbaijan in 2016, 2017

Relevant state agencies in Azerbaijan provide the legal framework for these areas, the adoption and implementation of relevant programs, and national action plans.

Under the environmental provisions set out in the country's Constitution, laws and secondary legal normative acts regulating the environmental protection, the use of natural resources, human health, waste management and other such issues have been adopted. These laws are the Laws "On Environmental Protection" (1999), "On Ecological Safety" (1999), "On Atmospheric Air Protection" (2001), "On Public Radiation Safety" (1997), "On Technical Safety" (1999) , "On Phytosanitary Control" (2006), "On Production and Household Wastes" (1998), the "Land Code" (1999), the "Water Code" (1997), "On Sanitary and Epidemiological Well-Being" (1992), "On Protection of Health of the Population" (1997) and others.

Azerbaijan has also joined more than 35 international conventions on environmental protection, use of natural resources, and human health.



Figure 9. Girdimanchay

Table 2. List of Conventions to which Azerbaijan is a member

Convention	Ratification Date
Convention concerning the Protection of the World Cultural and Natural Heritage (16 November 1972)	06.12.1993
United Nations Framework Convention on Climate Change (Kyoto Protocol, 1992)	18.07.2000
Convention of the World Meteorological Organization	03.10.1993
Annex 3 to the Convention on International Civil Aviation on Aviation Metrology Guarantee	14.07.1992
Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington, March 3, 1973)	23.07.1998
Convention on Environmental Impact Assessment in a Transboundary Context (Espo, February 25, 1991)	01.02.1999

Convention	Ratification Date
Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 19 September 1979)	28.10.1999
The UN Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus, 25 June, 1998)	9.11.1999
Montreal Protocol on Substances that Deplete the Ozone Layer (15-17 September 1997)	18.07.2000
Convention on Biological Diversity (5 June 1992), Cartagena Protocol on Biosafety to Convention on Biological Diversity	23.03.2005
International Plant Protection Convention (Rome, 1951)	14.03.2000
United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes [Helsinki, 17 March 1992]	22.10.2002
UNESCO's Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar, 2 February 1971)	18.07.2000
United Nations Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (Basel, 22 March 1989)	16.02.2001
Convention on Long-Range Transboundary Air Pollution (Geneva, 13 November 1979)	09.04.2002
Stockholm Convention on Persistent Organic Pollutants (22 May 2001)	09.12.2003
Convention on Transboundary Effects of Industrial Accidents (Helsinki, 17 March 1992)	04.05.2004
Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran, 4 November 2003)	04.04.2006
European Landscape Convention (Florence, 20 October 2000)	

The conservation of natural resources and developing self-sustaining environmental practices has always been important for the Azerbaijan Government and economic development policies. One of the priorities of the National Development Strategy, implemented in the country, is to ensure at the highest level the environmental protection and the lives of people in healthy environment. Accordingly, the national and state programs adopted in the national and state programs identified the necessary goals for the implementation of the targets set for improving the ecological environment, and certain activities have been conducted in all areas of the environment, including the increase of vegetation, the development of forests, sustainable management of land, water resources, wastes, and biodiversity conservation, as well as many other interests.

In general, the ecological situation, natural resources, their protection and restoration have become an integral part of the country's sustainable development concept. Minimizing environmental pollution to ensure environmental safety, efficient use of natural resources to meet the needs of current and future generations, the achievement of renewable energy sources and energy efficiency, assessment of national needs for global environmental problems, identifying their solutions, and expansion of relations with international organizations are all key directions of Azerbaijan's environmental policy. These interests are reflected in the "Strategic Roadmaps for the National Economy and Major Sectors of the Economy"[11] and relevant state programs that are implemented currently in the country and cover the period up to 2025.

[11]http://www.e-qanun.az/framework/34254

During the implementation of environmental policies, relevant state agencies apply the principles of prevention of activities that can lead to irreversible environmental degradation, the use of low waste technologies, enhancing relations with international organizations and developed countries in the environmental sphere, enhancing environmental education and enlightenment, and public awareness.

As the result of recent activities, the introduction of new technologies and modernization works have been expanded to enhance the control over hydro-meteorological phenomena caused by climate changes, and the number of modern automated meteorological stations has increased to 68. This means full (100%) automation of hydrometeorology across the country. As the result of the modernization work in the hydrometeorology area, the level of validity of meteorological forecasts reached to 94-97 percent.

The analytical laboratories equipped with the most up-to-date instruments and equipment have been put into operation on transboundary rivers exposed to serious pollution in the territories of the neighboring countries. Through these laboratories, these water objects are monitored on a regular basis.

In Baku, a third-generation automatic plant complex has been set up to conduct continuous monitoring of atmospheric air pollution, and numerous automated devices for measuring radiation, noise, vibration, dust and gases have been used for this network. In Khizi District, a modern station for background monitoring of atmospheric air. A fully automated early radiological warning monitoring system for the radiation background in the transboundary areas was installed and the information received is transmitted to the relevant state agencies every half hour.

Azerbaijan pays special attention to the biodiversity conservation issues. Because of the measures implemented in this area, the total area of specially protected natural areas has increased two-fold in the last 15 years and reached 10.3% of the country's territory. It is planned to raise this figure to 13% in the coming years. Currently, 9 national parks, 11 state wildlife preserves and 24 state nature reserves are operating in specially protected natural areas covering 893,000 hectares of land. Today, the National Strategy for the Protection and Sustainable Use of Biodiversity in the Republic of Azerbaijan for 2017-2020 is being implemented in the country[12].

The mercury-containing waste generated in the process of the chlorine production at the **Sumgait** "**Surface-active** Substances" **plant** has been transported to the Hazardous Waste Landfill and neutralized there by the Ministry of Ecology and Natural Resources, "Azerkimya" State Agency, Ministry of Emergency Situations, which enforce the relevant provisions of the "Comprehensive Action Plan on Improvement of the Environmental Situation in the Republic of Azerbaijan" approved by the Presidential Decree, dated 28 September 2006. The Action Plan also includes measures to neutralize expired (obsolete) pesticides. As the result of these measures, pesticide residues were collected in the appropriate landfill for this purpose. At the same time, all these issues are reflected in the "State Program on Hazardous Waste Management in the Republic of Azerbaijan" (2004).

The development of agriculture, food production, pharmaceuticals, non-ferrous metallurgy, non-oil and gas and chemical industries, which are the main areas of the country's non-oil

[12]National Strategy for the Protection and Sustainable Use of Biodiversity in the Republic of Azerbaijan for 2017-2020

sector, in accordance with the Socio-Economic Development Concept of Azerbaijan for 2020 and the following period, is envisaged. An element of this is the establishment of a large Oil & Gas Processing and Petrochemical Complex near Baku, the waste recycling facilities, as well as the Sumgait Chemical Park. It is planned to produce mineral fertilizers and other chemical products in the chemical production plants to be built within these chemical complexes.

The State Program on the Improvement of the Environmental Situation and Use of Natural Resources in the Republic of Azerbaijan has been prepared to achieve the targets set out in the main areas of the environmental policy for the forthcoming five-year period, and was presented to the Government as the continuation of the Comprehensive Action Plan dated September 28, 2006. Dangerous chemicals, including mercury and mercury compounds, and waste management issues are also reflected in that document.

Chapter II: Inventory of mercury emission sources in Azerbaijan

The results of the national inventory for mercury emission sources in Azerbaijan in 2016 are presented in this section. The following sources were used as references:

- Statistical data of the State Statistical Committee of the Republic of Azerbaijan for 2016; when the information for the year which used in evaluation was not applicable, it has been adjusted based on the previous years' data,
- Reports on the use of mercury and mercury compounds, as well as the use of mercury-containing equipment in different sectors; output and management of wastes,
- Report of Ministry of Ecology and Natural Resources of the Republic of Azerbaijan by 2008-2013 (Vol. I-II),
- Certification on the use of mercury thermometers, manometers, amalgams and other preparations and equipment in the enterprises of the Ministry of Health of the Republic of Azerbaijan,
- Certification of State Phytosanitary Control Service at the Ministry of Agriculture of the Republic of Azerbaijan on the use of mercury pesticides,
- Report of UNDP on the improvement of the management of solid household wastes, and
- UN Comtrade International Statistics data base (www.comtrade.un.org).

Data was approximated in cases where private companies, including enterprises using cosmetics and utilizing wastes informally, do not have official reports. These data are shown in the relevant paragraphs.

2.1 Methodology

The inventory on the distribution of mercury releases in the environment was performed using the "Toolkit for Identification and Quantification of Mercury Releases" method by UNEP Chemicals. This method is presented in the following link:

http://www.unep.org/hazardoussubstances/Mercury/MercuryPublications/GuidanceTrainingMaterialToolkits/ MercuryToolkit/ tabid/ 4566/language/en-US/Default.aspx.

The inventory for Azerbaijan was prepared according to the Level II guidelines, except for the section pertaining to solid wastes (Section 3.2.6) and waste water (Section 3.2.7), which was prepared according to Level II (Table 1). The Toolkit methodologies are designed using the mass balance principle. This principle evaluates the inputs and output distribution pathways of

mercury used in various processes throughout the entire life cycle. Mercury values obtained for the output pathways characterize the amount of mercury released to air, soil, water and other (wastes, by-products, etc.) components. The processes of mercury distribution throughout its life cycle are described in the following diagram (figure 3):

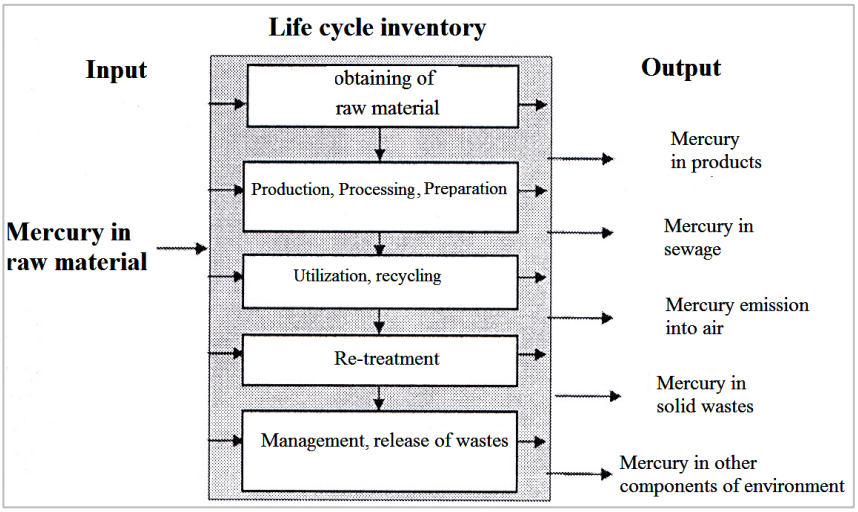


Figure 10. Process of distribution of mercury

The sequences illustrated in this diagram represent the general approach used in conducted the national inventory. Thus, all industry fields where mercury may exist were analyzed and quantitative evaluations were performed.

One of the obligations of the Minamata Convention is to evaluate the total impact of mercury on society through the effects on human health and the environment. The transformation, movement and distribution of mercury in the environment and biomagnification through the food chain in the form of organic compounds (methyl-mercury) is shown in Figure 4.

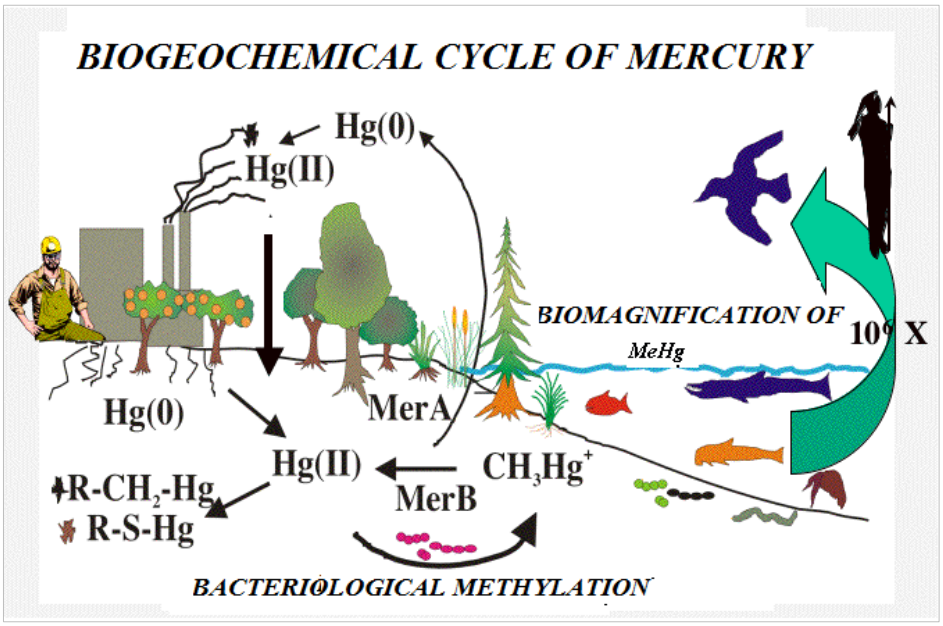


Figure 11. Diagram of mercury cycling and movement through food chains in the environment

According to the methodology, the estimate of mercury emissions to different compartments of the environment are presented in each section based on general mercury source types. The inventory of mercury has been conducted in 4 stages:

Stage 1: Use of a selection matrix to identify the main sources of mercury in the country;
Stage 2: Classify subcategories within the main categories to identify additional activities as potential sources of mercury;
Stage 3: Perform a quantitative inventory;
Stage 4: Collect standardized inventory information of mercury for the stages 1-3 (all national mercury sources were identified, and any data gaps were recorded).

When reviewing the formation of mercury, ton/year or kg/year rate of mercury was included into the system. If mercury is formed in a product, amount of mercury is measured with g/ton or g/kg or analogical density units and during a year amount of mercury is calculated with kg/year.

2.1.1 Distribution factor in phases

This mercury inventory, with a mass balance approach, examines the distribution of mercury to different phases in the environment, designated as output distribution factors, including: "air", "water", "soil" and "others". Additional output distribution categories listed as other are "products", "general waste", and "specific waste treatment sectors". The relative separation of mercury into the different output phases is shown as "output distribution factors".

Each output distribution factor can be amended with country-specific information gathered during the inventory process. These additions must be recorded. If there are sources of mercury in the National industry that they have not been listed within the inventory tables they should be included. In Azerbaijan, about 400 tons of wastes of suspended chlorine-alkali industry were placed in hazardous waste sites and these are discussed in Section 3.5. Mercury pesticides were also dumped at sites as pesticides that are no longer in use.

It should be noted that in Azerbaijan there are no scientific data for some mercury products and devices. Thus, codes used in the trade of various products and devices do not indicate the presence of mercury in many products. Improvement of these codes is one of the important steps that is needed from Minamata Convention provisions.

2.1.2 Calculated values for distribution of wastes in phases

In the tables, the distribution of wastes in phases is given with kg/year units. Values relevant to each phase for the production, use and waste are summed up and final value is presented in the last column. This value indicates the complete distribution of mercury. Total value of this column equals to the output value. In order to understand these data, the results of calculated inventory according to Mercury Inventory Toolkit Level I were added into the report.

2.2. Mercury sources

2.2.1 Summary on distribution, collection, supply and trade of mercury in Azerbaijan

In Azerbaijan the list of the main mercury sources is given in Table 1. Sources are indicated with "Yes" and "No". Notes are given only for the sources of the main categories. Toolkit Reference Report Category provides detailed information about other source categories.

Table 3. Types of distribution sources of mercury

Source Category*	Source Presence
Main category - Extraction and use of fuels/energy sources	
Extraction, refining and use of mineral oil	Yes
Extraction, refining and use of natural gas	Yes
Extraction and use of other fossil fuels	Yes
Biomass fired power and heat production	No
Geothermal power production	No
Main category - Consumer products with intentional use of mercury	
Thermometers with mercury	Yes
Electrical and electronic switches, contacts and relays with mercury	Yes
Light sources with mercury	Yes
Batteries containing mercury	Yes
Main category - Other intentional products/process uses	
Manometers and gauges	Yes
Laboratory chemicals and equipment	Yes
Mercury metal use in religious rituals and folklore medicine	No
Main category – Waste incineration	
Incineration of municipal/ general waste	Yes
Incineration of hazardous waste	Yes
Incineration of medical waste	Yes
Sewage sludge incineration	No
Informal waste burning	Yes
Main category - Waste deposition/landfilling and waste water treatment	
Controlled landfills/deposits	Yes
Diffuse deposition under some control	Yes
Informal dumping of general waste	Yes
Waste water system/treatment	Yes
Main category - Cremation and cemeteries	
Crematoria	No
Cemeteries	Yes

*All sources and subsources not listed are not present or relevant in Azerbaijan.

Table 4. Inventory level 1 - executive summary

Source category (Level I Toolkit was used except for sources identified as waste)	Estimated Hg input, Kg Hg/y	Estimated Hg releases, standard estimates, Kg Hg/y							Percent of total releases *3*4
		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	0%
Other fossil fuel and biomass combustion	107.9	101.5	0.0	0.0	0.0	0.0	6.4	108	1%
Oil and gas production	3,064.9	440.5	608.8	0.0	870.0	0.0	1,018.3	2,938	34%
Primary metal production (excl. gold production by amalgamation)	53.8	9.6	5.0	0.0	0.4	32.5	6.3	54	1%
Gold extraction with mercury amalgamation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0%
Other materials production*6	316.5	188.3	0.0	0.0	128.2	0.0	0.0	316	4%
Chlor-alkali production with mercury-cells	-	-	-	-	-	-	-	0	0%
Other production of chemicals and polymers	0.0	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	0%
Application, use and disposal of dental amalgam fillings	-	-	-	-	-	-	-	0	0%
Use and disposal of other products	2,468.9	634.9	278.0	652.7	0.0	736.6	166.8	2,469	29%
Production of recycled metals	5.5	1.8	0.0	1.9	0.0	1.8	0.0	6	0%
Waste incineration and open waste burning*	952.4	726.2	0.0	0.0	0.0	0.0	226.2	952	11%
Waste deposition*	162.0	1.6	0.0	0.0	0.0	0.0	0.0	2	0%
Informal dumping of general waste *2*3	1,300.0	130.0	130.0	1,040.0	0.0	0.0	0.0	260	3%
Waste water system/treatment *4	2,650.0	0.0	1,325.0	742.0	0.0	331.0	252.0	1,325	15%
Crematoria and cemeteries	137.5	0.0	0.0	137.5	0.0	0.0	0.0	138	2%
TOTALS (rounded) *1*2*3*4*5*6	**6,270**	**2,230**	**1,020**	**1,530**	**1,000**	**1,100**	**1,680**	**8,570**	**100%**

Notes:

**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 Level1 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.*

**6 To avoid double counting, fossil fuel mercury contributions to cement production was subtracted automatically in the TOTALS.*

2.2.2 Country Mercury Profile

Information using for inventory of mercury emission sources for Azerbaijan

Data of the population: year, reference	9,810,000 Data of the State Statistical Committee, 2015[13]
Gross domestic product (GDP) : year, reference	$35,141 billion US dollars Data of the State Statistical Committee, 2016
Main fields of economy	Oil-gas industry, agriculture, construction
Responsible person for inventory	Yashar Karimov
Name of organization	Ministry of Ecology and Natural Resources
Contact	Yashar Karimov
E-mail address	yashaoper@rambler.ru
Telefon	+99455 4553544
Fax	+994125394113
Website	http://eco.gov.az

2.2.3 Data and Inventory on Energy Consumption and Fuel Production

Using values from Table 4, mercury inputs from Energy Consumption and Fuel Production were calculated using Step 2-Energy in the UNEP Toolkit). According to the results, there is an estimated total of 3,174 kg mercury per year, and 542 kg of it is released into air, 608 kg to water. A total of 870 kg of mercury is released through by-products and impurities, and 1,024 kg of mercury is captured by filters and then is safely disposed as special disposal facilities.

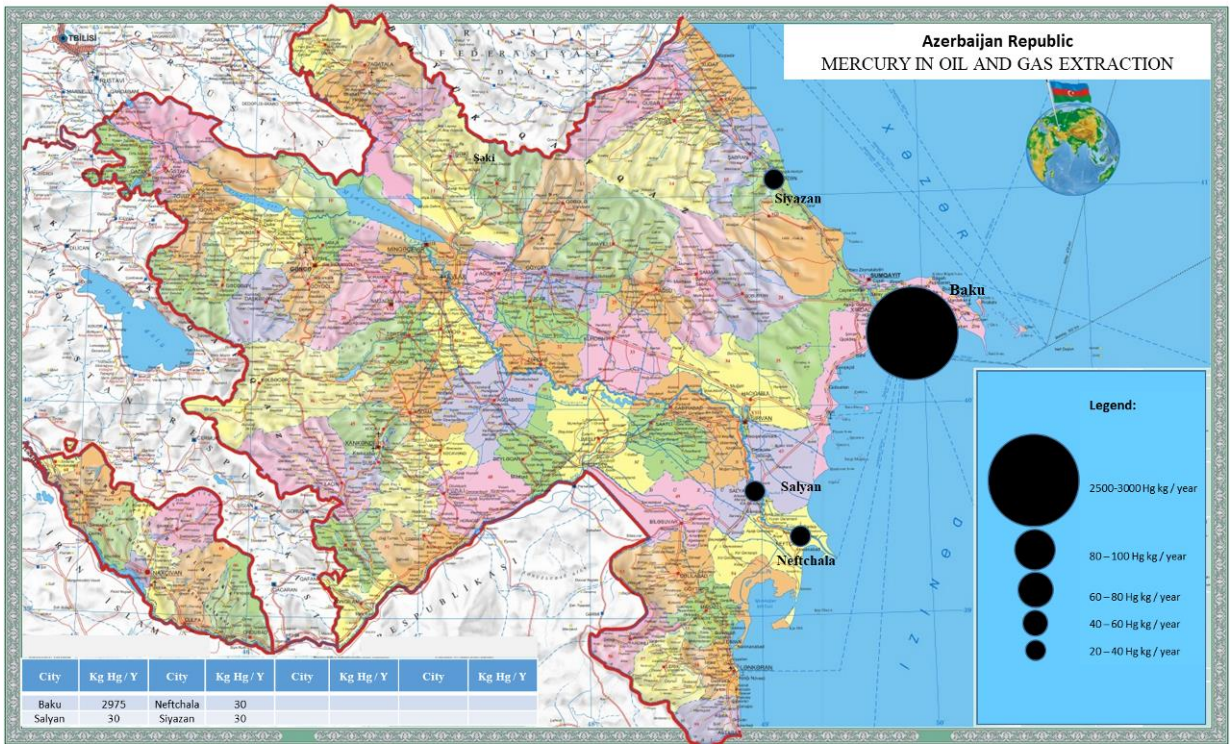


Figure 12. Hotspot map: mercury in oil and gas extraction

Shown are locations of major oil and natural gas deposits.[14] The main oil and gas extraction area in Azerbaijan is the Absheron peninsula as well as offshore of the Absheron peninsula in the Caspian Sea.

[13] https://www.azstat.org/MESearch/search?departament=21&lang=az

[14] Hotpoint maps was developed on the basis of data analysis for mercury inventory of the country

Table 5. Energy consumption and fuel production

Source category Energy consumption	Activity rate Annual consumption /production	Unit	Estimated Hg input, Kg Hg/y Standard estimate	Estimated Hg releases, standard estimates, Kg Hg/y						Cat. no.
				Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatm. /disposal	
Combustion/use of diesel, gasoil, petroleum, kerosene, LPG and other light to medium distillates	7,400,000	Oil product combusted, t/y	41	34.3	0.0	0.0	0.0	0.0	6.4	5.1.3
Use of raw or pre-cleaned natural gas	450,000,000	Gas used, Nm^3/y	45	45.0	0.0	0.0	0.0	0.0	0.0	5.1.4
Use of pipeline gas (consumer quality)	11,400,000,000	Gas used, Nm^3/y	3	2.5	0.0	0.0	0.0	0.0	0.0	5.1.4
Biomass fired power and heat production		Biomass combusted, t/y	-	-	-	-	-	-	-	5.1.6
Charcoal combustion	163,900	Charcoal combusted, t/y	20	19.7	0.0	0.0	0.0	0.0	0.0	5.1.6
Fuel production										
Oil extraction	42,000,000	Crude oil produced, t/y	143	0.0	28.6	0.0	0.0	0.0	0.0	5.1.3
Oil refining	6,500,000	Crude oil refined, t/y	22	5.5	0.2	0.0	0.0	0.0	3.3	5.1.3
Extraction and processing of natural gas	29,000,000,000	Gas produced, Nm^3/y	2,900	435.0	580.0	0.0	870.0	0.0	1,015.0	5.1.4

The main source of Hg releases in the energy consumption category is “Extraction and processing of natural gas” sub-category. From this sub-category, releases just to the air and water in total consist of 1,015 kg Hg /year, which is almost 10 - 20 times higher than others sub-categories of energy consumption category.

2.2.4 Fuel production and energy consumption

The oil-gas industry is the basis of the economy in Azerbaijan. Thus, in foreign investments of the country, the share of the oil sector is 65%. This sector represents 70% of the state budget revenue and 60% of the GDP. The history of industrial production of oil in Azerbaijan covers the period of 170 years (since 1846 and must be considered when estimating the scale of mercury contamination from the oil industry. Mercury is present in about 30,000 hectares of oil-contaminated lands of the Absheron peninsula, which may also contain mercury and, mercury compounds.

In 1994, with the signature of the "Contract of Century" with more than 40 companies from 20 countries began producing oil in the Azerbaijani sector of the Caspian Sea. Presently more than 30 contracts have been signed with trans-national companies. In addition to the international contracts, and the oil produced from the "Azeri – Chirag - Guneshli" deepwater oil fields, State Oil Company of the Republic of Azerbaijan (SOCAR) started developing onshore and offshore oil production using modern technologies.

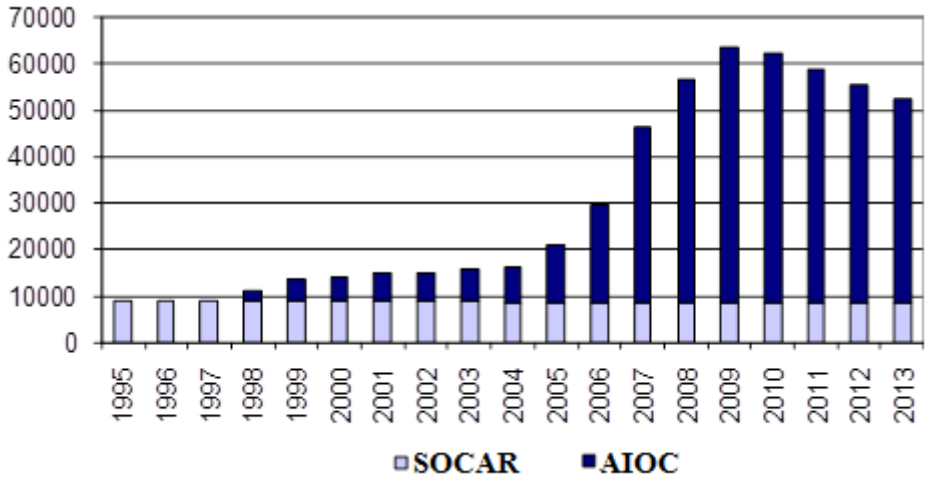


Figure 13. Oil production of the State Oil Company of Azerbaijan Republic (SOCAR) and Azerbaijan International Operating Company (AIOC)

The dynamics of change and forecasts of oil production in Azerbaijan from 1998 to 2025 are presented in the Diagram 1. This figure illustrates that oil production reached the maximum price in 2010-2012 and then began to fall. However, oil production of the State Oil Company of Azerbaijan Republic remains practically stable (Diagram 2). In fact, in many cases, oil production on a global scale is not only determined by needs or reserves, but also by geopolitical and economic problems in the region.

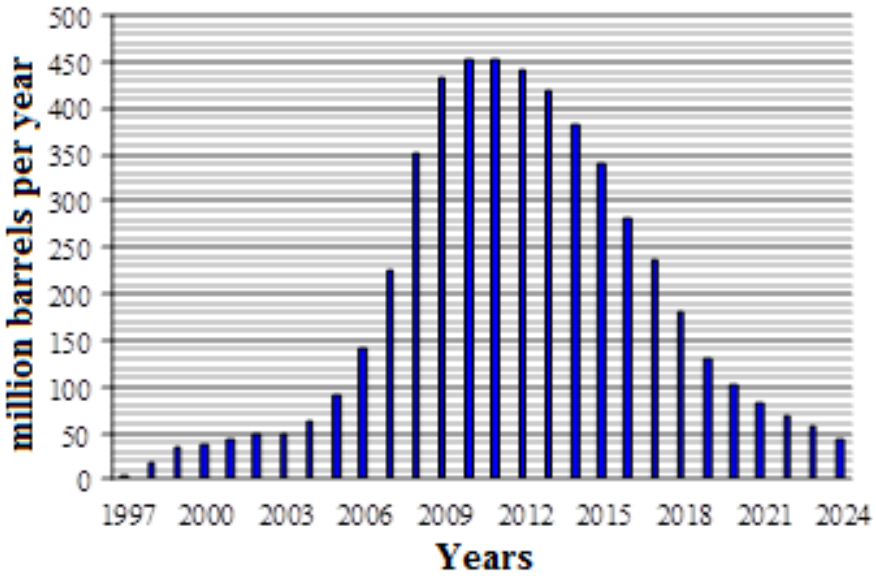


Figure 14. Oil production in Azerbaijan

The US Energy Information Administration gave a report on onshore and offshore oil reserves of the Caspian littoral countries. According to "Radiofarda", the U.S. Energy Information Administration estimated in its report that the total offshore oil reserves equal 19.6 billion barrels and onshore oil reserves equal 28.6 billion barrels. As indicated in the document, offshore oil reserves of Azerbaijan in the Caspian Sea equal 6.8 billion barrels.

Besides total offshore and onshore oil reserves, the total estimates for five Caspian Sea littoral countries are 48.2 billion barrels. Additionally, total oil production of all littoral countries per day is 945,000 barrels, and 890,000 (94%) barrels of this total accounts for Azerbaijan's share. Considering these reserves, it is likely that the territory of Azerbaijan may experience mercury contamination from the oil industry in the future. Table 5 represents estimates for the oil in 2016.

Table 6. Data on energy products (2016)

	Production	import	Export	consumption
Oil	42.075(mln. tons)	0.1	35.227 (mln. tons)	6.848(mln. tons)
Oil processing	6500000 tons			
Natural gas	29 000 (mln.m3)	1,1	15633(mln.m3)	13368,0(mln.m3)
Gases of oil plant	246500tons	-	-	246500 tons
Automobile gasoline	1238300 tons	193600 tons	13.4	1445300 tons (automobile transport -1357,4)
Diesel fuel	2946200 tons	900 tons	1523.2	2156.6 (897.6-automobile transport)
Electric energy	24727.7 mln.kwt - hr	124.1 mln. Kwt	489.3	
Liquid oil gases	262500 tons		35.1	227.4 (23,1 thousand tons automobile transport)
Treated natural gas	450 million cub. m			
Consumption gas (from pipe)	11 40 million cub. M			
White oil type reactive (thousand tons)	709.0	0	196.7	Jet fuel (346.7 thousand tons) Internal air transport 165.0 thousand tons

2.2.5 Primary Metal Production

Industrial production of gold began in the 15th century. A number of historical expeditions have been organized for searching and production of gold and this process reached its maximum point in different years. In Gadabay, the deposit used for Azerbaijan mining works, began 2,000 years ago. More recent activity began around 1849 when the Mekhor Brothers started mining works in the gold field and then the German-based, Siemens Bros, Company developed and operated a copper mine in Gadabay. At least five large (more than 100,000 tons) and numerous smaller sulphide stacks were mined during the period between1849-1917. During this period, the Siemens Bros Company produced copper ore in the deposit and extracted about 2 million tons ore. Naturally, in those days gold was produced using mercury with primitive (artisanal) methods and it is highly probable that these traditions continue in a minimal way.

In 1917, with the onset of the Russian Revolution, mining activity was stopped. After 1991, when Azerbaijan gained independence, and beginning in 2000, commercially important deposits were discovered in areas where geological-exploration works were performed in the Gadabay, Dashkasan, Goygol, Goranboy and Balakan regions. Among these deposits, the Gadabay, Chovdar, Garadaghly and Kurakchai gold fields were of great interest. In 2009, gold production began in the Gadabay and Chovdar deposits.

According to investigations, it is estimated that the Gadabay deposit contains 22 tons of gold. This deposit has a special feature, which makes it possible to produce 1.5 g of gold per ton of rock. It was estimated that the Gadabay deposit also contains 192 tons of silver and 37 of copper. In the gold-copper field of Gadabay, the maximum depth of wells is 270 m. Approximately, 100-150 tons of ore are processed per hour in the new facility.

Sulphidisation, acidification, recycling and thickening processes are used for production of copper and silver dissolving in chemical solution at the Gadabay gold-copper production enterprises. Copper which is produced in the form of a by-product of precipitated copper sulphide concentrate contains commercially valuable silver. The production capacity depends on ore mineralogy and process efficiencies. The total copper concentrate produced in 2010 contained 182.5 tons of copper, 1,460 kg (46,940 ounce) of silver and 25.9 kg (833 ounce) of gold. The company is targeting to produce 525 tons of copper per year.

Originally, the Gadabay deposit was mined using open-pit mining techniques. But if the abundance of ore deposits is discovered in deep layers during further geological-exploration works, the company may move to mining operations using existing historical infrastructure and mining corridors in the next stage for long-term projects. Improving Gadabay's processing capabilities, AIMC (Azerbaijan International Mining Company) produced 60,000 ounces of gold for 2011 and AIMC could produce 300,000 ounces of gold from Gadabay deposit. If 70% of gold was produced from ore in the old plant, it may reach up to 85% in the new enterprise. Mining activity commenced in 2008 when the Anglo-Asian Company began construction of an open pit mine and a conventional heap leach and processing facility for the recovery of gold, copper and silver. AIMC has a right to perform mining and exploration works on 300 km^2 of the Gadabay contract territory ("Gosha", "Gadabay", "Ordubad") within 15 years beginning 26 February 2007. In this territory, the first gold ore field of Azerbaijan is located, and several exploration well-drilling works are carried out. At present, according to the JORC (Joint Ore Reserves Committee) code, the amount of mineral resources for all categories was determined with the following order: 791,000 ounces of gold; 49,300 tons of copper and 7,597,000 ounces of silver.

The target is to produce 32,000 ounces of gold. To produce gold from rocks extracted from raw material, i.e. mine, the rock must be passed through several stages. The most complex stage is the

mill process. Special substances are added into decomposed rock and then washed with water, thus dried grams of gold are produced from tons of soil.

In 2013, the Anglo-Asian Mining PLC produced 52,068 ounces of gold in "Gadabay" complex field. For example, in 2012 AAM plc (Anglo Asian Mining) produced 50,215 ounces of gold. In 2013, the company produced 46,076 ounces of gold, while sale volumes were 42,743 ounces in 2012. According to the terms of the agreement with Azerbaijan Government on production sharing AAM's reserve in 2000 km2 area is more than 36 tons of gold, 292 tons of silver and 94,000 tons of copper. The biggest mining field among deposits for AAM is the Gadabay complex mining deposit.

In this region, gold production history is 2000 years old and native populations are aware of the traditions of using alternative technology with mercury to produce gold. That is why future applications of gold production technologies and other non-ferrous metals must be monitored.

Mercury may be emitted into the environment from two sources in the production of gold and non-ferrous metals:

- *The use of extraction methods in the production process*
- *Release of mercury during the processing of rock material*

In Azerbaijan, the production stage of non-ferrous metals is carried out by the separation of gold using cyanide. Separated mercury is a material only in minerals and separated in the treatment process.

It should be considered that people living in these territories can eternize historical gold production traditions using mercury amalgam in an alternative way. It may be possible to separate gold in water in the Kurakchai Reservoir. Monitoring would be expedient in future investigations.

To calculate mercury releases, the following 2016 estimates were used in for activity rate in the calculation spreadsheet: gold 2 tons/year, copper 93 tons/year, production of aluminum from bauxite 100,000 tons/year, primary iron 20,000 tons/year. The total amount of mercury released through these processes was 54 kg. 9.6 kg of it was emitted into air, 5 kg to water, 0.4 kg remains in products as a mixture, 32.5 kg is a general waste, and 6.3 kg is given to treatment sector of wastes.

Table 7. Primary metal production

Source category	Activity rate Annual consumption/production	Unit	Estimated Hg input, Kg Hg/y Standard estimate	Estimated Hg releases, standard estimates, Kg Hg/y						Cat. no.
				Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatm. /disposal	
Primary metal production										
Production of copper from concentrates	93	Concentrate used, t/y	3	1.1	0.0	0.0	0.4	0.0	1.2	5.2.4
Gold extraction by methods other than mercury amalgamation	2	Gold ore used, t/y	0	0.0	0.0	0.0	0.0	0.0	0.0	5.2.6
Alumina production from bauxite (aluminum production)	100,000	Bauxite processed, t/y	50	7.5	5.0	0.0	0.0	32.5	5.0	5.2.7
Primary ferrous metal production (pig iron production)	20,000	Pig iron produced, t/y	1	1.0	0.0	0.0	0.0	0.0	0.1	5.2.9

The main source in Primary metal production category is aluminum production sub-category. The main deposit and processing areas are the Gadabay and Dashkasan districts. The aluminum plant is located in Ganja city.

2.2.6 Other Mineral Production: Cement Production

The annual consumption of cement in Azerbaijan is 3.5-4 million tons. But up to recent years, only about 50% of it was produced in Azerbaijan, and the rest was imported from abroad, especially from Iran. This construction sector is now in the first place for its progressive pace and in the near future demand for cement production expected to reach 7 million tons per year. Since 1948 cement production areas have been expanded and modernized, and new facilities have been opened. The former Garadagh cement plant was privatized by Holcim Company of Switzerland and its annual production capacity reached up to 1.7 million tons. The Gazakh cement plant has an annual production capacity of 2 million tons since it was put into operation. The Norm cement plant, with annual production capacity of 2 million tons, was built using modern technologies and has entered into the production cycle.

Cement plants in Nakhchivan produce 300,000 tons annually, have also started to supply the country's construction sector. While the new plants have not reached full production capacity yet, their production capacity in 2016 was 2.7 million tons.

Production of cement requires the processing of many mineral materials at high temperatures. During these processes, mercury in mineral raw material is emitted into the environment. The total amount of mercury emitted into the environment and its distribution among output pathways was calculated in STEP-3 of the UNEP Toolkit. Calculations show that only 316 kg of mercury is separated from production per year. A total of 188.3 kg of Hg is released to air and 128.2 kg is released as by-products and impurities.

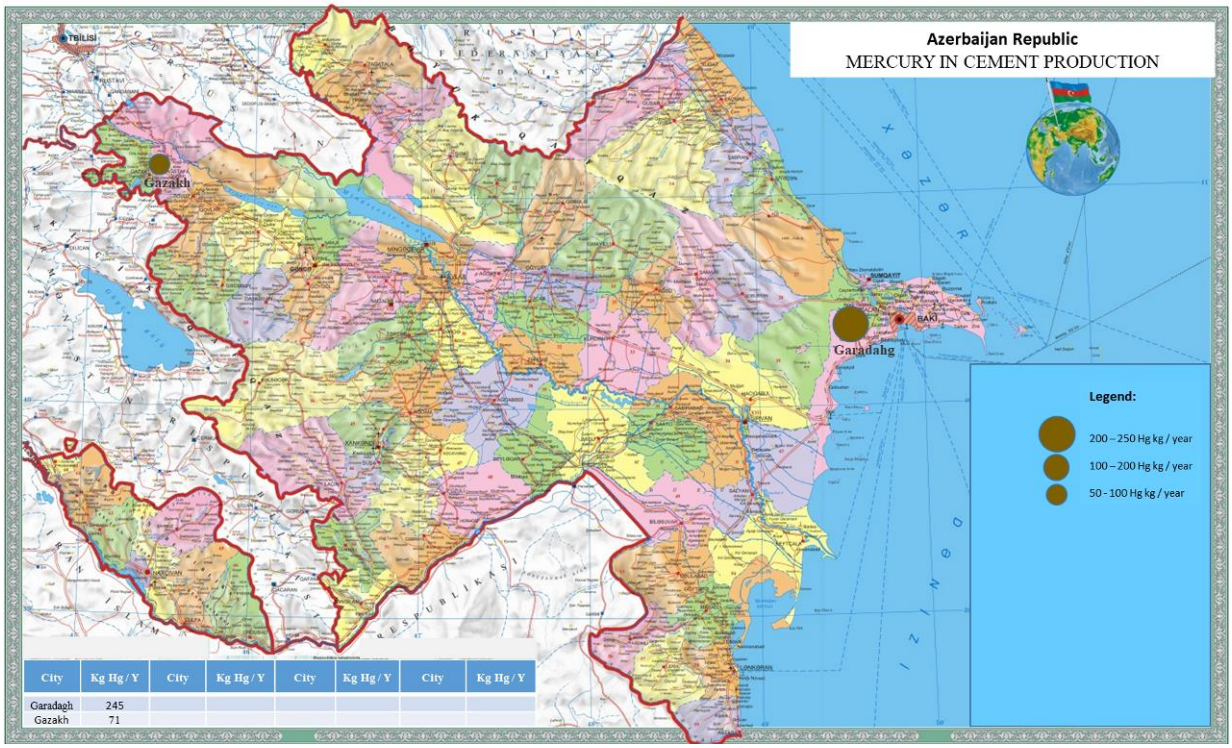


Figure 15. Hotspot map: Mercury in cement production

Table 8. Cement production

Source category	Activity rate Annual consumption/production	Unit	Estimated Hg input, Kg Hg/y Standard estimate	Estimated Hg releases, standard estimates, Kg Hg/y						Cat. no.
				Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatm. /disposal	
Other materials production										
Cement production	2,700,000	Cement produced, t/y	316.5	188.3	0.0	0.0	128.2	0.0	0.0	5.3.1

Cement production is represented by two big plants located in the Garadagh and Gazakh districts. Total cement production is 2,700,000 ton per 2016 year.

2.2.7 Use of mercury in chemical industry

As a rule, mercury is used in the following chemical-industrial processes:

1) Use of mercury catalyst in chlor-alkali production
2) Use of mercury catalyst in polyvinylchloride production
3) Use of mercury catalyst in acetic aldehyde production

The use of mercury as a catalyst was conducted at an Azerbaijan Sumgait surfactants and organochlorine compounds plant and this is explained in detail in Section 2.5. The other industries that use mercury as a catalyst are not represented in Azerbaijan.

2.2.8 Mercury-containing items, equipment and devices

This type of products and equipment includes mercury thermometers used for various purposes, manometers for measuring blood pressure, fluorescent lamps, batteries, polyurethane material, mercury dyes, whitening cosmetics and soaps. Data from the Ministry of Health, State Statistical Committee, the State Customs Committee, the Ministry of Industry and others were used to determine the exact number of these products[15]. However, in most cases, the State Statistical and Customs Committees' data does not indicate whether the product contains mercury. After the ratification or acceptance of the Minamata Convention, it is likely that these issues will be addressed, and an inventory of these products will be possible. For initial estimations, we have used an estimated ratio of mercury to non-mercury equipment at 50:50%. The following approaches were utilized to inventory potential mercury-containing products:

1) Information about the types and number of mercury products was collected from the Ministry of Health, SOCAR and other organizations;

2) When the data were not available, an estimate was conducted by calculating approximate figures taking into account the economic development level of the country and international standards (the number of thermometers, lamps, batteries, and other products for every 1,000 people).

Mercury thermometers

One of the main applications of mercury in Azerbaijan is its use in thermometers. Mercury is the only liquid metal at room temperature, and when all metals are expanded with heat, it is possible to measure accurately the temperature when placed in a glass container.

Mercury thermometers are not produced in Azerbaijan - all thermometers are imported from abroad. To determine the number of mercury thermometers used in the health care sector, the above-mentioned approach was applied. Researchers from the USA[16] estimated that for each hospital bed approximately 2-3 mercury thermometers are broken yearly. In Azerbaijan, there are a total of 45,800 hospital beds, therefore the number of broken thermometers will be approximated at 114,500 thermometers (45,800 beds x 2.5 average yearly breakage rate).

If one of the two families (or one in 10 people) use mercury thermometers, and 20% of them are broken during the year, the number of broken thermometers is calculated at 196,200. The average number of family members are 5 people.

[15] UN Comtrade Database

[16] (Mercury pollution and Minamata Convention – presentation of the problem in SPA IPEN - 2014)

9,810,000 people (population) x 0.1(10% of total population) x 0.2(0.2 of total population) =196,200 thermometers

Combining the two estimates, the total number of disposed medical thermometers is about 310,700. The estimated calculations and the comparative analysis of the number of imported thermometers in 2013, 2014, 2015 revealed that around 300,000 medical thermometers were imported or sold in the country. Considering that mercury thermometers are also used in laboratories their number with wastes can reach 300,600. This figure was used for the Level 1 Toolkit calculations. The results show that a total of 316 kg of mercury is released to the environment from mercury thermometers. Approximately 63.3 kg of this amount is emitted to air, 94.9 kg to water, 63.3 kg to soil, and 94.9 kg to general waste as calculated in Step 6 of the Level 1 Toolkit.

Electric switches and relay

Electric switches are devices that open or close the electrical current, liquid or gas valves. The mercury commutators are:

- ***float switches*** – move when water level changes;
- ***tilt (sloping) switches*** - move when switch position changes;
- ***pressure switches*** – move when the pressure changes;
- ***temperature switches and flame sensors*** – move when the temperature changes.

Mercury switches are used in a range of consumer, commercial and industrial products, such as: devices, heaters, ovens, air purifiers, safety systems, balancing devices, pumps. Relays are products or devices that open or close electrical contacts to control the operation of other devices in the same or other electric circuit. Relays are often used to turn on or off the control circuit by supplying a large current load with a relatively small current. Mercury relays are: mercury plunger relays, mercury-wetted reed switches and mercury contact relays. Relays are used in telecommunication mounting boards, commercial/industrial electrical furnaces (heaters), and other cooking equipment.

In Azerbaijan, approximately 0.14 g of mercury per person for mercury switches and relays was determined using the number of inhabitants and electrification rate. Using this method, the total amount of mercury released was 1,373 kg. Approximately, 412 kg was emitted into air, 549 kg to soil, and 412 kg was separated with general wastes.

Light sources with mercury

Typical mercury light sources are known as mercury steam lamps, which are still used in the lighting of streets in some parts of the world. For light sources, electrically discharged gas is used for mercury evaporation and lighting. Other frequently used light sources include fluorescent lamps. These lamps use an electric discharge to excite mercury atoms, causing the emission of UV light which forms "fluorescent" white light and blowing the phosphorus covering inside the glass. Mercury is available both in the dust and steam state. The same technology can be applied for fluorescent light (CFL) and other high energy efficiency light sources.

The facility producing light bulbs in Azerbaijan is currently closed and all types of lamps are imported from abroad. The quantity of these products was taken from the list of imported goods[17]

[17] http://customs.gov.az/az/faydali/gomruk-statistikasi/
https://www.stat.gov.az/source/trade/

and the calculation was made using the number of 3,500,000 items. The total amount of mercury from this sector was 56 kg. Approximately 16.9 kg of mercury was emitted into air, 16.9 kg were released to soil, and 22.5 kg was separated with general wastes.

Batteries with mercury

There are many batteries which are composed of mercury, including zinc-air, silver-oxide and magnesium oxide containing alkali batteries. They are often used in watches, toys, hearing aids and other small electrical devices. The following is a brief description of the types of batteries commonly found in markets:

- ***Zinc Air miniature batteries*** are mostly used in hearing aids because of their high-energy concentration and their ability to continuously discharge energy. These type of batteries take oxygen from the air for electrochemical energy. The hole in the battery allows the air to penetrate inside from the environment. They are also used in watches and for small devices in ear speaker processors.

- ***Silver-oxide batteries*** are used in various devices, such as hearing aids, watches and cameras. In such batteries, the cathode is silver oxide and the anode is a powdered zinc. Usually sodium hydroxide and potassium hydroxide are added as alkaline electrolyte. Since silver is expensive, it is used only in small batteries

- ***Alkaline batteries*** are used in toys, calculators, remote controls and camera buttons. The cathode of these batteries is manganese dioxide and the anode is a powdered zinc metal. The electrode is potassium hydroxide. As zinc causes corrosion, gas is generated in such batteries. As the battery is used, the zinc electrode is corroded. This corrosion eventually generates electrolysis and hydrogen gas is formed in the production. Hydrogen gas limits the use of the battery. Mercury prevents corrosion, which is why it is added to the system.

- ***Mercury oxide batteries*** also use mercury as the electrode. Mercury oxide batteries are used in hearing aids, watches, calculators, electronic cameras, and personal electronic devices requiring small batteries.

Azerbaijan does not manufacture batteries. All types of batteries are imported from abroad. Based on the import data from 2016, half of the batteries (200 tons) were considered as contained mercury and was used as the basis for calculations in the Level 1 Toolkit. The calculated total amount of mercury emissions from mercury batteries to the environment was 53 kg. Approximately, 13.4 kg of mercury was emitted to air, 13.4 kg was released to soil, and 26.7 kg to general waste.

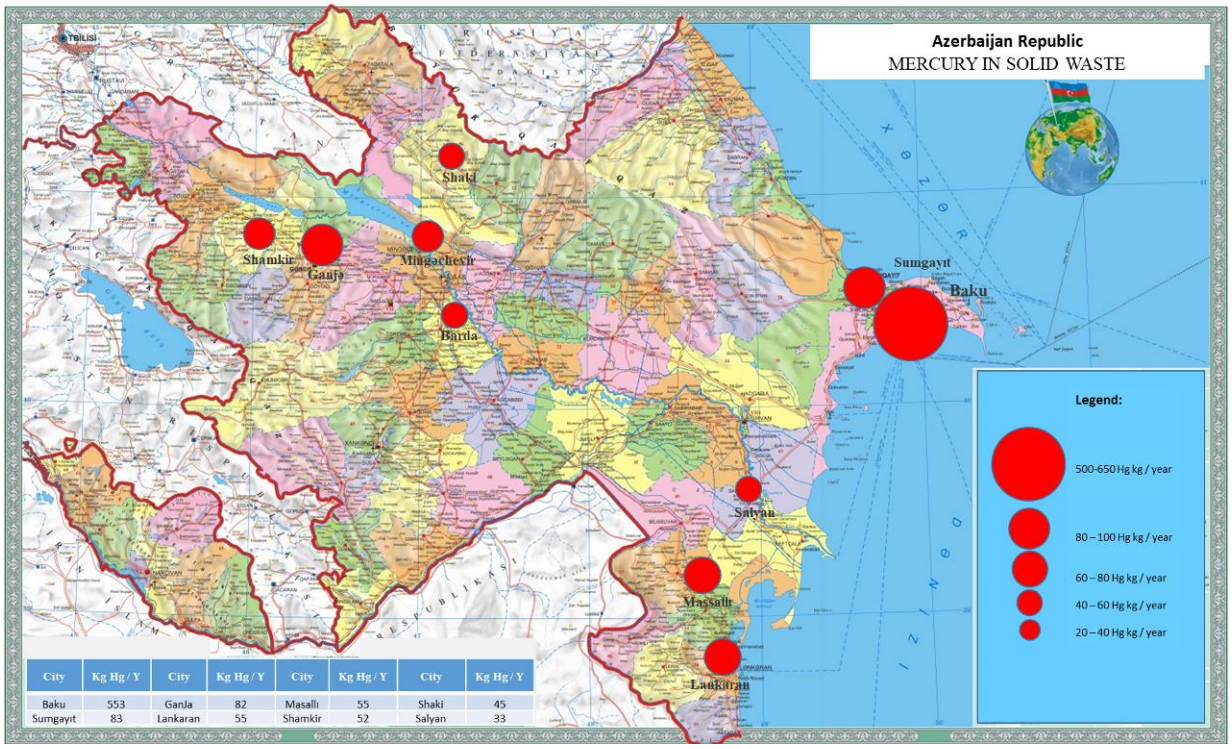


Figure 16. Hotspot map: Mercury in solid waste

Paints with mercury

It is known that ***phenyl mercury acetate (PMA)*** and other mercury complexes are used as paint additives. These supplements are used to prevent bacterial (biocide) fermentation in containers to increase storage time and prevent fungus (fungicide) in humid places. Low soluble inorganic mercury complexes are used to protect coatings of marine equipment and ships from bacteria and marine microorganisms in the sea waters.

There are more than 20 dye brands in Azerbaijan, and dyes from Turkey, Russia, Iran, Germany and other countries are also sold here. Known brands that are available include Sobsan, FAB, Vavilon, Best, Milber, Polisan, Ekol, Palitra, Betek, Yarko, and Joten. Annual mercury dye consumption is about 50 tons. This figure was used in the inventory calculations and mercury emissions were found to be 130 kg/year. A total of 119.6 kg of this amount is emitted into air, 6.5 kg is released to water, and 3.9 kg is sent to waste recycling sector.

Mercury containing cosmetics

Mercury is used as an ingredient found in skin whitening soaps and creams. It was also found in other cosmetics, including eye makeup, cleansing products and mascaras. Skin whitening soaps and creams are regularly used in tropic countries in Africa, Asia and some Latin American countries. They are also used among people with dark skin in Europe and North America. The use of mercury salts prevents the formation of melanin which makes the skin whiter. Mercury is used in two forms: organic and inorganic. Inorganic mercury (for example, ammoniated mercury) is used in soaps, skin whitenings and creams. Organic mercury complexes (thiomersal [diethylmercury] and phenyl mercury salts) are used in eye makeup, as well as preservatives in mascara and cleaning products. Azerbaijan does not produce cosmetics, so, there is no mercury emission from this source.

Though the cosmetics industry is widespread in Azerbaijan, cosmetics containing mercury are often not listed on the ingredients list. Therefore, the approach toward identifying this mercury source type must be three-pronged: 1) Investigation of markets to determine the local market where skin whitening products and active ingredients are sold; 2) To perform an internet summary for all mercury comprising cosmetics and 3) actual measurements of cosmetics for Hg to determine the mercury used brands A primary resource for the internet survey was the hazardous EU website products and detail list, which is available at www.whiterskin.info. It was determined that daily skin whitening products are traditionally used by women, especially young people. There are many cosmetic shops and drug-stores in Azerbaijan. The inventory team determined that skin whitening products and cosmetics of local companies are used to eliminate face blemishes or pigmentation.

Polyurethane with mercury catalysts

Azerbaijan does not produce polyurethane products. Since PUR products are not used and produced in the country, mercury emissions for this category is zero.

Mercury amalgam

Teeth treatment with amalgams as dental fillings has been used for hundreds of millions of patients around the world for more than 150 years. The dental filling consists of liquid mercury (element) and a powdered alloy comprised of silver, tin and copper. Approximately 50% of the tooth filling is made of mercury. The chemical properties of mercury, allow it to easily bond with silver/tin/copper alloys. Dental fillings are also known as "silver filling" for its silver appearance. Despite the name of "silver filling," it also contains mercury.

According to estimations in Azerbaijan, there are about 1,500,000 people with dental mercury amalgams. In 0.4 cm of amalgam in every tooth the amount of mercury is 15 micrograms. The total amount of mercury in 1,500,000 people with amalgams is about 22,500,000 microns or 22.5 kg. The approximate value is calculated for 6,000,000 inhabitants (except up to 5 years old children and old people with dentures) in Azerbaijan.

Since there are no specific regulations for managing mercury amalgams, they are disposed in domestic waste landfills, and the amalgams in the human body are buried in cemeteries. It should be noted that at present, mercury amalgams are not used by dentists in Azerbaijan.

Mercury-containing manometers and devices

The density of mercury is 13,600 kg / m3 compared to water density (1,000 kg / m^3). Therefore, to measure the pressure atmospheric pressure is characterized by normal pressure, which is equal to 760 mm of mercury column and this is accepted as a standard. Mercury manometers used in vacuum techniques also create favorable conditions to measure mercury vapor at very low room temperature (0.001 mm). Depending on their designation and the depth of the vacuum, sometimes mercury manometers are replaced with liquid manometers. In this case, the height of the column depends on the relation between the density of liquid and the density of mercury, and sometimes it may require a few meters higher manometers, but this is not feasible for the use of experimental techniques. For this reason, mercury is widely used to measure the pressure on manometers and devices.

Mercury manometers are widely used in measuring the pressure on vacuum devices used in scientific-research laboratories for physics, technology and chemistry. In the case of accidents or breakage, mercury is collected in accordance with standard rules and disposed of with household wastes. According to approximate calculations, 49 kg of mercury is released to the environment

from manometers and gauges with mercury. A total of 9.8 kg of mercury is emitted to air, 14.7 kg is released to water, 9.8 kg to soil, and 14.7 kg of mercury are to waste.

Laboratory chemicals and equipment with mercury

Mercury is used in scientific research, industry, and demonstration and education laboratories for the following purposes:

1. Research on density;
2. In reagents, buffers, colors and saline solutions as a preservative, and;
3. In mercury electrodes (chlorinated mercury) in electrochemistry and in mercury manometers used in analytical equipment, atomic-absorption spectrometer (AAS), BET device, and vacuum installations.

There are three types of laboratories in Azerbaijan: 1) scientific-research, 2) educational, and 3) industrial and regulatory. Educational laboratories are in secondary and higher education institutions and mercury is minimally used for educational purposes. Quality standards for industrial products in industrial laboratories may use mercury. And finally, in regulatory laboratories, mercury electrodes are used in gas analyzers with mercury-containing equipment.

Estimations have been carried out for mercury emissions of this category based on the population data. The result of the calculations for Laboratory Chemicals show that 98 kg of mercury is released into the environment per year. A total of 32.4 kg is released to water, 32.4 released with wastes, and 33.4 kg of mercury is disposed and stored in special circumstances

The amount of mercury in other mercury comprising laboratory and medical equipment was calculated also based on the number of inhabitants. According to these calculations, 392 kg of mercury is emitted to the environment. A total of 129.5 kg is released to water, 129.5 kg to general waste, and 133.4 kg is disposed stored in special circumstances

Table 9. General consumption of mercury in products, as metal mercury and as mercury containing substances

Source category	Activity rate Annual consumption /population	Unit	Estimated Hg input, Kg Hg/y Standard estimate	Estimated Hg releases, standard estimates, Kg Hg/y						Cat. no.
				Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatment /disposal	
Use and disposal of products with mercury content										
Thermometers	***300,600***		316	***63.3***	***94.9***	***63.3***	***0.0***	***94.9***	***0.0***	5.5.1
Medical Hg thermometers	300,000	Items sold/y	300							
Other glass Hg thermometers (air, laboratory, dairy, etc.)	500	Items sold/y	6							
Engine control Hg thermometers and other large industrial/specialty Hg thermometers	100	Items sold/y	10							5.5.1
Electrical switches and relays with mercury	9,810,000	Number of inhabitants	1,373	412.0	0.0	549.4	0.0	412.0	0.0	5.5.2
Light sources with mercury	*3,500,000*	Items sold/y	56	***16.9***	***0.0***	***16.9***	***0.0***	***22.5***	***0.0***	5.5.3
Fluorescent tubes (double end)	1,000,000	Items sold/y	25							
Compact fluorescent lamp (CFL single end)	2,000,000	Items sold/y	20							
Other Hg containing light sources (see guideline)	500,000	Items sold/y	11							
Batteries with mercury	***200***	***t batteries sold/y***	53	***13.4***	***0.0***	***13.4***	***0.0***	***26.7***	***0.0***	5.5.4
Mercury oxide (button cells and other sizes); also called mercury-zinc cells	0	Batteries sold, t/y	1							
Other button cells (zinc-air, alkaline button cells, silver-oxide)	0	Batteries sold, t/y								
Other batteries with mercury (plain cylindrical alkaline, permanganate, etc., see guideline)	200	Batteries sold, t/y	50							

Source category	Activity rate Annual consumption /population	Unit	Estimated Hg input, Kg Hg/y Standard estimate	Estimated Hg releases, standard estimates, Kg Hg/y						Cat. no.
				Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatment /disposal	
Paints with mercury preservatives	50	Paint sold, t/y	130	119.6	6.5	0.0	0.0	3.9	0.0	5.5.7
Other manometers and gauges with mercury	9,810,000	Number of inhabitants	49	9.8	14.7	9.8	0.0	14.7	0.0	5.6.2
	100	Electrification rate, %								
Laboratory chemicals	9,810,000	Number of inhabitants	98	0.0	32.4	0.0	0.0	32.4	33.4	5.6.3
	100	Electrification rate, %								
Other laboratory and medical equipment with mercury	9,810,000	Number of inhabitants	392	0.0	129.5	0.0	0.0	129.5	133.4	5.6.3, 5.6.5
	100	Electrification rate, %								

2.2.9 Waste Management

In the projects implemented by the UNDP (2009-2012), World Bank (2010-2014), European Union (2010-2012), and Asian Development Bank (2016-2017), daily volumes and composition of solid domestic waste generated in Azerbaijan, as well as the effects of urbanization rates (village, settlement, middle town, and megapolis) have been investigated. According to the outcome of the UNDP Project "Solid Waste Management Improvement", about 250 kg of solid household wastes per capita are generated in the country. The composition of these wastes is as follows.

Table 10. Average values of the composition of wastes

Average values of the composition of wastes, %					
Food	Plastic	Paper/pasteboard	Metal/glass	Hazardous/Medical wastes	Other
61	8	10	5	2	14

Mercury wastes are classified as 2% of hazardous wastes. Thus, the amount of waste generated by 10 million people is about 2.5 million tons. Approximately 750,000 tons of solid household waste collected by nearly 3 million people in Baku and the surrounding areas are fully managed. Approximately 200,000 tons of wastes are subjected to sorting and 450,000 tons are incinerated without sorting. An estimated 80,000 tons of waste were collected in Sumgayit and 82,000 tons of solid household waste in Ganja are also managed and buried in the landfill.

Sumqayıt 320,000 person x 0.25 tons/person=80,000 tons

Ganja 328,000 person x 0.25 tons/person=82,000 tons

Over 375,000 tons of solid household wastes, collected by 1.5 million people living in district centers and relatively small towns (Shirvan, Mingachevir, Naftalan), are thrown to uncontrolled pits and are not managed. Approximately 1,175,000 tons of wastes generated by 4.7 million village residents are not fully managed.

However, in waters sampled in solid domestic landfill areas, the concentration of mercury did not exceed permissible concentration limits. For example, the amount of mercury in waters taken from solid household waste landfills in the Gakh and Oghuz regions was lower than the measured threshold (0.2 mg / kg), which is 5 times lower than the permissible limit (<1 mg / ml).

These figures were used to calculate mercury emissions into the environment. It was shown that 450 kg of mercury is released into the environment through the burning of domestic waste incineration, 2 kg in the combustion of medical wastes, 500 kg in debris disposal, 162 kg in dumping of debris in controlled landfills, and 1,300 kg in non-controlled landfills.

Results show that 2,414 kg of mercury from the solid household waste sector is emitted into the environment, 857.8 kg of it to air, 130 kg to water and 1040 kg to soil, and 226.2 kg of wastes are sent to the processing sector.

Also, it should be noted that approximately 6 kg of mercury is released to the environment from the recycling of 5,000 tons of waste iron products are included in this sector

Table 11. General waste management[18]

Source category Production of recycled of metals	Activity rate Annual production /waste disposal	Unit	Estimated Hg input, Kg Hg/y Standard estimate	Estimated Hg releases, standard estimates, Kg Hg/y						Cat. no.
				Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatment /disposal	
Production of recycled ferrous metals (iron and steel)	5,000	Number of vehicles recycled/y	6	1,8	0	1,9	0	1,8	0	5.7.2
Waste incineration										
Incineration of municipal/general waste	450,000	Waste incinerated, t/y	450	225	0	0	0	0	225	5.8.1
Incineration of hazardous waste		Waste incinerated, t/y	-	-	-	-	-	-	-	5.8.2
Incineration / burning of medical waste	101	Waste incinerated, t/y	2	1.2	0	0	0	0	1.2	5.8.3
Sewage sludge incineration		Waste incinerated, t/y	-	-	-	-	-	-	-	5.8.4
Open fire waste burning (on landfills and informally)	500,000	Waste burned, t/y	500	500	0	0	0	0	0	5.8.5
Waste deposition/landfilling and waste water treatment										
Controlled landfills/deposits	162,000	Waste landfilled, t/y	162	2	0.0	0	-	-	-	5.9.1
Informal dumping of general waste *1	1,300,000	Waste dumped, t/y	1300	130	130	1040	-	-	-	5.9.4
Waste water system/treatment	5,300,000,000	Waste water, m^3/y	2650	0	1325	742	0	331	252	5.9.5

Note: The calculations shown above for the same source sub-categories are superseded by the IL2 results, and the IL2 results are shown in all summary and chart sheets. Besides the sections of "production of recycled ferrous metals (iron and steel)" and "Incineration/burning of medical waste" others calculated with IL2.

[18] Calculated according Toolkit level 2 and then placed in to “Insert IL2”

2.2.10 Mercury in wastewater

The origin of sewage and associated mercury content have been calculated using standard methods. In Azerbaijan, the amount of sewage throughout the country is 5,300,000,000 cubic meters. The results indicate that a total of 2,650 kg of mercury is released. A total of 1,325 kg is released to water, 742 kg to land, 331 kg remains in the form of waste, and 252 kg of mercury enters into the processing (treatment sector) industry.

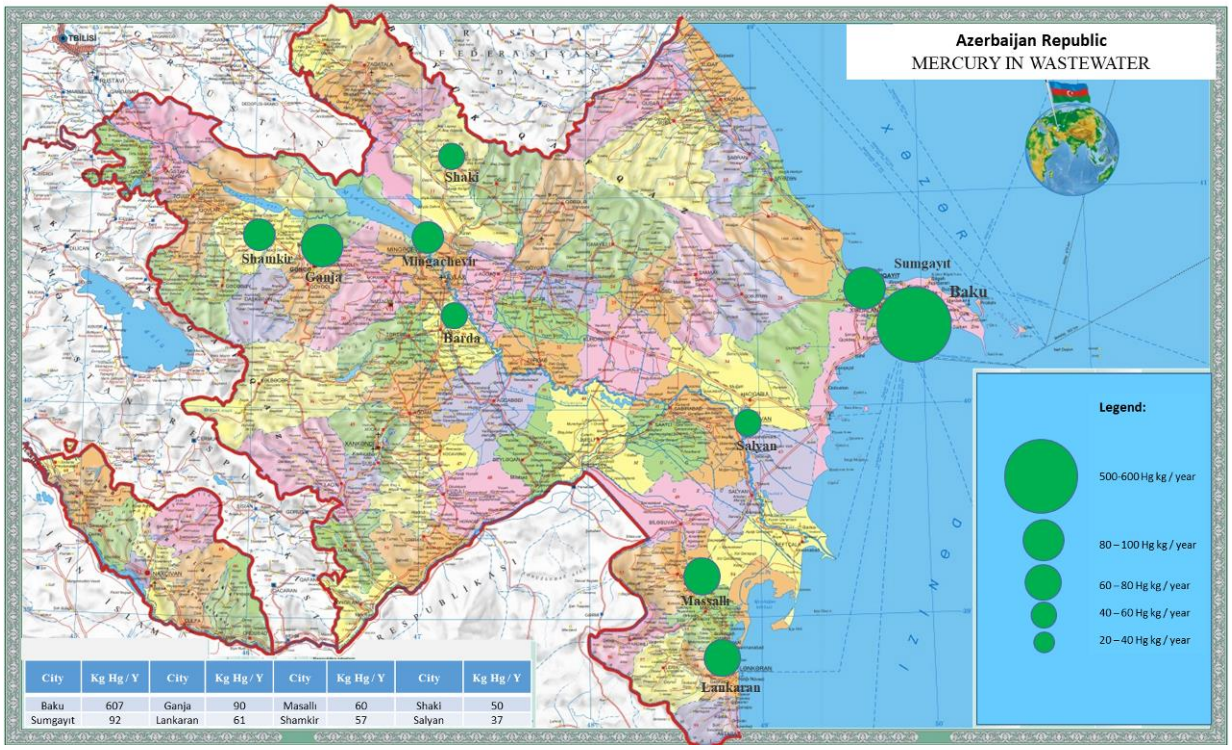


Figure 17. Hotspotmap: Mercury in wastewater

The map was compiled on the basis of calculations presented in the methodology. Emissions of mercury by category were calculated in accordance with the population of the regions. The main Hg source in this category is related to the city of Baku.

2.2.11 Crematorium and Cemeteries

The population of Azerbaijan is 9,810,000 and death rates reach nearly 55,000 per year. There are no crematoria in Azerbaijan and those who have died are buried only in cemeteries. There are about 5,000 cemeteries in the country. Of this total, 4,300 cemeteries are located in villages, 100 are in rural areas, and the rest are in large cities. As crematories don't exist in the country, mercury emissions for this sub-category were not calculated. Based on the number of inhabitants, approximately 137.5 kg/year of mercury is released to the land.

Table 12. Crematoria and cemeteries

Source category	Activity rate Annual consumption /population	Unit	Estimated Hg input, Kg Hg/y Standard estimate	Estimated Hg releases, standard estimates, Kg Hg/y						Cat. no.
				Air	Water	Land	By-products and impurities	General waste	Sector specific waste treatment /disposal	
Crematoria and cemeteries										
Crematoria		Corpses cremated/y	-	-	-	-	-	-	-	5.10.1
Cemeteries	55,000	Corpses buried/y	138	0.0	0.0	137.5	-	0.0	0.0	5.10.2

2.2.12 Mercury containing industrial wastes

Hazardous Waste Landfill

In Azerbaijan, the main sources of mercury emissions and releases to air, water and soil are from oil and gas production, energy and transportation complexes in industrial cities, particularly Baku and Sumgayit. These sources are due to high levels of mercury waste and the lack of sufficient filter technology for the prevention of pollution, and to stop activity on production lines during accidents due to outdated equipment.

One of the main sources of environmental pollution in Azerbaijan is from the Sumgait chlor-alkaline production plant. This has been the most serious environmental problem in Sumgayit. Mercury contamination was connected with the activity of two facilities in the Sumgayit industrial zone, one of which was closed in 1981 and the other was closed in the mid-2010s. If mercury loss ranges from 2-3 g/tonne of chlorine, for the Sumgayit Plant these figures have ranged from 300 g/tonne to 1 kg/tonne in different years. These mercury wastes were emitted to atmosphere, and released to that land and water in the vicinity of the plant.

Mercury wastes were generated by evaporation, leakage and by- products. The annual estimate for these wastes was 6-7,000 tons and 200,000 tons of mercury sludge containing 0.1-0.3% of mercury. Therefore, this waste has posed an environmental risk for nearby groundwater reserves and the Caspian Sea. In Sumgayit, the risk factor for infant mortality was higher than in other regions of the country. The distribution of mercury waste across the landscape has not been properly studied yet. Additionally, research into the biomagnification of mercury into the food chain, through fish studies, has not been conducted. The high concentration of mercury in the seabed of Sumgayit River, which flows into the Caspian Sea, contributes to the presence of methyl mercury in fish and the surrounding marine ecosystem. Therefore, it is important to monitor and control mercury substances in sediments and fishes of the Caspian Sea.

In 1998, the World Bank allocated funding "For solution of urgent environmental problems in Azerbaijan". One of the components of this project was devoted to mercury waste management in Sumgayit. In the early 2000's, a landfill near Sumgayit was created to contain mercury and other hazardous wastes from the environment (Figure 20). All mercury-containing wastes were to be transported to this landfill. However, the design of the landfill does not allow for a complete reduction in mercury air emissions. Construction of the landfill was completed in 2005 and most of the mercury wastes were transported the facility. During cleaning and reconstruction of the plant in 2011-2012, the polluted soil was cleaned and buried at a site near the Sumgayit solid household waste landfill. In an analysis of soil samples taken from various locations, the mercury content at Sumgayit reaches 70 mg / kg, which is higher than the permitted limit (Table 13). This finding necessitates further monitoring of the site for mercury.

The project consisted of the following:

1. Analysis of mercury in water and sludge samples from Sumgayit site;
2. Concrete blocks are used to cover 700 cubic meters of mercury contaminated lands;
3. 1,800 cubic meters of soil was cleaned from mercury;
4. 4.700 kg of pure mercury was cleaned from mixtures and sent to the plant;
5. An area was prepared for 40 cubic meters of mercury sludge at the plant site;
6. The volume for hazardous wastes in landfill reaches 2 million cubic meters.



Figure 18. Hazardous waste landfill where mercury wastes were buried

While the disposal of mercury wastes at the designated hazardous waste landfill reduces the overall risk for mercury contamination to the Caspian Sea it continues to create a risk for the immediate environment surrounding the landfill.

Therefore, monitoring of the cleaning process in the area where mercury wastes are located was established. The main objectives of the monitoring are:

1. Determine the impact of mercury on all components of the environment;
2. Determine the impact of mercury on the Caspian ecosystems and fish near Sumgayit;
3. Develop an environmental impact assessment regarding the transport process of hazardous waste from the sites to the landfill, and;
4. Determine the impact of mercury on the health of the Sumgayit population.

Additionally, key aspects related to the safety of workers managing the mercury wastes and landfill have been prepared within the project. Currently, there are 200,000 tons of wastes comprising 0.1-0.3% mercury in the contaminated soils and by-products of the chlor-alkali plant at the hazardous wastes landfill in Sumgayit. If the density of mercury is estimated at 0.2%, then the amount of mercury in these wastes will be approximately 400 tons.

0.02 (average % of Hg in waste) x 200,000 (tons of waste) =400 tons of Hg in soil

Historical Pesticide Use

It should be noted that in the 1970-1980s, mercury pesticides were used for plant protection in the agriculture industry of Azerbaijan. On November 9, 1981, the use of ***ethylmercurchloride*** and ***mercurhexane*** on seeds was prohibited. ***Mercurbenzene***, used directly on plants, was prohibited on March 21, 1986. These pesticides are not currently use and the residues were buried in the Jangi Pesticide Landfill (Figure 21).

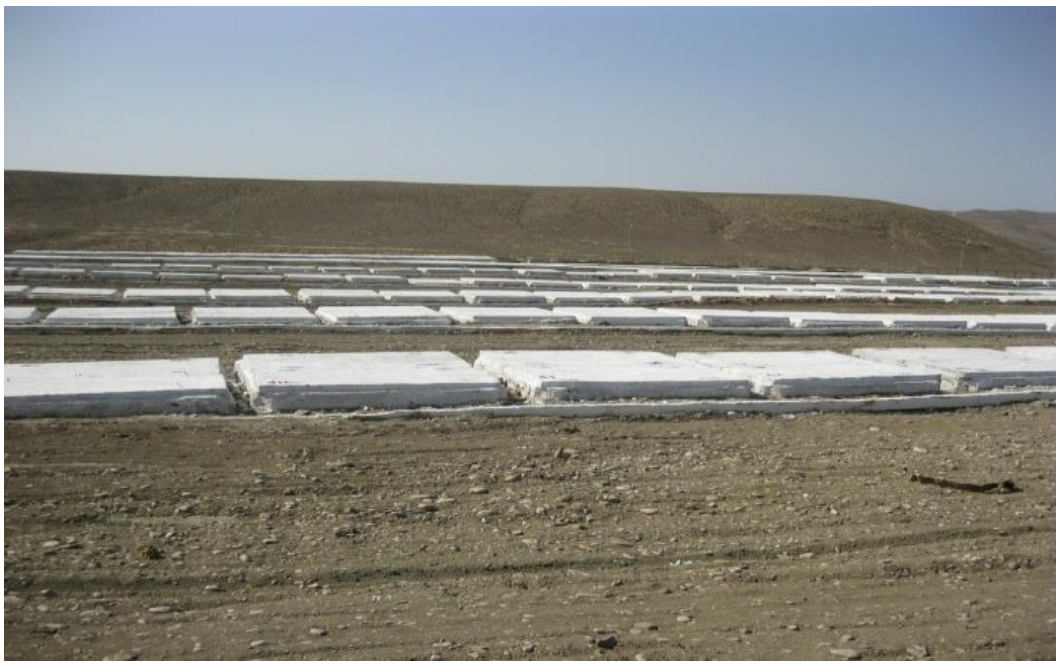


Figure 19. Jangi-nonused pesticide landfill

2.2.13 Contaminated areas

Within the Minamata Initial Assessment, the identification of contaminated sites is not required, however the *Initial Guidelines for Enabling Activities for the Minamata Convention on Mercury* published by the GEF (GEF/C.45/Inf.05 /Rev.01) MIA suggests the identification of mercury contaminated sites and the development of remediation strategies. During discussions between stakeholders, it was determined that chlorine-alkaline was produced between 1970-2003 at two plants in Sumgayit and approximately 200,000 tons of this waste was transported to the National Hazardous Waste Disposal Site between 1998-2003. Therefore, it is likely that there are contaminated areas in the location of the former chlor-alkali plant and hazardous waste landfill near Sumgayit. Thus, as part of the Solid Waste Management Improvement Project of UNDP, soil samples were analyzed from solid domestic waste areas in industrial cities and it was detected that mercury contamination in the Sumgait Solid waste landfill exceeds the permitted limit **(Table 13)**. Therefore, mercury-polluted areas in these locations, including the Caspian Sea, should be closely investigated in the future.

Table 13. Concentration of mercury (mg/kg) in soil samples taken from solid domestic waste landfills in industrial cities of Azerbaijan

City	Concentration of mercury soil samples mg/kg	Standards, mg/kg	
		Industrial zone	Housing zones
Shaki	0.065	50	2
Ganja	0.055	50	2
Mingachevir	0.27	50	2
Shirvan	0.03	50	2
Sumgait	69.27	50	2
Baku (Balakhany)	0.63	50	2

2.3 Impact of mercury on human health and environment[19]

All people are subjected to a certain level of mercury exposure. Individuals exposed to low mercury exposure have less risk-related impacts, as compared to individuals exposed to high mercury levels. As an example, acute, short-term effects of mercury may occur as a result of accidents in production facilities. To determine how serious the health impact is, the following factors must be considered:

1. Type of mercury (Hg or MeHg);
2. Dose of exposure;
3. Human age or human development stage (fetus is most sensitive);
4. Exposure duration, and;
5. Type of exposure (inhalation, food intake or skin affect).

Two groups of people are usually more vulnerable to mercury:

i) People who are more sensitive to the effects of mercury. The fetus, newborn infants and children are especially susceptible to mercury exposure because of the sensitivity of the developing nervous system. The effects of mercury on the fetus occurs more often when the mother consumes a diet high in fish and mollusks. This can negatively affect the development of the child's brain and nervous system. Dysfunction of eyes, memory, concentration, tongue and other organs occurs in the fetus when exposed to the effects of mercury.

ii) Those who are exposed to higher levels of mercury. The second group of people (exposed to mercury in the fishing industry or other fields) are regularly exposed to high mercury levels (chronic effects). Unfortunately, these problems have not been analyzed in detail in Azerbaijan yet.

Elemental and methyl-mercury are dangerous for the central and peripheral nervous system. The inhalation of mercury may negatively affect the nervous, digestive and immune systems, lungs and kidneys, and may have a fatal outcome. Inorganic mercury salts have an abrasive effect on the skin, eye and gastro-intestinal tract, and when swallowed it may cause kidney poisoning. Neurological and behavioral disorders may occur after inhalation, ingestion, or skin exposure. Symptoms include shaking, insomnia, memory loss, nerve-muscle effects, headache, cognitive and motor dysfunction. Toxic symptoms of the central nervous system may occur due to exposure of 20 mg/m3 and more of elemental mercury in the air for several years.

Table 14. Estimated Hg input from identified sources in Azerbaijan

Mercury sources identified in Azerbaijan	Estimated Hg input, kg Hg/year
Energy Consumption	
Combustion/use of diesel, gasoil, petroleum, kerosene, LPG and other light to medium distillates	41
Raw of pre-cleaned natural gas	45
Use of pipeline gas	3
Charcoal Combustion	20
Fuel Production	
Oil Extraction	143
Oil refining	22

[19] http://www.sehiyye.gov.az/sanitariya-epidemioloji-xidmet.html

Mercury sources identified in Azerbaijan	Estimated Hg input, kg Hg/year
Extraction and processing of natural gas	2900
Primary Metal Production	
Production of Copper from concentrates	3
Gold extraction by methods other than mercury amalgamation	0
Alumina Production from bauxite (aluminum production)	50
Primary ferrous metal production (pig iron production)	1
Other materials production	
Cement Production	316
Use and disposal of Product with mercury content	
Hg Thermometers	316
Electrical switches and relays with mercury	1373
Light sources with mercury	56
Batteries with mercury	53
Paints with mercury preservatives	130
Medical blood pressure gauges (mercury sphygmomanometers)	0
Manometers and gauges with mercury	49
Laboratory chemicals	98
Other laboratory and medical equipment with mercury	392
Production of recycled of metals	
Production of recycled ferrous metals (iron and steel)	6
Waste incineration	
Incineration of municipal/general waste	450
Incineration / burning of medical waste	2
Open fire burning (on landfills and informally)	500
Waste treatment/ landfilling and waste water treatment	
Controlled landfills/deposits	162
Informal dumping of general waste	1300
Waste water treatment	2650
Cemeteries	138
TOTAL quantified mercury (as to mercury inventory conducted)	6250
Industrial mercury-containing wastes[20]	400,000

[20] Estimated industrial waste mercury buried and stored in landfills near Sumgait. See 3.5 Mercury containing industrial waste

Chapter III. Policy, regulatory and institutional assessment

3.1. Policy and regulatory assessment

In the event that Azerbaijan joins the Minamata Convention on Mercury, the country will assume relevant legal obligations. Before ratification, we conducted a review of the relevant national legislation and appropriate legal and administrative (procedural) steps. This chapter examines policy being pursued and a framework related to the matter that has been entailed in the Convention and defines legal and administrative measures that might arise out of the Convention.

In the event that Azerbaijan joins the Minamata Convention on Mercury, in addition to the Law on the "Protection of Environment" it will be necessary to develop and endorse a sub-law document (act) that will regulate mercury and mercury compounds, including waste management obligations, while taking the provisions of the Convention into account.

Furthermore, national standards on hazardous chemical substances (including mercury) and their wastes will be improved, or if need be, new standards adopted.

3.1.1 National Legislation of Azerbaijan on Chemical Substances and Mercury

Mercury, as the subject matter, and legal and technical regulations related to mercury broadly manifest themselves in several applicable laws and statutory instruments of Azerbaijan, including: Law on "Protection of Environment" (1999), "Environmental Safety" (1999), "Industrial and Household Wastes" (1998, 2007), "Water Supply and Wastewater" (1999), "Food Products" (1999), "Fishing" (1998, 2014), "Technical Safety" (1999), "Phytosanitary Control" (2006), "Labor Code" (1999), "Protection of Ambient Air" (2001), "Public Health Protection" (1997), "Sanitary and Epidemiologic Well-being" (1992), "Precious Metals and Precious Stonnes" (2005) and potentially others. These laws and instruments are included below when relevant.

Law on the protection of Atmospheric Air (2001): Atmospheric air is the integral component of the environment influencing health, work capacity of people, flora and fauna. The present law, establishing legal bases for protection of atmospheric air, is directed on realization of the rights of population to live in favorable environment and to receive correct information on the environment.

Law on the "Protection of Environment"(1999): defines the term of "deleterious impact on the environment" (Article1). Deleterious impact on the environment spells out activities that are associated with improper application of technologies to chemical, biological, physically harmful and technical operations as well as mining works, and inefficient use of natural resources and consequently give rise to quantitative and qualitative alterations in individual components of the ecological system, thus causing ecological imbalance.

According to the Law, objects of standardization and certification related to the environmental protection entail goods (hazardous chemicals, including mercury and mercury compounds), works, services and technologies that are produced in or imported to the country and capable of inflicting harm on environmental safety, well-being and healthcare of the nation, as well as on restoration and productive use of natural resources (Article 19).

The Law levies charges for polluting the environment, discharging wastes of any nature and for utilizing natural resources. Moreover, the Law stipulates penalties for contaminating the environment in excess of defined levels (Article 24). Rules on implementing charges and penalties and their amount are defined in accordance with the statutory instrument endorsed by the Cabinet of Ministers. And mercury (including mercury compounds) is one of the 89 substances that have been included in Annex 4 of the said statutory instrument.

Law on "Environmental Safety " (1999): To maintain environmental safety, law prescribes economic activities capable of leading to grave ecological consequences, disrupting the environment and its components globally, and passage of resolutions violating the provisions of the international agreements in the field of environmental safety.

The law forbids goods (substances) and other hazardous products that are processed, treated and recycled in an environmentally harmful manner to be imported into and manufactured in the country. Moreover, the Law prescribes the use of toxic substances that are not broken down in a natural way and can be accumulated both in the body and in the environment, as well as the application of toxic substances with environmentally hazardous treatment technologies.

Law on " Industrial and Household Wastes" (1998, 2007): In accordance with the Law, "hazardous" wastes include wastes that contain explosive, inflammable, oxidizing, toxic, infectious, corrosive, and ecotoxic agents and pose hazard, whether directly or indirectly, to human health and the environment. Waste management is the process that creates wastes and deals with collection (classification, transportation, storage, utilization, neutralization, burying, and use) of wastes.

Articles 12 and 13 cover the requirements specified for the management of hazardous wastes. Depending on hazard level, hazardous wastes are categorized in accordance with the criteria established by the Ministry of Ecology and Natural Resources (MENR) and the Ministry of Health related to waste management. Rules on transportation of hazardous wastes, as well as hazardous medical wastes by vehicles are established under existing national standards and provisions (Article 13).

In accordance with the requirements of the Law, hazardous wastes must be granted with certificate. The rules on how to award the certificate must be specified by the Cabinet of Ministers. Pursuant to the legislation, the Cabinet of Ministers approved of the rules (2016) on "Storage of Hazardous Wastes. Wastes must be inventoried in accordance with the Rule on "Inventories of Wastes from Manufacturing Process" (2008) and certified under the Rule on "Certification of Hazardous Wastes" (2003).

Law on "Water Supply and Waterwaste" (1999): Pursuant to the provisions of the Law, a water supplier must take appropriate measures to ensure that the requirements for the quality of potable (domestic) water are met. Moreover, the water supplier must control compliance of the quality of water with relevant national (state) standards.

In accordance with Article 39, consumers are not allowed to discharge substances hazardous to health into public sewer systems.

Law on "Technical Safety" (1999): This law establishes legal, economic and social foundations for safe operation of potentially dangerous facilities and regulates the activities of legal entities and natural persons running those facilities intended to thwart the occurrence of possible accidents therein and obviate their repercussions. Facilities with a focus on production, procurement, transportation and welfare that acquire, develop, process, transport, use and obliterate inflammable substances, radioactive and ionizing radiation sources, toxic agents (including mercury and mercury-containing substances) that may deteriorate environmental and human health are considered to be potentially dangerous facilities (Article 2).

In accordance with the Law, when staffing, legal entities and natural persons running potentially dangerous facilities are obliged to make sure that their personnel comply with technical safety and qualification requirements, as well as with other statutory requirements and are physically fit to work. Furthermore, they are also responsible to maintain safety standards at potentially dangerous facilities and abide by technical safety requirements in relation to storage of mercury and mercury-containing substances as well (Article 9).

Annex № 1, attached to the Law, categorizes potentially dangerous manufacturing facilities. These categories include hazardous agents (substances) that are well suited to the subject matter of the Minamata Convention: inflammable, oxidizing, volatile flammable substances, explosive, toxic and super toxic agents, and other substances detrimental to the environment.

Law on "Phytosanitary Control" (2006): This law is the primary regulatory enactment that governs the domain of Pesticides and Persistent Organic Pollutants (POPs). The Law establishes a legal framework for the arrangement and implementation of phytosanitary control across the Republic of Azerbaijan and regulates relations between entities dealing with plant protection and plant quarantine.

Plants and plant products are marketed on condition that a relevant certificate attesting that the residual quantity of pesticides, biological preparations and compounds thereof in plants and plant products does not exceed the permissible limit is available.

Pursuant to the Law, futile and banned pesticides, biological preparations, compounds as well as containers thereof are taken back from the owners as stipulated by the Cabinet of Ministers and neutralized or eradicated in accordance with the legislation.

Pesticides, biological preparations and compounds thereof lacking a certificate of origin and quality are not permitted to be imported, marketed, utilized or advertised. Unless otherwise stated in international agreements to which the Republic of Azerbaijan is a Party, indicators of the international certificates shall prevail in the import and export of pesticides and biological preparations.

Law on "Food Products" (1999): This law establishes a legal framework for the provision of food security of the nation. According to the instrument, food safety regulates food products to be in compliance with technical, ecological, sanitary, veterinary, and phytosanitary standards, norms, rules and regulations so as not to pose a threat to human life and health.

The Law states that the permissible amount of toxic chemicals, substances, biological, microbiological and other preparations in plant and animal based raw materials as well as in supplements, which are used in food production, are established by relevant regulatory instruments.

Law on "Fishing" (1998, 2014): This law defines protection of fisheries from contamination and impurity (Article 24). Because of this reason, it is prohibited to contaminate and pollute snow mantle and ice sheet blanketing fishery areas with radioactive and toxic agents, chemicals, leather, wooden and petroleum products, as well as to discharge (throw out) those products into fisheries.

In accordance with the requirements of the Law, the permissible norms of harmful impacts on fisheries are established upon the extent to which the harmful substances (chemicals) can be discharged or released into the fisheries. The norms and the procedures applicable to the endorsement of these norms are established by the Cabinet of Ministers.

Law on "Public Health Protection" (1997): One of the provisions established by this Law is a right to obtain accurate information on the factors that have influence on nations' healthcare regularly. The information is provided either by Mass Media or directly by government agencies in accordance with requests submitted by the citizens (Article 11).

Law on "Sanitary and Epidemiologic Well-being" (1992): In accordance with the provisions of the Law, when applying, utilizing and neutralizing chemicals, biological agents and materials, legal entities and natural persons must abide by the sanitary norms and regulations, hygiene rules and standards that ensure sanitary and epidemiologic well-being and safety.

Labor Code (1999): This law establishes principles and norms that ensure and regulate labour, social, economic rights of both employees and employers, the minimum level of relevant guarantees related to these rights, as well as the rights to rest and security and work under safe and healthy conditions, and other fundamental human rights.

Article 48 of the Labor Code defines the institution that endorses the list of heavy, harmful and dangerous occupations (positions). In accordance with this requirement, the Cabinet of Ministers, pursuant to the resolution dated January 3, 2000, was approved of the Special List. The List manifests the subject matter of the project as well. Some modifications may be needed to meet the requirements of the Minamata Convention on Mercury.

Azerbaijan has developed various standards and inspection reports in order to regulate noise, vibration, as well as the quality of air, water and soil under control.

- AZS 269-2007. GOST (National Standards) 17.2.1.01.-76. Environmental Protection. Atmosphere. Classification of Emissions according to Composition.
- Presidential Decree № 796 of Republic of Azerbaijan dated July 8, 2008 – «Norms of Vibration and Noise Pollution Deleterious to the Environment and Human Health »
- AZS 447-2010. Standards on Air Pollutants Emitted by Vehicles used on the Territory of the Republic of Azerbaijan
- AZS-563 211 - Environmental Management and Assessment of Environmental Effectiveness

- AZS 567-2011 - Environmental Protection. Ambient Air. Gravimetric Determination of Atmospheric Particulate Matter (solid particles suspended in the air)
- AZS ISO 16133-2013 – Soil Quality – Guidance on the Establishment and Maintenance of Monitoring Programmes
- AZS-751.4-2013 – Determination of Biochemical Oxygen Demand (BOD5) in environmental waters
- ISO 5666-1999 – Water Quality – Determination of Mercury

3.1.2 Gap analysis between the existing legislation relevant to mercury and the provisions of the Minamata Convention

Article 3 – Mercury supply sources and trade	
Description of Article	
Concise summary of relevant provisions:	○ Not allow new primary mercury mining ○ Phase-out existing primary mercury mining sources within 15 years ○ Prevent the import and use of mercury from primary mercury mining for artisanal and small-scale gold mining (ASGM) ○ In accordance with Article 3.5(b), restrict the import and use of excess mercury from the decommissioning of chlor-alkali facilities ○ Obtain information on stocks of mercury or mercury compounds exceeding 50 metric tons (MT), as well as sources of mercury supply generating stocks exceeding 10 MT per year that are located within its territory ○ Not allow the export of mercury except that the exporting country has provided its written consent meeting the requirements of Article 3.6 and the mercury is for an allowed use or environmentally sound interim storage ○ Not allow the import of mercury without government consent, ensuring both the mercury sources and proposed use are met the requirements of the Convention (and applicable domestic law)
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures**
Not available	Due to the absence of mercury production(mining) in Azerbaijan, there are no existing regulatory measures in place to address this provision.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
• New statutory instrument that prescribes primary mercury mining (manufacturing) • New statutory instrument that prohibits the import of mercury for the purpose of artisanal and small-scale gold mining • In accordance with the requirements of the Convention, to draft a regulatory instrument that would control the import of mercury for the purpose of its separation	

Article 4 – Mercury-added products	
Description of Article	
Concise summary of relevant provisions	○ Not allow the production, import and export of the products listed in Part 1 of Annex A and the phase-out specified in Annex A ○ Phase out the use of dental amalgam under one or two measures listed in Part II of Annex A ○ Prevent the incorporation into assembled products of mercury-added products (e.g. mercury-added switches and relays) listed in Part I of Annex A ○ Avert the production and the distribution of mercury-added new products
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures**
Relevant regulatory requirements are at hand.	Currently, none of the above-listed provisions is being controlled by regulatory measures. The Ministry of Health has not faced any restriction/recommendation to substitute mercury-in-glass thermometers and sphygmomanometers with their digital ones.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
• New legislation that will forbid the import and the export of the products listed in Part I of Annex A in line with the phase-out date. • In accordance with Part II of Annex A, new legislation that would phase out the use of dental amalgam. • Restudying production fields used mercury and mercury compounds in 1960-1980s during the Soviet Union era and monitoring of these fields and assessment of health impacts and gender dimensions • Conduct appropriate field monitoring • Conduct scientific research to eliminate/mitigate impact of mercury and mercury compounds	

Article 5 – Manufacturing processes in which mercury or mercury compounds are used	
Description of Article:	
Concise summary of relevant provisions	○ Not allow the use of mercury or mercury compounds in the manufacturing processes listed in Part I of Annex B ○ Restrict the use of mercury in the manufacturing processes listed in Part II of Annex B (pursuant to the provisions set out in Annex) ○ Not allow newly established facilities to use mercury in the processes listed in Annex B save for the facilities where mercury is used as catalyst in the production of polyurethane ○ Define and acquire information on the use of mercury or mercury compounds for the production facilities listed in Annex B and control releases of mercury into the air as well as to land or water ○ Prevent the fresh use of mercury in industrial processes
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Relevant regulatory requirements are at hand	Azerbaijan does not have any production area in which mercury or mercury compounds are used. Such production areas may be developed in the future.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
○ Prohibitions on manufacturing processes in which mercury or mercury compounds are used.	

Article 6 – Exemptions available to a Party upon request	
Description of Article:	
Concise summary of relevant provisions	Any State or regional economic integration organization may register for one or more exemptions from the phase-out dates listed in Annex A and Annex B, hereafter referred to as an "exemption", by notifying the Secretariat in writing: (a) On becoming a Party to this Convention; or (b) In the case of any mercury-added product that is added by an amendment to Annex A or any manufacturing process in which mercury is used that is added by an amendment to Annex B, no later than the date upon which the applicable amendment enters into force for the Party
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures**
Relevant regulatory requirements are at hand	Azerbaijan reserves the right to implement these provisions for future amendments to be made into Annex A and Annex B.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
○ Not applicable	

Article 7 – Artisanal and small-scale gold mining	
Description of Article	
Concise summary of relevant provisions	Reduce, and where feasible eliminate the emissions (into the air) and releases (to land and water) of mercury or mercury compounds generated from artisanal and small-scale gold mining ○ Establish a coordination framework and specify the activities of entities to develop/execute a National Action Plan (NAP) on ASGM ○ Determine, formulate or regulate ASGM to ensure compliance with the stipulations of the Conventions ○ Open burning of whole ore amalgamation, amalgam or processed amalgam and cyanide leaching in sediment, ore or tailings to which mercury has been added without adding primary mercury ○ Set targets and objectives to reduce mercury with a view to dealing with the most unpalatable circumstances in a timely fashion ○ Determine, formulate/regulate ASGM to ensure compliance with the Convention ○ Reduce releases, wastes and impacts generated from ASGM and prevent the exposure of vulnerable populations (women of childbearing age and children in particular) to mercury used in ASGM ○ Prevent the spread of mercury or mercury compounds from other sectors to use in ASGM and regulate mercury trade in accordance with the NAP. Pursue public health strategies to eliminate the ravages of mercury to artisanal and small-scale gold miners and community
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Relevant regulatory requirements are at hand	ASGM is not available in Azerbaijan.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
• There is no need to pass a new legislation to prohibit ASGM, since ASGM is not a known activity in Azerbaijan.	

Article 8 – Emissions	
Description of Article:	
Concise summary of relevant provisions	○ New sources (as defined in Article 8.2) listed in Annex D require the best existing methods and practices for environmental protection or emission limit values (coal-fired power plants, coal-fired industrial boilers, smelting and roasting processes used in the production of non-ferrous metals, waste incineration and cement production) ○ Application of one or more measures defined under Article 8.5 to control over/reduction in emissions of mercury from existing sources that have been listed in Annex D (the process will last for 10 years) ○ Require reporting/monitoring or in other words, inventories of mercury emissions from the sources listed in Annex D
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Relevant regulatory requirements are at hand	Law on the "Protection of Environment" (1999) provides some general protection.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
In order to regulate and reduce the emissions generated from the processes listed in Annex D (save for coal-fired power plants and industrial boilers, as they are not available in Azerbaijan), Azerbaijan will take steps to incorporate best methods and practices for environmental protection. Taking local circumstances into account, Azerbaijan will incorporate the measures set out in Article 8.5 into its National Implementation Plan within a time frame defined herein. Releases listed in Annex D will be monitored and inventoried. ○ MENR together with SMPDK (State Committee for Standardization, Metrology and Patent) will establish standards on the emissions polluting the atmosphere from mobile and on-the-site sources and prescribe measures restricting those emissions. These standards will also be applied to waste incineration plants (companies).In accordance with the legislations on industrial and household wastes and the protection of the environment, standards applied to incineration plants for medical wastes and medical waste incinerators will be revised. ○ Application of the best existing methods on medical waste incinerators	

Article 9 – Releases	
Description of Article:	
Concise summary of relevant provisions	○ Require appropriate information to specify relevant (primary) sources from which mercury/mercury compounds are released to land or water and maintain an inventory of releases from defined sources ○ Apply one or more measures set out in Article 9.5 to control/reduce the releases of mercury or mercury compounds from relevant (primary) sources to land and water
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
National Mercury Inventory	Assessment using Level I or Level II approaches to classify the sources of mercury releases to land and water
Initial mercury assessment	Includes the actions (activities) set out in Article 9.5, being committed to Article 9 of the National Implementation Plan
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
If need be, systematic assessment of new sources and renewal of inventories	

Article 10 – Environmentally sound interim storage of mercury, other than mercury waste	
Description of Article:	
Concise summary of relevant provisions	○ Take measures to ensure environmentally sound interim storage of mercury in accordance with the guidelines to be set out by the Conference of the Parties (CoP)
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Hazardous Waste Notification Form	Being a party to the Basel Convention, Azerbaijan, in accordance with the classification defined under the Convention, takes steps concerning hazardous wastes and requires a notification and confirmation for movement, storage and disposal of hazardous wastes, which is duly applied to mercury wastes as well.
Sustainable Development Strategy 2020	A special facility to store mercury and mercury wastes (hazardous wastes, in general) has already been established. Hazardous wastes, as well as mercury and mercury wastes are kept in this facility.
Strategic Approach to International Chemicals Management (SAICM)	The activity within the framework of SAICM includes the arrangement of an appropriate site for the construction (establishment) of a storage facility for hazardous wastes and financial support - Azerbaijan has a storage facility.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
• Development of a proposal regarding redevelopment of the classification of hazardous wastes (including measures for mercury) • Improvement of hazardous wastes management standards in line with the requirements for environmental protection • Setting mercury wastes units in a hazardous wastes facility	

Article 11 – Mercury wastes

Description of Article:	
Concise summary of relevant provisions	○ Determination of mercury wastes in accordance with Article 11.2 ○ Measures to manage mercury wastes in an environmentally sound manner, taking the guidelines developed pursuant to the Basel Convention and in accordance with the requirements of the Conference of the Parties ○ Take steps to reduce mercury generated from mercury wastes recovered and recycled under the Convention or in an environmentally sound manner ○ Require transportation across international boundaries in accordance with the Basel Convention, or where the Basel Convention is not applied, in accordance with international rules, standards and guidelines
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Hazardous Waste Notification Form	Being a party to the Basel Convention, Azerbaijan, in accordance with the classification defined under the Convention, takes steps concerning hazardous wastes and requires a notification and confirmation for movement, storage and disposal of hazardous wastes, which is duly applied to mercury wastes as well.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
The country will align its national legislation with Article 11.2 after joining the Convention. Standards required within the framework of environmental protection to ensure transboundary movement of hazardous wastes, including mercury and mercury wastes	

Article 12 – Contaminated sites	
Description of Article:	
Concise summary of relevant provisions:	○ Develop strategies to identify and assess sites contaminated by mercury/mercury compounds ○ Perform any actions contemplated to reduce the risks in contaminated sites in an environmentally sound manner by assessing the relevant risks
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Relevant regulatory requirements are at hand	Azerbaijan has never made use of mercury for industrial purposes. However, the facilities (areas) contaminated by mercury mean landfills, industrial establishments, graveyards and other facilities (areas), whether existing or closed, that shelter mercury wastes by some means or other, shall be assessed partly through the Law on the "Protection of Environment" (1999).
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
Rehabilitation of insalubrious landfills to reduce the impacts of environmental contaminants	

Article 13 – Financial resources and mechanism	
Description of Article:	
Concise summary of relevant provisions:	• Assessment of local funds to meet the obligations of the Convention • Assessment of funds that are available under financial mechanism of the Convention and of other multilateral, regional and bilateral financial resources
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Relevant regulatory requirements are at hand	• Public funds • Trust funds
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
Government spending shall include the costs related to the National Implementation Plan. Other resources (e.g. international organizations) may also contribute. Incorporation of bilateral, regional or multilateral instruments will be made into the National Implementation Plan for financing purposes.	

Article 14 – Capacity building, technical assistance and technology transfer	
Description of Article:	
Concise summary of relevant provisions	o Joint cooperation among developed and the least developed countries and small island developing States in particular, for the purpose of human capacity building and technical assistance o Developed country Parties are briefed on the alternative accessible technologies by the Conference of the Parties.
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Relevant regulatory requirements are at hand	There is not any established platform to expand capacity-building and technical assistance.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
Cooperation with developed countries in the domain of mercury management	

Article 16 – Health aspects	
Description of Article:	
Concise summary of relevant provisions	o Develop and promote strategies such as the guideline on fish consumption in order to identify and protect populations at risk. Encourage awareness-raising and safety programs to avoid exposure to mercury/mercury compounds at workplaces o Promote health care services for prevention, treatment and care for affected populations
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Study into child development (main policy)	The Ministry of Health regularly investigates the health impacts of mercury, through food and fish products on children. These measures comply with the protection of the population at risk.
phase-down removal of mercury-containing medical equipment by MH	Local dentists making use of amalgam are well aware of how to eliminate its impacts. Thanks to the policy pursued by the Ministry of Health, the use of medical equipment containing mercury is phased out.
Legislation on export of fish products	In relation to mercury, provision of security of maximum level and testing. Exporters of fish products undergo testing.
Fishing (aquaculture) rules	In accordance with the amendment made into the Law on "Fishing" in 2014, the relevant framework for the development of aquaculture has been established. Hereby, aquaculture enterprises have been established and are rapidly expanding. At the same time, security issues related to mercury in fishing remains on the agenda.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
• Development of a guideline on the consumption of fish products. • Inspection results of fish products sold at domestic market must be made available in the public domain.	

Article 17 – Information exchange	
Description of Article:	
Concise summary of relevant provisions	o Obtain and disseminate information on the annual quantity of mercury/mercury compounds that are emitted, released and disposed of and the information specified in Article 18 o In accordance with Article 17.5, dissemination of information on the health and safety of humans as non-confidential information o In accordance with Article 21, report to the Conference of the Parties on the development achieved through fulfilling the obligations taken before the Convention
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Relevant regulatory requirements are at hand	Information exchange on the environment is governed by the relevant regulatory legal acts existing in this domain.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
Principles of the relevant national legislation for obtaining and disseminating information on the volume of mercury/mercury compounds that are emitted, released or disposed of during certain processes as well as holding information exchange regarding the health and safety of humans	

Article 18 – Public information, awareness and education	
Description of Article:	
Concise summary of relevant provisions	a) Provision to the public of available information on: (i) The health and environmental effects of mercury and mercury compounds; (ii) Alternatives to mercury and mercury compounds; (iii) The topics identified in paragraph 1 of Article 17; (iv) The results of its research, development and monitoring activities under Article 19; and (v) Activities to meet its obligations under this Convention; (b) Education, training and public awareness related to the effects of exposure to mercury and mercury compounds on human health and the environment in collaboration with relevant intergovernmental and non-governmental organizations and vulnerable populations, as appropriate
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Department of Environmental Advocacy of MENR	In accordance with the provisions set out in domestic Law on "Environmental education and enlightenment of Population", MENR and its relevant structural services, within the framework of public and environmental education, association, awareness-raising campaigns, constantly inform people on the environment.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
• Incorporation of mercury-related issues into the steering document that entails environmental works on environmental education and public awareness • Application of outsourcing, expertise, knowledge and information, which is unavailable to public enterprises, to private sector	

Article 19 – Research, development and monitoring	
Description of Article:	
Concise summary of relevant provisions	Parties shall endeavor to cooperate to develop and improve, taking into account their respective circumstances and capabilities: (a) Inventories of use, consumption, and anthropogenic emissions to air and releases to water and land of mercury and mercury compounds; (b) Modelling and geographically representative monitoring of levels of mercury and mercury compounds in vulnerable populations and in environmental media, including biotic media such as fish, marine mammals, sea turtles and birds, as well as collaboration in the collection and exchange of relevant and appropriate samples; (c) Assessments of the impact of mercury and mercury compounds on human health and the environment, in addition to social, economic and cultural impacts, particularly in respect of vulnerable populations; (d) Harmonized methodologies for the activities undertaken under subparagraphs (a), (b) and (c); (e) Information on the environmental cycle, transport (including long-range transport and deposition), transformation and fate of mercury and mercury compounds in a range of ecosystems, taking appropriate account of the distinction between anthropogenic and natural emissions and releases of mercury and of remobilization of mercury from historic deposition; (f) Information on commerce and trade in mercury and mercury compounds and mercury-added products; and (g) Information and research on the technical and economic availability of mercury-free products and processes and on best available techniques and best environmental practices to reduce and monitor emissions and releases of mercury and mercury compounds.
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
Annual Reports of HM on human health	In Azerbaijan, the Ministry of Health, within the framework of regular research, assesses the impact of mercury on human health, mothers and children in particular.
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
The capabilities and resources available in the country are sufficient for researching, processing and monitoring mercury. The policy aiming to strengthen existing capacity must be broadened so as to work and cooperate on these matters in close cooperation with domestic stakeholders as well as other international organizations	

Article 21 – Reporting	
Description of Article:	
Concise summary of relevant provisions	- Each Party shall report to the Conference of the Parties, through the Secretariat, on the measures it has taken to implement the provisions of this Convention and on the effectiveness of such measures and the possible challenges in meeting the objectives of the Convention. - Each Party shall include in its reporting the information as called for in Articles 3, 5, 7, 8 and 9 of this Convention.
Policy and regulatory measures in place that enable the country to comply with the above listed provisions:	
Relevant policy and regulatory measures	**Aspects of the above-listed provisions that are being addressed by policy/regulatory measures:**
	Report form must be filled in and filed to be considered at the Conference of the Parties
Outstanding regulatory or policy aspects that would need to be addressed/developed to ensure compliance with the Convention's provisions (only in relation to binding provisions):	
It will be necessary to draw up an Inaugural National Report (Statement) on the basis of accumulated data	

3.2. Institutional Assessment

In Azerbaijan, the main public agency responsible for mercury and mercury-containing substances and products and the management and security of wastes of those products is the Ministry of Ecology and Natural Resources (MENR) and its duly authorized bodies (department). Other stakeholders include Ministries of Health, Emergency Situations, Energy, Agriculture, Economy, Internal Affairs, Ministry of Transport, Communication and High Technologies, as well as the State Customs Committee, the State Committee for Standardization, Metrology and Patent, "Azerenerji" ("Azerenergy") JSC, the Azerbaijan National Academy of Sciences, local executive bodies, municipalities, and NGOs, as ascertained by law and within the limits of their competence and authority, operate in the said field. And, in the future, all of these agencies and bodies (organizations), within the capacity of their authority, will ensure the implementation of the Convention.

This part of the report assesses the institutional capacity of the primary stakeholders. In accordance with the institutional capacity assessment the scope of activity of the concerned parties for the established legislative measures has been described in detail in the following table:

Table 15. Assessment table of National Stakeholders related to mercury-associated matters

Concerned Party/ Stakeholder	Relative importance: very high/ high/ average/ low	Relevant field
The Ministry of Ecology and Natural Resources	Very high	National focal point
The Ministry of Health	Very high	Preventive measures for and treatment of mercury-related diseases, monitoring and research Responsible party for using of mercury added medical products/equipment by medical workers
The Ministry of Foreign Affairs	High	Responsible for joining the Convention and representing the Country in terms of its foreign policy
The Ministry of Education	High	Responsible party for environmental education and awareness
The State Customs Committee	High	Regulate import and export transactions
The Ministry of Economy ("Təmiz Şəhər" OJSC – an organization responsible for the management of solid wastes)	Average	Responsible for the management, utilization and storage of mercury wastes
The Ministry of Taxes	Low	Regulate taxation operations
The State Committee for Standardization, Metrology and Patent	High	Specify standards on the relevant field (including standards on food and fish products) and certification
The Ministry of Emergency Situations	High	Take relevant measures in case of emergency associated with mercury releases
Hazardous Waste Landfill (HWL)	High	Storage of mercury and mercury wastes
The Ministry of Defense Industry	Average	Control mercury and mercury-containing equipment and devices

Concerned Party/ Stakeholder	Relative importance: very high/ high/ average/ low	Relevant field
The Ministry of Agriculture	Average	Inspect food quality (in terms of the impact of mercury) and the use of mercury and mercury-containing equipment and that of fertilizers and chemicals during veterinary and phytosanitary checks
SOCAR	High	Responsible for the management of mercury and mercury-containing oil and gas releases
The Ministry of Energy (AzerEnerji OJSC, "AzerİŞıq" OJSC)	High	Control mercury and mercury-containing substances used in power equipment and devices
Mass Media	Average	Briefing and awareness-raising campaigns
Academy of National Sciences	Average	Arrangement scientific researches and monitoring associated with the relevant field
State Statistical Committee	Low	Ensuring data collection and maintenance
Parliament committee	Average	Establishing relevant legislative framework
"Azergold" ASC	Low	Responsible within its competency
NGOs and the general public	Low	Public scrutiny and awareness-raising campaigns
Local authority and municipal institutions	Low	Raising public awareness, understanding, and educational activities on relevant field

3.2.1 Gap analysis of the institutional capacity relevant the provisions of the Minamata Convention

<table>
<tr><td colspan="2">Article 3 – Mercury supply sources and trade</td></tr>
<tr><td colspan="2">Description of Article</td></tr>
<tr><td>Concise summary of relevant provisions</td><td>○ Not allow new primary mercury mining
○ Phase-out existing primary mercury mining sources within 15 years
○ Prevent the import and use of mercury from primary mercury mining for artisanal and small-scale gold mining (ASGM)
○ In accordance with Article 3.5(b), restrict the import and use of excess mercury from the decommissioning of chlor-alkali facilities
○ Obtain information on stocks of mercury or mercury compounds exceeding 50 metric tons (MT), as well as sources of mercury supply generating stocks exceeding 10 MT per year that are located within its territory
○ Not allow the export of mercury except that the exporting country has provided its written consent meeting the requirements of Article 3.6 and the mercury is for an allowed use or environmentally sound interim storage
○ Not allow the import of mercury without government consent, ensuring both the mercury sources and proposed use are met the requirements of the Convention (and applicable domestic law)</td></tr>
<tr><td colspan="2">Relevant stakeholder:</td></tr>
<tr><td rowspan="2">1.Relevant institution/stakeholder: The Ministry of Ecology and Natural Resources (MENR)</td><td>Role with respect to the above-listed provisions:
• Legislative measures for prohibiting the production of mercury
• Regulation of import and export of mercury</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
MENR has a legal department that is in close cooperation with the Ministry of Justice for the renewal of the environmental legislation, along with other issues.</td></tr>
<tr><td rowspan="2">2. Relevant institution/stakeholder: The State Customs Committee</td><td>Role with respect to the above-listed provisions:
• Provision of measures related to the import and export of mercury</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
• The personnel of the State Customs Committee receive special training concerning environmental conventions that Azerbaijan has joined, particularly the Basel and the Stockholm Conventions. To enlighten these specialists about the Minamata Convention on Mercury a special programme will be developed and implemented</td></tr>
<tr><td colspan="2">Remaining Capacity Gaps at National Level needed to be addressed before the Convention’s provisions can be met</td></tr>
<tr><td colspan="2">• Training/awareness raising for customs’ staff.
• Relevant legislative requirements in new gold mining
• Legislative measures for importing and exporting mercury</td></tr>
</table>

Article 4 – Mercury-added products	
Description of Article:	
Concise summary of relevant provisions	o Not allow the production, import and export of the products listed in Part 1 of Annex A and the phase-out specified in Annex A o Phase out the use of dental amalgam under one or two measures listed in Part II of Annex A o Prevent the incorporation into assembled products of mercury-added products (e.g. mercury-added switches and relays)listed in Part I of Annex A
Relevant national stakeholder:	
1. Institution/stakeholder MENR	Role with respect to the above-listed provisions: • Legislation regulating goods listed Part 1 of Annex A • Legislation on the use of dental amalgamation • Legislation regulating production and dissemination of new mercury goods
	Relevant institutional capacity in place to comply with the above-listed provisions: • As listed in previous table
2. Relevant institution/stakeholder The Ministry of Taxes The State Customs Committee	Role with respect to the above-listed provisions: • In accordance with the Codes of Tax and Customs, provision of import/export prohibitions on mercury-added goods
	Relevant institutional capacity in place to comply with the above-listed provisions: • The Ministry of Taxes and the Customs Committee are training relevant personnel to make the prohibitions be abided by
3. Relevant institution/stakeholder The State Customs Committee	Role with respect to the above-listed provisions: • In accordance with the Customs Code, the imposition of import/export prohibitions on mercury-added products
	Relevant institutional capacity in place to comply with the above-listed provisions: • As listed in table of Article 3
Remaining Capacity Gaps at National Level needed to be addressed before the Convention's provisions can be met:	
• Legislative provisions in relation to mercury-added products • Training of specialists (inspectors)	

<table>
<tr><td colspan="2">Article 5 - Manufacturing processes in which mercury or mercury compounds are used</td></tr>
<tr><td colspan="2">Description of Article:</td></tr>
<tr><td>Concise summary of relevant provisions</td><td>o Not allow the use of mercury or mercury compounds in the manufacturing processes listed Part I of Annex B
o Restrict the use of mercury in the manufacturing processes listed Part II of Annex B (pursuant to the provisions set out in Annex)
o Not allow newly established facilities to use mercury in the processes listed in Annex B save for the facilities where mercury is used as catalyst in the production of polyurethane
o Define and acquire information on the use of mercury or mercury compounds for the production facilities listed in Annex B and control releases of mercury into the air as well as to land or water
o Prevent the fresh use of mercury in industrial processes</td></tr>
<tr><td colspan="2">Relevant stakeholder:</td></tr>
<tr><td rowspan="2">1.Relevant institution/stakeholder:
MENR</td><td>Role with respect to the above-listed provisions:
• Given that those manufacturing activities that make use of mercury are not available in Azerbaijan, MENR will only have a role to play in recommending on new types of activities</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
MENR has relevant capacity in its own service of environmental assessment</td></tr>
<tr><td rowspan="2">2. Relevant institution/stakeholder:
The Ministry of Economy</td><td>Role with respect to the above-listed provisions:
• Communicate to the manufacturing entity in relation to the provision of Article 5</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
There is a potential capacity for information on members, but minimum arrangements must be done to convey the proper message</td></tr>
<tr><td colspan="2">Remaining Capacity Gaps at National Level needed to be addressed before the Convention’s provisions can be met:</td></tr>
<tr><td colspan="2">In addition to being aware of the provisions set out in the international instrument and in its 5th Article, relevant departments of the Ministry of Economy must be involved in the preparation of documents to join the Convention</td></tr>
</table>

Article 6 - Exemptions available to a Party upon request	
Description of Article:	
Concise summary of relevant provisions	Any State or regional economic integration organization may register for one or more exemptions from the phase-out dates listed in Annex A and Annex B, hereafter referred to as an "exemption", by notifying the Secretariat in writing: (a) On becoming a Party to this Convention; or (b) In the case of any mercury-added product that is added by an amendment to Annex A or any manufacturing process in which mercury is used that is added by an amendment to Annex B, no later than the date upon which the applicable amendment enters into force for the Party
Relevant stakeholder:	
1.Relevant institution/stakeholder: MENR	***Role with respect to the above-listed provisions:*** • In accordance with Article 6 of the Convention, MENR, through the Ministry of Foreign Affairs, will render its assistance with the measures to be implemented (technical/procedural assistance). It is worth noting that in accordance with Article 6b of the Convention, the Ministry of Foreign Affairs deals with the international correspondence (coordination) for and on behalf of the country.
	Relevant institutional capacity in place to comply with the above-listed provisions: • At this stage any future exemption of mercury-added products is unlikely to be specified and this will depend on the sort of a mercury-containing product to be added
2. Relevant institution/stakeholder: The Ministry of Foreign Affairs	***Role with respect to the above-mentioned provisions:*** • Communicate exemption to the Secretary
	Relevant institutional capacity in place to comply with the above-listed provisions: • Availability of relevant capacity to communicate with the Secretary
Remaining Capacity Gaps at National Level needed to be addressed before the Convention's provisions can be met:	
○ There are no any current deficiencies though this case can exist depending on mercury compound products, in relation with the texts to be added into Convention (regarding possible changes).	

Article 7 – Artisanal and small-scale gold mining	
Description of Article:	
Concise summary of relevant provisions	○ Reduce, and where feasible eliminate the emissions (into the air) and releases (to land and water) of mercury or mercury compounds generated from artisanal and small-scale gold mining ○ Establish a coordination framework and specify the activities of entities to develop/execute a National Action Plant (NAP) on ASGM ○ Determine, formulate or regulate ASGM to ensure compliance with the stipulations of the Conventions ○ Open burning of whole ore amalgamation, amalgam or processed amalgam and cyanide leaching in sediment, ore or tailings to which mercury has been added without adding primary mercury ○ Set targets and objectives to reduce mercury with a view to dealing with the most unpalatable circumstances in a timely fashion ○ Determine, formulate/regulate ASGM to ensure compliance with the Convention ○ Reduce releases, wastes and impacts generated from ASGM and prevent the exposure of vulnerable populations (women of childbearing age and children in particular) to mercury used in ASGM ○ Prevent the spread of mercury or mercury compounds from other sectors to use in ASGM and regulate mercury trade in accordance with the NAP. Pursue public health strategies to eliminate the ravages of mercury to artisanal and small-scale gold miners and community
Due to the absence of ASGM in Azerbaijan, this provision is not applicable to the country.	

<table>
<tr><td colspan="2">Article 8 – Emissions</td></tr>
<tr><td colspan="2">Description of Article:</td></tr>
<tr><td>Concise summary of relevant provisions</td><td>o New sources (as defined in Article 8.2) listed in Annex D require the best existing methods and practices for environmental protection or emission limit values (coal-fired power plants, coal-fired industrial boilers, smelting and roasting processes used in the production of non-ferrous metals, waste incineration and cement production)
o Application of one or more measures defined under Article 8.5 to control over/reduction in emissions of mercury from existing sources that have been listed in Annex D (the process will last for 10 years)
o Require reporting/monitoring or in other words, inventories of mercury emissions from the sources listed in Annex D</td></tr>
<tr><td colspan="2">Relevant stakeholder:</td></tr>
<tr><td rowspan="2">1.Relevant institution/stakeholder: MENR, MoH</td><td>Role with respect to the above-listed provisions:
• Application of BAT/BEP in relation to incineration of medical wastes
• Monitoring of mercury emissions for medical wastes incinerators</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
o The personnel of MENR and the Ministry of Health are well aware of this matter, however need in adequate consultations on utilization and import of waste incineration facilities. these consultations may be provided by Secretariat of the Convention
o Competent bodies of the Ministry of Health can conduct monitoring; but this will call for financial assistance for mercury emissions as well as training for specialists.</td></tr>
<tr><td rowspan="2">Relevant institution/stakeholder: MENR</td><td>Role with respect to the above-listed provisions:
The measures specified in Article 8.5 concerning reductions in mercury emissions from existing sources</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
o The relevant department (body) of MENR for wastes (Department for the Protection of Environment and its relevant unit/division for wastes) is able to counsel on the acquisition of new waste incinerators</td></tr>
<tr><td colspan="2">Remaining Capacity Gaps at National Level needed to be addressed before the Convention’s provisions can be met:</td></tr>
<tr><td colspan="2">• There is a need to conduct trainings on BAT/ BEP for incinerators designed for sources listed in Annex D, more precisely, for solid and medical wastes (for the Department for the Protection of Environment MENR)
• The existing mechanism of the Department for the Protection of Environment (MENR) must be incorporated into the work program of the Ministry of Health as well.</td></tr>
</table>

Article 9 – Releases	
Description of Article:	
Concise summary of relevant provisions	○ Require appropriate information to specify relevant (primary) sources from which mercury/mercury compounds are released to land or water and maintain an inventory of releases from defined sources ○ Apply one or more measures set out in Article 9.5 to control/reduce the releases of mercury or mercury compounds from relevant (primary) sources to land and water
Relevant stakeholder:	
Relevant institution/stakeholder: MENR	***Role with respect to the above-listed provisions:*** • Determination of significant sources of mercury emissions • Inventories of emissions • Measures for reducing emissions of mercury/mercury-compounds
	Relevant institutional capacity in place to comply with the above-listed provisions: • MENR has not yet appointed any agency (body) to execute these measures. This measure will take place after joining Minamata Convention
Remaining Capacity Gaps at National Level needed to be addressed before the Convention's provisions can be met:	
As the Department for the Protection of Environment is fully-staffed and has an adequate amount of capacity, it will carry out the measures.	

Article 10 – Environmentally Sound Interim Storage	
Description of Article:	
Concise summary of relevant provisions	○ Require appropriate information to specify relevant mercury/mercury compounds needing to be stored for an interim time period.
Relevant stakeholder:	
Relevant institution/stakeholder: MENR	***Role with respect to the above-listed provisions:*** • Determination of significant sources of mercury/mercury compounds • Inventories of mercury/mercury compounds • Storage of mercury/mercury-compounds
	Relevant institutional capacity in place to comply with the above-listed provisions: • MENR has not yet appointed any agency (body) to execute these measures. This measure will take place after joining Minamata Convention
Remaining Capacity Gaps at National Level needed to be addressed before the Convention's provisions can be met:	
As the Department for the Protection of Environment is fully-staffed and has an adequate amount of capacity, it will carry out necessary measures.	

<table>
<tr><td colspan="2">Article 11 - Mercury wastes</td></tr>
<tr><td colspan="2">Description of Article:</td></tr>
<tr><td>Concise summary of relevant provisions</td><td>o Determination of mercury wastes in accordance with Article 11.2
o Measures to manage mercury wastes in an environmentally sound manner, taking the guidelines developed pursuant to the Basel Convention and in accordance with the requirements of the Conference of the Parties
o Take steps to reduce mercury generated from mercury wastes recovered and recycled under the Convention or in an environmentally sound manner
Require transportation across international boundaries in accordance with the Basel Convention, or where the Basel Convention is not applied, in accordance with international rules, standards and guidelines</td></tr>
<tr><td colspan="2">Relevant stakeholder:</td></tr>
<tr><td rowspan="2">1.Relevant institution/stakeholder:
“Hazardous Waste” ASC (MENR) Management “Təmiz Şəhər”[21] OJSC– an organization responsible for the management of solid wastes in Baku and its surrounding areas</td><td>Role with respect to the above-listed provisions:
Take steps to manage mercury wastes in environmentally sound methods</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
At the present time, “Təmiz Şəhər” OJSC does not have relevant capacity in the domain of mercury waste management.
“Hazardous Waste” ASC (MENR) have capacity for such activities within its territory.</td></tr>
<tr><td rowspan="2">2.Relevant institution/stakeholder:

MENR</td><td>Role with respect to the above-listed provisions:
• Determination of mercury wastes in accordance with Article 11.2
• Transboundary movement of wastes under the Basel Convention, international rules, standards and guidelines</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
• Definition to be entered into the legislation on the environmental protection
• In accordance with the Basel Convention, MENR controls the transboundary movement of hazardous wastes. Institutional capacity is available on this matter.</td></tr>
<tr><td rowspan="2">3.Relevant institution/stakeholder:
Balakhani Waste Incineration Plant</td><td>Role with respect to the above-listed provisions:
• “Təmiz Şəhər” OJSC must give relevant instructions to Balakhani Wastes Incineration, acting as General Contractor for solid wastes, on the management of mercury wastes.</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
• Available</td></tr>
<tr><td colspan="2">Remaining Capacity Gaps at National Level needed to be addressed before the Convention’s provisions can be met:</td></tr>
<tr><td colspan="2">o Officials and Executives of “Təmiz Şəhər” JSC must undergo trainings on the environmentally proven management of mercury wastes.
o In accordance with Article 11.2, definition of mercury wastes for environmental protection must be provided. MENR and WEP personnel must undergo new trainings on the provisions of the Basel Convention.
o Balakhani Waste Incineration Plant and other contractors (institutions) responsible for solid wastes must undergo trainings on the environmentally proven management of mercury wastes.</td></tr>
</table>

[21]Organization that maintain solid waste management in Baku and surrounding areas

Article 12 – Contaminated sites	
Description of Article:	
Concise summary of relevant provisions:	○ Develop strategies to identify and assess sites contaminated by mercury/mercury compounds ○ Perform any actions contemplated to reduce the risks in contaminated sites in an environmentally sound manner by assessing the relevant risks
Relevant stakeholder:	
1.Relevant institution/stakeholder: MENR	***Role with respect to the above-listed provisions:*** ○ Development of appropriate strategies for identifying and assessing sites contaminated by mercury and mercury compounds
	Relevant institutional capacity in place to comply with the above-listed provisions: • Due to the development of oil and gas industry as well as other heavy industries in Azerbaijan, along with household wastes, there are seriously contaminated sites across the country. And concrete measures are underway to rehabilitate those sites. MENR has relevant capacity to determine and assess the contamination.
2. Relevant institution/stakeholder: "Təmiz Şəhər" OJSC	Role with respect to the above-listed provisions: • Measures designed for reducing the risks as well as for assessing the risks in contaminated sites are carried out in accordance with the environmental justification
Remaining Capacity Gaps at National Level needed to be addressed before the Convention's provisions can be met:	
"Tamiz Shahar" JSC will need to strengthen its material and technical resources with the aim to clean up polluted fields. It is also planned to take appropriate technical measures to clean/treat areas from hazardous waste, including mercury, in the regions of the country. At present, the Ministry of Economy is preparing a solid waste management strategy with the support of the World Bank. These issues will also be reflected in the document.	

Article 13 - Financial resources and mechanism	
Description of Article:	
Concise summary of relevant provisions	○ Assessment of local funds to meet the obligations of the Convention ○ Assessment of funds that are available under financial mechanism of the Convention and other multilateral, regional and bilateral financial resources
Relevant national stakeholder:	
1.Relevant institution/stakeholder: MENR	Role with respect to the above-listed provisions: ○ All of the above-listed
	Relevant institutional capacity in place to comply with the above-listed provisions: • MENR will prepare and file a financial justification document related to the environment as well as the financing of measures specified in work program to the Ministry of Finance • In order to obtain financial resources, MENR will prepare a financial justification document to coordinate the implementation of the Convention
Remaining Capacity Gaps at National Level needed to be addressed before the Convention's provisions can be met:	
The issues related to the implementation of the Convention are carried out via relevant capacity of the competent authorities of MENR. In the event that additional funds are required, they turn to the Ministry of Finance as mentioned above.	

<table>
<tr><td colspan="2">Article 14 - Capacity building, technical assistance and technology transfer</td></tr>
<tr><td colspan="2">Description of Article:</td></tr>
<tr><td>Concise summary of relevant provisions</td><td>o Joint cooperation among developed and the least developed countries and small island developing States in particular, for the purpose of human capacity-building (skills) and technical assistance
o Developed country Parties are briefed on the alternative accessible technologies by the Conference of the Parties.</td></tr>
<tr><td colspan="2">Relevant stakeholder:</td></tr>
<tr><td rowspan="2">1. Relevant institution/stakeholder: MENR</td><td>Role with respect to the above-listed provisions:
• Cooperation with developed countries in this particular field so as to build relevant capacity and receive technical assistance</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
• MENR has created quite effective cooperation with the environmental agencies of developed countries, and the cooperation covering mercury-related issues will also be established.</td></tr>
<tr><td rowspan="2">2. Relevant institution/stakeholder: ANAS, its specialized scientific research institutions, universities specialized in technical sciences</td><td>Role with respect to the above-listed provisions:
• Cooperation with developed countries in this particular field so as to build relevant capacity and receive technical assistance</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
o Scientific and educational institutions cooperate with the competent agencies of developed countries in the field of environment.</td></tr>
<tr><td colspan="2">Remaining Capacity Gaps at National Level needed to be addressed before the Convention’s provisions can be met:</td></tr>
<tr><td colspan="2">MENR will establish a framework for technical cooperation with ANAS and its institutions, relevant domestic universities, the Ministry of Health as well as other concerned agencies in this field</td></tr>
</table>

<table>
<tr><td colspan="2">Article 16 – Health aspects</td></tr>
<tr><td colspan="2">Description of Article:</td></tr>
<tr><td>Concise summary of relevant provisions</td><td>o Develop and promote strategies such as the guideline on fish consumption in order to identify and protect populations at risk.
o Encourage awareness-raising and safety activities to avoid exposure to mercury/mercury compounds at workplaces
o Promote health care services for prevention, treatment and care for affected populations</td></tr>
<tr><td colspan="2">Relevant stakeholder:</td></tr>
<tr><td rowspan="2">1.Relevant institution/stakeholder:
The Ministry of Health</td><td>Role with respect to the above-listed provisions:
• Promote the development and implementation of strategies to protect populations at risk, and which may entail safe consumption of food products (fish)
• Encourage awareness raising and preventive programs on occupational exposure to mercury/mercury-compounds
• Assist with prevention, treatment and care for populations affected by the exposure to mercury/mercury compounds</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
• The Ministry of Health has relevant capacity to study guiding principles regulating food (fish) consumption and occupational exposure occurred when using mercury-containing medical equipment and to develop and implement preventive programs
• The Ministry of Health has relevant capacity to treat and care for people exposed to mercy-mercury compounds</td></tr>
<tr><td rowspan="2">2. Relevant institution/stakeholder:
MENR;
The Ministry of Health</td><td>Role with respect to the above-listed provisions:
Assist with the development and implementation of strategies to protect the population affected and that of guiding principles to regulate safe consumption of food products</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
o •Currently, in order to raise public awareness, MENR and The Ministry of Health bear information on the possible quantity of mercury available in food products (fish)</td></tr>
<tr><td colspan="2">Remaining Capacity Gaps at National Level needed to be addressed before the Convention’s provisions can be met:</td></tr>
<tr><td colspan="2">More comprehensive scientific data on mercury content of food products (fish) provided by SN (the Ministry of Health) and MENR and dissemination of more effective information on the executive commissions restricting production of products with high health concern</td></tr>
</table>

<table>
<tr><td colspan="2">Article 17 – Information exchange</td></tr>
<tr><td colspan="2">Description of Article:</td></tr>
<tr><td>Concise summary of relevant provisions</td><td>o Obtain and disseminate information on the annual quantity of mercury/mercury compounds that are emitted, released and disposed of and the information specified in Article 18
o In accordance with Article 17.5, dissemination of information on the health and safety of humans as non-confidential information
In accordance with Article 21, report to the Conference of the Parties on the development achieved through fulfilling the obligations taken before the Convention</td></tr>
<tr><td colspan="2">Relevant stakeholder:</td></tr>
<tr><td rowspan="2">1.Relevant institution/stakeholder:
MENR</td><td>Role with respect to the above-listed provisions:
All of the above-listed</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
These measures will be implemented by relevant bodies of MENR</td></tr>
<tr><td colspan="2">Remaining Capacity Gaps at National Level needed to be addressed before the Convention’s provisions can be met:</td></tr>
<tr><td colspan="2">The relevant structural unit of MENR will carry out the accumulation and dissemination of annual data.</td></tr>
</table>

<table>
<tr><td colspan="2">Article 18 - Public information, awareness and education</td></tr>
<tr><td colspan="2">Description of Article:</td></tr>
<tr><td>Concise summary of relevant provisions:</td><td>a) Provision to the public of available information on:
(i) The health and environmental effects of mercury and mercury compounds;
(ii) Alternatives to mercury and mercury compounds;
(iii) The topics identified in paragraph 1 of Article 17;
(iv) The results of its research, development and monitoring activities under Article 19; and
(v) Activities to meet its obligations under this Convention;

(b) Education, training and public awareness related to the effects of exposure to mercury and mercury compounds on human health and the environment in collaboration with relevant intergovernmental and non-governmental organizations and vulnerable populations, as appropriate</td></tr>
<tr><td colspan="2">Relevant stakeholder:</td></tr>
<tr><td rowspan="2">1.Relevant institution/stakeholder: MENR</td><td>Role with respect to the above-listed provisions:
o All of the above-listed</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
• Awareness-raising activities and the dissemination of information on the environmental issues are carried out by the special agency (body) of MENR – Department of Environmental Advocacy and its sectors (divisions): Press and Public Relations, Information and IT</td></tr>
<tr><td rowspan="2">2. Relevant institution/stakeholder: ANAS (Azerbaijan National Academy of Sciences), its scientific research institutes, universities</td><td>Role with respect to the above-listed provisions:
• Education and trainings, monitoring and research results on mercury and mercury-compounds must be published</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
• Due to poor capacity/quality, laboratories of the competent institutions of ANAS and its universities, there is a need to improve and strengthen them</td></tr>
<tr><td rowspan="2">3. Relevant institution/stakeholder: The Ministry of Health, MENR, ANAS</td><td>Role with respect to the above-listed provisions:
• Publication of information manifesting the impact of mercury and mercury compounds on human health and the environment</td></tr>
<tr><td>Relevant institutional capacity in place to comply with the above-listed provisions:
• Researchers of the Ministry of Health, MENR and ANAS experienced end competencies in conducting research on mercury in food products (fish). At different time, research findings have been published</td></tr>
<tr><td colspan="2">Remaining Capacity Gaps at National Level needed to be addressed before the Convention’s provisions can be met:</td></tr>
<tr><td colspan="2">• In order to disseminate information on mercury, authorized persons/officials of the Environmental Advocacy Department of MENR must be familiarized with the Minamata Convention on Mercury.
• SR institutions and university researchers must establish an accurate framework for the dissemination of information about this field and continue to conduct researches and monitoring.
• The results/findings of these researches must be made available to the general public</td></tr>
</table>

Article 19 - Research, development and monitoring
Description of Article:

Concise summary of relevant provisions	Parties shall endeavor to cooperate to develop and improve, taking into account their respective circumstances and capabilities: (a) Inventories of use, consumption, and anthropogenic emissions to air and releases to water and land of mercury and mercury compounds; (b) Modelling and geographically representative monitoring of levels of mercury and mercury compounds in vulnerable populations and in environmental media, including biotic media such as fish, marine mammals, sea turtles and birds, as well as collaboration in the collection and exchange of relevant and appropriate samples; (c) Assessments of the impact of mercury and mercury compounds on human health and the environment, in addition to social, economic and cultural impacts, particularly in respect of vulnerable populations; (d) Harmonized methodologies for the activities undertaken under subparagraphs (a), (b) and (c); (e) Information on the environmental cycle, transport (including long-range transport and deposition), transformation and fate of mercury and mercury compounds in a range of ecosystems, taking appropriate account of the distinction between anthropogenic and natural emissions and releases of mercury and of remobilization of mercury from historic deposition; (f) Information on commerce and trade in mercury and mercury compounds and mercury-added products; and (g) Information and research on the technical and economic availability of mercury-free products and processes and on best available techniques and best environmental practices to reduce and monitor emissions and releases of mercury and mercury compounds.
Relevant stakeholder:	
1.Relevant institution/stakeholder: MENR	***Role with respect to the above-listed provisions:*** • Stock of mercury and mercury-compounds • Trade environment and trade of mercury/mercury-compounds • Information on Mercury free products and manufacture processes as well as BAT/BEP • Monitoring of use and consumption of mercury and mercury compounds released to air, soil, water, and other environmental components

Article 21 – Reporting	
Description of Article:	
Concise summary of relevant provisions	Each Party shall report to the Conference of the Parties, through the Secretariat, on the measures it has taken to implement the provisions of this Convention and on the effectiveness of such measures and the possible challenges in meeting the objectives of the Convention. Each Party shall include in its reporting the information as called for in Articles 3, 5, 7, 8 and 9 of this Convention.
Relevant stakeholder:	
1.Relevant institution/stakeholder: MENR	Role with respect to the above-listed provisions: o All of the above-listed
	Relevant institutional capacity in place to comply with the above-listed provisions: • MENR will develop reports that are relevant to the Conventions
Remaining Capacity Gaps at National Level needed to be addressed before the Convention's provisions can be met:	
• Accounts (records) over the Minamata Convention on Mercury will be incorporated into annual work programs of MENR	

Chapter IV: Identification of population at risk and gender aspects

4.1. An initial analysis of population included in potential risk group and potential health risks

Mercury is an ecological, health and social problem. Various industrial activities, environment, agriculture, military defense, health, domestic wastes are mercury contamination areas.

The methodology for identification of the impact of mercury and mercury compounds on the population in Azerbaijan is based on the *Guidance for Identifying Populations at Risk from Mercury Exposure*, jointly developed by the World Health Organization (WHO) and the United Nations Environment Program (UNEP).[22] According to this methodology, two key vulnerable groups are identified for the risk of general mercury poisoning / exposure.

1. Those who are more sensitive to the effects of mercury, and

2. Those who are regularly exposed to high levels of mercury

The territory of the Republic of Azerbaijan is mainly located in the subtropical climate zone. High temperature, wind speed and relative humidity should be noted as a factor that raises the risk of mercury exposure by increasing the rate of evaporation and spread of mercury and mercury compounds.

4.1.1 Those who are more sensitive to the effects of mercury

The first group - the most vulnerable group of population at risk of mercury poisoning include pregnant women, developing fetus, newborn, infant babies and children. Existence of sensory nervous system, especially in developing fetus and infants, makes them more vulnerable to mercury. In addition to intraperitoneal impact, newborns may also be exposed to mercury during breastfeeding by mercury-containing breastmilk. That is why women who might become pregnant, pregnant women and women who have recently given birth should be especially informed about the potential dangers of mercury and mercury compounds (especially methyl mercury). According to the WHO/UNEP *Guidance for Identifying Populations at Risk from Mercury Exposure*, persons with liver, kidney, nervous system, and lung diseases have a higher risk of toxic mercury exposure.

The results obtained after the consultations with stakeholders, as part of an internal assessment, demonstrate that numerous luminescent lamps are used in the lighting of rooms in most of the country's higher and secondary schools, and children and students have not been insured from sudden emergency situations that may have occurred by breaking luminescent lamps in educational institutions. In this regard, there is a serious need for public awareness activities related to the use and damage of mercury and mercury products in higher and secondary schools, as well as the decontamination and utilization of such products in accordance with safety regulations. Disposal of mercury products, such as luminescent lamps, together with domestic waste at municipal waste landfills, creates a more hazardous source.

[22]http://www.who.int/foodsafety/publications/chem/mercuryexposure.pdf

Studies conducted in schools and universities in 51 states in the United States, Moscow and St. Petersburg cities of Russia show that hundreds of poisoning cases have been reported in the United States, and thousands of poisoning cases in Russia because of luminescent lamps breaking. In Azerbaijan, this type of scientific research has not been conducted yet, so it is difficult to provide information on the cases of poisoning, and health of infants and youth exposed to this kind of danger. This type of research is needed in our country.

According to the WHO and the UN, environmental issues, gender issues and environmental health were not among the priorities of the former Soviet Union. Ecological pollution had reached its peak in this area by the end of the 1950s[23]. There was a lack of funds to prevent this contamination and to clean the contaminated area. During the time of the former Soviet Union, many of the industrial/production enterprises operated in the largest cities of Azerbaijan, such as Baku, Sumgait and Ganja; therefore, these cities are more environmentally polluted. Besides contamination with other wastes, contamination with mercury and its compounds was prevalent in these areas. In the last decade of the twentieth century, the negative impact of environmental pollution on human health has been at its highest level. According to the statistical data from these years, disease among women and children increased, and reproductive disorders continued to increase[24]Direct and side effects of mercury and mercury compounds have not been considered and no official statistics of mercury poisoning were provided.

There is no information on the accidents or poisoning caused using mercury-containing luminescent lamps or other mercury-containing products in higher and secondary education institutions in the country; medical workers or patients using thermometers and other mercury devices in medical institutions; agricultural workers working in areas where mercury fertilizers or pesticides are used; and health condition of the employees working in weaving and paint industries; construction or other areas.

At the time of the Soviet Union, in Azerbaijan scientific studies were conducted on the adverse impact of mercury on the employees working in the field of production using mercury[25],but relevant awareness raising and educational activities and official statistics were not provided. The information on the production areas and the results of the work performed there were kept in secret, and therefore, there is very limited information. There are no reports of accidents or poisoning caused using mercury-containing luminescent lamps or other mercury-containing products in educational institutions in our country.

[23] Based on comparative characteristics of mercury emitted into the atmosphere

[24] https://www.stat.gov.az/source/healthcare/?lang=en

[25] Series of scientific studies conducted at the Institute of Occupational Hygiene and Occupational Diseases

- Thesis on the theme "Professional hygiene and the state of the nervous system of workers in the production of electrolysis of chlorine and sodium mercury cathode in southern climatic conditions", Khalilova S.A. 2012
- Diagnostic significance of urine-derived mercury in people affected by chlorine and mercury. Alekparov I.I; Nabiyev, T.M; Malikov M.Z Azerbaijan Medical Journal, Communist publishing house, 1983, N9, page.7-9

4.1.2 Those who are regularly exposed to high levels of mercury

Under the WHO/UNEP *Guidance for Identifying Populations at Risk from Mercury Exposure*, the population exposed to high impact of mercury poisoning is referred to the second population group/category, which is regularly exposed to mercury. Among the population living in Azerbaijan, this category can be summarized as follows:

a. **Nutrition with fish and seafood**

Many mercury related studies conducted around the world have identified that the most common way of mercury poisoning among the population occurs mainly through seafood, particularly by eating fish. It has been discovered that fish species, especially large oceanic fishes, have elevated methylmercury concentrations.

In accordance with the Guidance, fisheries workers and people engaged in recreational fishing are included in the risk group. Methylmercury in fish muscle that is eaten can expose people to elevated levels.

The Law of the Republic of Azerbaijan on Foodstuffs[26] ensures the quality and safety of imported foodstuffs in the country. The composition of foodstuff is checked and included in the hygienic registration - register of foodstuffs. Even though special statistics on nutrition of population with fish species in Azerbaijan are not provided, fish nutrition is widely reflected in environmental assessment, environmental health and gender programs. According to research findings and statistical data, women and children who eat fish are at greatest risk from mercury poisoning.

Azerbaijan is located on the shore of the Caspian Sea. Its geographical location has no direct access to the world ocean. There are over 100 species of fish in the Caspian Sea that are regularly eaten by people, including sturgeon, salmon, herring, lamprey, omul, golden gray mullet, chub, and carp. The primary species of fish grown in marine culture farms is trout.

Table 16. Consumption of fish and fish products per capita in households for 2001-2015, kilograms per year

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fish and fish products	4.5	6.2	6.6	6.6	6.6	6.6	6.6	6.7	6.8	6.9	6.9	7.1	7.1	7.2	7.3

Over the last decade, the amount of fish and fish products has annually increased from 4.5 kg to 7.3 kg per capita. These figures are reflected in the table above. This indicates that people in Azerbaijan increasingly depend on some of their food needs from fish. There is a need for a quantitative and qualitative assessment of fish and fishery products, and of the health of the population that regularly eats seafood, as fish and fish products are not fully managed by legislation.

[26] http://az.president.az/articles/10127

The quality and composition of imported foodstuffs are checked and monitored in border customs food laboratories. Local foodstuffs and agricultural products which are their main part are checked and monitored in the relevant hygienic laboratories of the Ministry of Agriculture and the Ministry of Health.

According to the scientific literature, fish living in the basins of Azerbaijan were not included in risk assessment of the health of human populations[27].However, at the end of the 20th century, the World Bank, MENR and MoH conducted joint research among the fish-eating populations of Azerbaijan and it was found that elevated mercury concentrations were found in hair of most people[28]. While fish found in the waters of the country do not belong to a group of highly hg concentrated species, it is still necessary to conduct research on the fishing network in the country, as well as study the impact of produced and imported fish and marine products on vulnerable groups such as pregnant women, young mothers, and children, there is a serious need to study the impact and conduct research on this issue.

The Joint UNFAO/WHO Expert Committee on Food Additives (JECFA) has established provisional tolerable weekly intakes (PTWIs)[1] for total mercury at 5 μg/kg body weight and for methylmercury at 1.6 μg/kg body weight. PTWIs are the last resort that have been exposed to unhealthy exposure to human health throughout the entire life of man and are also the last reference used for food pollutants (such as heavy metals in the body). This indicator (unit) helps to protect the vulnerable groups of the population by expressing a degree of exposure to the risk of poisoning, which is inevitable with the consumption of healthy and nutritious foods per week.

In 2006, it was found that the fetus's nervous system developing in the mother's womb is more sensitive to methyl-mercury impact. In contrast to the embryo and the unborn, the sensitivity to the various effects of methyl-mercury in infants may be less. Exceeding the tolerable weekly intakes approximately two times for adults does not cause a risk of neurotoxicity. Nevertheless, the same result cannot be attributed to children and teen-ages up to the age of 17 because their nervous system is relatively more sensitive compared to adults. Therefore, PTWIs apply to them.

b. **Those who use dental amalgams**. The WHO/UNEP Guidance states that persons using dental amalgams are included in a group of people suffering from mercury poisoning. About 50% of the dental amalgams' composition contains mercury and is potentially harmful to people through mercury poisoning. Mercury in the amalgams' composition can be separated in the form of steam, ions or pomegranate particles and can enter the human body through respiratory tract or gastrointestinal tract. Although there is no report on the side effects of this treatment on people in the world yet, worldwide use of dental amalgams is rapidly decreasing. However, it is included in the health insurance packages of tourists and immigrants in some countries because it is a cheap treatment.

   The period of active use of amalgams in Azerbaijan dates back to 1996-2003. Since 2000, laser dental fillings have begun to be used. Currently, the negative impact of this type of treatment is assessed insignificantly for the local population because there is no use of such dental

[27] http://www.telenir.net/zdorove/opasnoe_nevedenie/p2.php

[28] National Action Plan Preparation (1999) World Bank, UNDP, MENR, MoH joint project. (Research materials from researches conducted in the Sumgayit city area)

amalgams in Azerbaijan and they have been replaced by new amalgams not having mercury. According to medical experts, those who are involved in occupational activities – dentists, laboratory staff, and others (who contribute to the formation of mercury emissions in the atmosphere by burning them) should be included in this risk group.

c. **Personnel who work at the risk of regular mercury poisoning due to labor activity**. This group may include employees of metallurgy and chemical industries, mining workers engaged in cottage and small (ASGM) gold mining and construction materials (paint) sectors, jewelry production, agricultural (chemical pesticides), medical and cosmetic spheres. Currently, there is no population group at risk of high levels of mercury poisoning in Azerbaijan, but there are people among the population working in the field of past mercury production and entering the risk group. The probability of involvement of people in cottage and jewelry production is less because the gold and other elements used here have undergone a pre-processing phase that requires contact with mercury. The manufacture and use of building materials (paint), cement factories, asphalt plants, roofing materials (gums impregnated coatings), etc may create minor risk to individuals.

Employees working at cement manufacturing plants are included in the risk group. Mercury is emitted into the atmosphere during the burning of raw materials in the ovens in cement production.

Employees of heat production (boiler-house) and distribution facilities are also considered to be a group of people suffering from mercury poisoning. Especially in coal boilers, mercury steams are more common. As boiler rooms in Azerbaijan are not operated with coal, but with mazut and oil and gas, the possibility of mercury vapors in the combustion process is high.

Laboratory staff is also a group of people with a risk of mercury and toxic chemicals used in their professional activities. During the assessment of this population group, the employees at the Cement Plant were particularly in the focus of attention. Thus, according to mercury estimates, in the country, about 7 million tons of cement is produced and 316 kg of mercury waste per year is generated.

Production process of numerous large cement manufacturers has been studied in connection with the risks associated with human exposure to toxic substances. It was identified that the process of cement production is a process of dry processing, which is included in the raw material recycling system. During the work, appropriate measures are taken to prevent various accidents and adverse effects. Cement companies operating in the country have labor activity safety and health / medical schemes and risk assessment reports.[29]The activities of cement companies have been certificated both on ISO 9001: 2008 Quality Management System and ISO 14001 (Environmental Management System) and OHSAS 18001 (Occupational Health and Safety Management System) standards. According to the health risk management plan during labor activity, the preventive

[29]http://www.holcim.az/davamli-inkisaf/alternativ-yanacaq-v-xammal.html;
http://www.norm.az/governance/HSEpolicy/ ; http://www.qsz.az/az/page/8-keyfiyyata-nazarat

measures taken against the negative effects of these and other toxic elements to mercury laboratory staff are ensured.

There are heating boilers in Azerbaijan. Workers in boiler-houses are likely to be exposed to mercury in combination with other toxic substances. Oil and gas and diesel boilers are supposed to separate mercury and mercury compounds during the combustion process (according to some research findings). Sanitary and hygienic norms and regulations in this type of enterprise, and Allowable Density Limit (ADL) norm of toxic substances apply. If these indicators are high, regulatory measures are taken.In Azerbaijan established ADL are as follows: 0.3 mkg for atmospheric air, 0.5 mkg/m3 for drinking water, 2.1 mkg for soil, 0.01 mkg/m3 for production.

During consultations with stakeholders in the private sector in Azerbaijan, it became clear that there are standards and certificates for occupational safety and health. International and State standards are used to comply with the safety standards in the workplace, normative legal acts of the central executive authorities, sanitary-hygienic norms and rules - ADL of toxic agents apply. In case of high ADL necessary preventive measures are taken.

The production and use of toxic and hazardous chemical pesticides and fertilizers used in agriculture have been phased out over 1998-2000. There is also a likelihood of mercury containing fertilizers and pesticides that are out of use.

Other professionals who are at risk of being exposed pertaining to their regular labor activity are doctors, dentists (conducting treatment with amalgam method), medical and sanitary workers, and other health professionals. They can be poisoned by mercury, broken mercury thermometers and other mercury-containing devices in the event of sudden accidents during their professional activity.

During the visits to the most populated parts of the Absheron Peninsula, located in the capital city of Baku, the observations showed that there are certain shortcomings in the management of waste landfills.

So, some of the workers at waste disposal facilities who are engaged in collecting products such as cardboard, iron pieces, plastic containers, etc. in open landfills are exposed to unpleasant smells, unhealthy working conditions.

d.**People using various mercury-containing consumer products (skin whitening, glossing cream and soaps)**, or other products in traditional medicine, or in traditional ceremonies are included in the risk group. The cosmetics industry has not developed so much in Azerbaijan, and the composition of the cosmetic products does not contain dangerous elements and ingredients (or there is limited information on their use). There is no practice on utilization of mercury or mercury-containing products for traditional ethnic cultural or religious purposes in the country.

e.In addition to the above-mentioned groups, according to the Guidance, there is a group of people who is unaware of the most important information about the **harmful effects of mercury and their danger to the health of the general population**. During the social

assessment, as well as the meetings with the public, students and schoolchildren, it was identified that most of the population are unaware of the mercury content of batteries and luminescent lamps that they use in daily life. This population is also unaware of the safe utilization of mercury-containing products.

When the size of the mercury batteries is smaller, especially the cordless batteries, danger to the youngest children, especially to babies, increases. In case of minor carelessness, children could swallow these batteries. Such batteries can cause a hole in the stomach and cause acute inflammation. It is therefore crucial to increase the public awareness of the risks associated with mercury and the removal and utilization of mercury products - thermometers, luminescent lamps, and mercury batteries.

In addition to poor awareness of the population, another problem is the lack of technical capacities and resources for the safe collection, transportation and utilization of mass mercury wastes utilized in public facilities (higher and secondary schools, laboratories, etc.). There is a need to increase public awareness and collection / disposal of mercury products in order to prevent such hazardous waste from reaching the environment, soil and water. The problem of mercury waste management requires special attention in the current period. So, as noted above, most batteries, thermometers, lamps, as well as many modern technologies, LCD monitors, luminescent illumination (projector), laptops, LCD TVs and compact luminescent lamps are seen as a necessity in daily life, which could commonly result in exposure to elevated mercury levels when these devices are broken. These products increase the risk of hazard because they are disposed with common household products.

f. Another population group listed in the Guidance and being at risk is the **people living in the areas contaminated with mercury**. Those living near the contaminated areas and engaged in household activities are included in the group with risk of mercury poisoning.

4.2 Assessment of potential gender dimensions related to the management of mercury

Research on Social and Gender Impact Assessment indicate that toxic chemicals, especially mercury and mercury compounds found in water, food, air and soil cause serious changes in people's health by creating problems in reproductive health and nervous system. According to the UNDP Guidance on Chemicals Management: *Why and How of Mainstreaming Gender in Chemicals Management*[30], factors and differences in labor activity (workplace), household responsibilities and biological sensitivity create gender differences between men and women in exposure to various chemicals. These chemicals are harmful to people, especially when these substances are not properly managed, these effects impact on the human body, and can manifest in different ways.

[30] http://www.undp.org/content/dam/aplaws/publication/en/publications/environment-energy/www-ee-library/chemicals-management/chemicals-management-the-why-and-how-of-mainstreaming-gender/Chemicals%20Management%20and%20Gender%20Mainstreaming.pdf

The UN Gender Equality and UN Dangerous Substances Directive[25] identifies gender differences in terms of toxic chemicals and their effects on health. These include:

1) ***Psychological/biological diversities*****.** Men, women, and children are exposed to toxic chemicals, due to their psychological sensitivity. Generally, the health of children against the effects of harmful substances is at greater risk. In children, their psychological sensitivity increases with respect to the rapid development of the body. Another risk is that they have less body mass and are proportionally receiving more pollution (per body weight) from water and air.

The adverse effects of mercury on women can potentially create problems in their reproductive health, such as miscarriage, birth defects, less weight fetus, pregnancy disorders, or premature birth or transmission of mercury (and other chemicals) to the fetus.

2) ***Risk differences in labor activity***. There are differences in the forms of exposure to chemicals between men and women during their employment, which result from their different job responsibilities. The medical and sanitary sectors in Azerbaijan are mainly dominated by women. Thus, most employees in hospitals and polyclinics, pharmacies, medical, research laboratories or industrial production laboratories are women and their risk of being exposed to the negative effects of chemicals or mercury devices used in medical or laboratory procedures in their workplace also increases.

Internal discussions on the social and gender assessment identified that mercury thermometers are not produced in Azerbaijan, but the number of imported thermometers reaches 300,600 per year, half of which are broken during use (there are 2.0-3.0 grams mercury in each thermometer, and when it is broken, it means pollution of more than 6,000 cubic meters air). It should be noted that most thermometers are used at home.

In the construction industry, mainly paint, cement, asphalt, clay, wall paint, etc., are widely used. Many women are working in production of construction materials, especially in laboratory work. Textile industry in Azerbaijan is also dominated by women. The fabrics used in this area are mainly imported and women are not subject to contact with toxic chemicals during dyeing.

Most employers working in the laboratories of chemical, petrochemical and other scientific research institutes operating in our country are women. These women are exposed to the negative effects of chemicals during working process, including mercury, and today, there is a need to protect their health.

Other areas where male employees are few in the country are dry cleaning and simple cleaning sectors. During this kind of work, women can be exposed to harmful ingredients and chemicals by washing detergents, whitening agents, professional cosmetic products, personal care products.

3. ***Different effects at living conditions (at home)***. In addition to the biological sensitivity and the different response to chemicals, men and women are differentially at risk of exposure that are related to their social role. As in many countries, women in Azerbaijan are more involved in household chores, with higher risk of exposure and exposure to chemicals, including mercury.

   Analysis of gender aspects has identified that mercury and other mercury-containing chemicals, especially those that cause severe results, are especially dangerous. Many scientific research has been conducted on the toxic effects of mercury and mercury compounds in the world, and many monographs and published articles on these researches are available in Europe, USA, Russia and Japan. In Azerbaijan, professionals on occupational hygiene and occupational disease have studied common and joint effects of mercury and mercury compounds to the employees working in the production sphere and a number of articles based on the results of the research have been published.

   Women's dominance among health sector workers in Azerbaijan gives rise to worries about the risk of poisoning using mercury devices in the labor activity of young and adult women.

   Although the effects of mercury may vary on men and women, it can be particularly dangerous for women in the reproductive age where the toxic form of mercury (methylmercury) can adversely impact the fetus. In Azerbaijan, studies on mercury impacts on pregnant women (whether fishery or seafood or labor activity) have not been conducted, but the effects of mercury to reproductive health, fetus and infant health and especially the nervous system are reflected in the reproductive health and gender programs.

   It is important to note that fish and fish products which are rich in omega-3 unsaturated fatty acids are useful and recommended to pregnant women and children. The global concern of mercury urges to conduct broader awareness of seafood that has been contaminated with dangerous mercury pollutants and population should be educated about the risks of mercury bioaccumulation, pregnancy risks, and gestation.

Table 17. Symptoms of chronic mercury poisoning

Digestive system	*Gingivitis/vein bleeding, vein inflammation, lepocracia (white spots), metal taste in the palate, inflammation of the oral cavity, angina, mouth ulcer* *Intestinal inflammation* *Diarrhea, oppilation,, loss of appetite, loss of body weight, nausea, emesis*
Nervous and emotional state	*Dizziness, paleness, headache (persistent), humming in the ears* *Aggressiveness, nervousness, anxiety, confusion, depression, fears and anxiety, nightmare, lethargy, frequent changes in mood, shyness, numbness, chronic fatigue, anxiety* *Low trembling, attention deficit, reading disorder, memory loss (short and long term), numbness, speechless, insomnia, persistent pain, loss of smell*

Cardiovascular system	*Anemia, pain in the chest region, frequent or irregular heartbeat*
Respiratory system	*Nasal stuffiness, sinusitis, excessive mucosal secretion, blocked nose* *Asthma / bronchitis, chest indigestion, shallow breathing, short breathing, chronic cough*
Muscles and joints	*Spasms, joint pains, muscle aches, weakness in the muscles, inactivity* *Bone melting*
Skin	*Allergies, flushed skin, cold and damp skin, hair loss, other skin problems*
Other	*Anorexia, swelling of the gallbladder, hypoxia, multiple sweating, renal insufficiency, vision problems (tunnel appearance), water accumulation (edema)*

At the national level, the National Research Laboratory of Occupational Hygiene and Occupational Diseases in Scientific Research Institutes, Occupational Hygiene Chair of the Azerbaijan Medical University, laboratories of the Ministry of Health, Ministry of Environment and Natural Recourses, sanitary-epidemiological laboratory of the Ministry of Agriculture, Sumgait Ecological Rehabilitation Center, and other scientific research laboratories and individual scientists have conducted a number of researches.

Conclusion

1. Pregnant women, fetus/unborn babies, newborns and growing children are most vulnerable to mercury and methyl-mercury, and they should have added protections and awareness.

2. There are gender differences between men and women in exposure to mercury and health effects. This difference is related to the biological and psychological characteristics, the diversity of workplace effects, and the different household responsibilities of men and women.

3. Based on an internal assessment, the following people are particularly prone to mercury poisoning:

    - Those working in legal and illegal waste management facilities, as well as the those exposed to unhealthy labor and various toxic substances by collecting garbage from dumps;

- Medical professionals, medical and sanitary and laboratory staff, dentists and their assistants are at risk of exposure to mercenary or mercury-containing thermometers and other measuring devices in laboratory work;
- Employees working in cement production and boiler-house (heating industry);
- Employees in the production of electronics, electrical and technical, vacuum, and semiconductor materials,
- Laboratory staff of the petrochemical scientific research institute;
- Those engaged in agriculture, and;
- Those working in the fish industry.

4. The Labor Code of Azerbaijan is a comprehensive legal document and contains articles requiring employees to take appropriate measures to assess their workplace risk and to prevent accidents with toxic substances. However, on the eve of and upon the accession to the Convention, the country's labor legislation will need to be amended as required by the Convention.

5. Mercury batteries, expired luminescent lamps, mercury-containing measuring devices used in the laboratories and other mercury products need to be recycled, sorted or disposed of properly and removed from general waste.

6. A large number of luminescent lamps and battery packs have been collected throughout the country. There are shortfalls in terms of increasing financial and technical capacities for sorting and transporting such mercury-containing household waste in an environmentally sound manner. Despite the work done in the field of collection and transportation, there is a need to improve this field management.

7. The public in Azerbaijan is not well informed about mercury, mercury containing products and other mercury sources and the risks of mercury poisoning to human health and the environment. The work done by local entities and NGOs in the field of education is insufficient and there is a serious need for raising information and outreach campaigns in this area.

8. Pregnant women and women in child-bearing years currently do not benefit from training (session) or counseling from gynecologists, neonatologists and pediatricians on the risk of mercury poisoning by their use of fish and other seafood.

9. There are problems with the planning and collection of mercury and mercury-containing products and their negative impact on the imported and exported products throughout the country.

10. A process for assessing mercury concentrations in imported fish, especially fish consumed by pregnant women, women in child-bearing age, and children is needed.

11. Ratification of the Minamata Convention on Mercury by the Republic of Azerbaijan will be an important step in reducing mercury containing wastes in the country and protecting human and environmental health from the emissions and waste of anthropogenic mercury and mercury compounds. In particular, oil gas, oil chemistry, mining and energy industry, enrichment of minerals, cement production, IES, agricultural waste management and waste control will be strengthened.

12. While investigating the results of previous scientific investigations and monitoring it was identified that there is a need to educate people living in areas polluted with mercury and to carry out repeated monitoring in those areas.

13. Although their use has been prohibited in the country, previous use of mercury-containing pesticides and that some of them are still stored in the landfills is alarming. Currently, there are about 8,000 tons of pesticides that need to be urgently managed and those containing mercury are among them. By joining the Minamata Convention on Mercury, Azerbaijan will ensure mercury and mercury waste management. In this regard, the development of new infrastructure projects will be strengthened.

14. By ratifying the Minamata Convention on Mercury, Azerbaijan will contribute to global activities in the fight against mercury and deepen its integration into the international law on environment. Implementation of control over the mercury products imported to the country will also be welcomed in the social sphere of the country.

Recommendations

I. Implementation of the following awareness-raising and outreach campaigns and educational activities:

- Organizing and holding trainings for a group of employees at risk in their professional activities, placing information on the adverse impact of mercury in the employment contract during hiring, and submission of a copy of the contract to the employee after informing him/her;

- Specific groups at risk, such as pregnant women, women in child-bearing age, and young mothers, can be referred to training activities by involving consultations conducted by

gynecologists, neonatologists and pediatricians. Other awareness raising activities can be targeted at schools and other educational institutions;

- Arrangement of public awareness campaigns on mercury sources, mercury-containing devices, home remedies, and proper disposal of mercury containing waste.

II. Collection and disposal (transportation) of mercury-containing wastes:

- Establishment of collecting points for mercury-containing waste and informing the population about it;

- Arranging waste disposal.

III. Improvement of technological processes:

- Strengthening current and final demercurization, taking into account technical, hygienic and anti-fire measures;

- Strengthening the control over the planned implementation of medical, institutional, sanitary, hygienic and medical preventive activities aimed at improving the health of the working population and improving working conditions;

- Regular use of individual and collective remedies.

IV. Ensuring the implementation of relevant legislation:

- Strengthening the capacity of inspecting and controlling executive structures;

- Increasing transparency in the operation of these power structures;

- Inspection of work conditions (technological processing facilities) to ensure that the technical, sanitary, organizational and other measures are ensured in place;

- Improving the quality of family planning and medical examinations of employees working on the production of mercury-containing component;

- Strengthening public oversight over the subject of the Convention.

Chapter V. Awareness-Raising Activities for the Public and Governmental Agencies; Awareness and Training Opportunities for Target Groups and Experts

Although there have been a number of initiatives on hazardous waste management in Azerbaijan, no specific investigations have been conducted to examine the impacts of mercury on human health and the environment. The Minamata Initial Assessment Report for the Minamata Convention is the first serious investigation on this topic. Increasing knowledge and understanding for the general public about mercury uses and their risks to human health and the environment are key priorities of the project. Materials developed for this purpose were developed in easy-to-read formats with numerous illustrations. Outreach and awareness-raising activities were implemented at three stages.

First Stage: Assessment of the Awareness-Raising Activities pertaining to the Current Status of the Mercury and its Effects in Azerbaijan

The assessment of mercury and mercury compounds, their adverse impact on the environment, and serving as a source of an environmental hazard is a field of activity overseen by the Ministry of Environment and Natural Resources, which is a leading environmental protection authority in the country. The Ministry has initiated the process to join the Minamata Convention by Azerbaijan and supported the preparation of the Minamata Initial Assessment Report and conducted the awareness-raising and outreach activities for the general public. Meetings and consultations toward improving awareness were held with other relevant authorities, the Ministry of Health, Ministry of Emergency Situations, Ministry of Education, Ministry of Agriculture, scientific and educational institutions, NGOs and media representatives.

The Ministry of Ecology and Natural Resources, the Ministry of Health, Ministry of Emergency Situations, several scientific research institutes of the National Academy of Sciences, ecology-qualified faculties of higher education institutions and NGOs that deal with environmental issues were widely informed about the reality of the issues concerning the threats of mercury, the importance of mitigating them, as well as joining the Minamata Convention.

A number of governmental agencies (Ministry of Education, Ministry of Agriculture, State Customs Committee, etc.), most businesses that import household appliances, food products, medical and cosmetic products to the country, and many NGOs are generally not aware of the hazards related to mercury use and releases. Mass media are also unaware of both the threats of mercury and the Minamata Convention. There is also very little information currently distributed through the media including television, printing, and social media.

Thus, as a result of preliminary investigations, it was identified that general awareness of the mercury problem in Azerbaijan is low. This was especially evident during meetings held in educational institutions, where it became clear that most young people were not aware of mercury

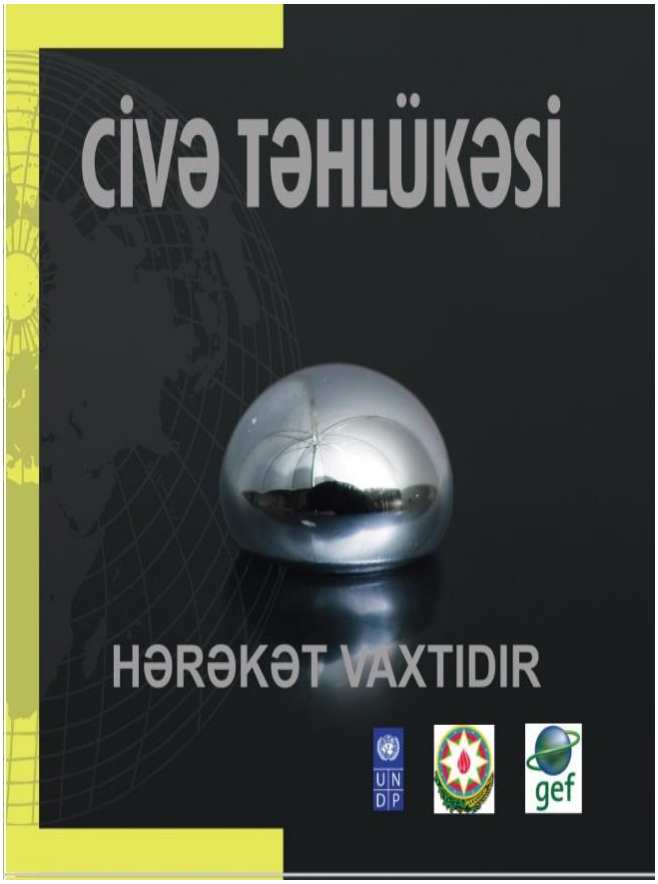
and its threat contained in common household products, such as thermometers, luminescent lamps and batteries. Also, knowledge of safe behavior with mercury devices was considered low. During the meetings held with key public stakeholders, especially in medical institutions, it became clear that they were unaware of digital mercury-free alternatives that replace mercury-containing devices.

The level of complexity of outreach and awareness-raising activities in the project has also been adapted. At this stage of the project priority directions of the work to be performed at different levels have also been identified for Azerbaijan to join the Minamata Convention.

Higher and secondary education institutions, healthcare facilities, NGOs (mainly women's organizations) have been selected as key target groups within the outreach campaign, considering the risk groups for the urgency of mercury related risks, population awareness and social risk assessment. Meetings with these target groups were not only aimed at informing the negative impact of mercury and mercury products, but also the formation of knowledge of the public about the products containing low or no mercury and the promotion of such products. Digital mercury-free thermometers have been purchased as promotion material within the project.

Second Stage: Development of Training and Outreach Materials

At the second stage of the project, the expert team provided visual aids for awareness raising activities. While preparing MIA-related materials, as well as annual reports by the Ministry of Ecology and Natural Resources the current environmental situation in Azerbaijan was described. The results of the inventory carried out by the project experts and the country's economic performance indicators concerning the issue were included in the materials. The printed materials were comprised of a brochure (“Mercury Threat – Time for Action), two fliers ("Mercury Threat” and “Minamata Convention on Mercury") and a specially designed paper bag to put these materials. The texts of the booklets and the fliers were written in a simple, easy-to-understand language, with numerous illustrations.



“Mercury Threat - Time for Action. This 32-page booklet, published in 2000 copies in Azerbaijani language contains the following information in the language that a wide readership will understand:

✓ Historical facts about damage to human health by mercury and chronological tables reflecting the Minamata Convention;

✓ Preliminary information on the physical and chemical properties of mercury;

✓ Global mercury extraction;

✓ Industries that use mercury in the world and in Azerbaijan for various purposes;

✓ Foodstuffs, medical and cosmetic products, household appliances containing mercury;

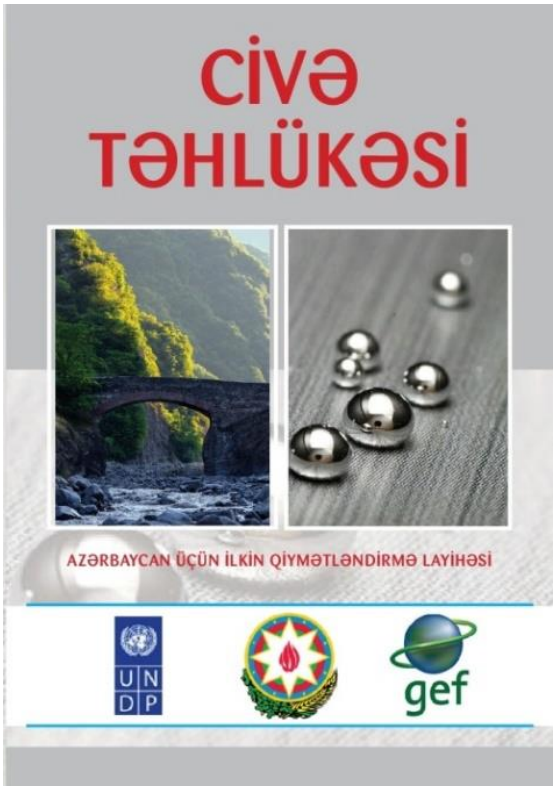
✓ Adverse impacts of mercury on human health and ecosystems;

- ✓ The need for special utilization of mercury containing wastes, work performed for gradual reduction of mercury production and products in the world, and steps to be taken in the near future.

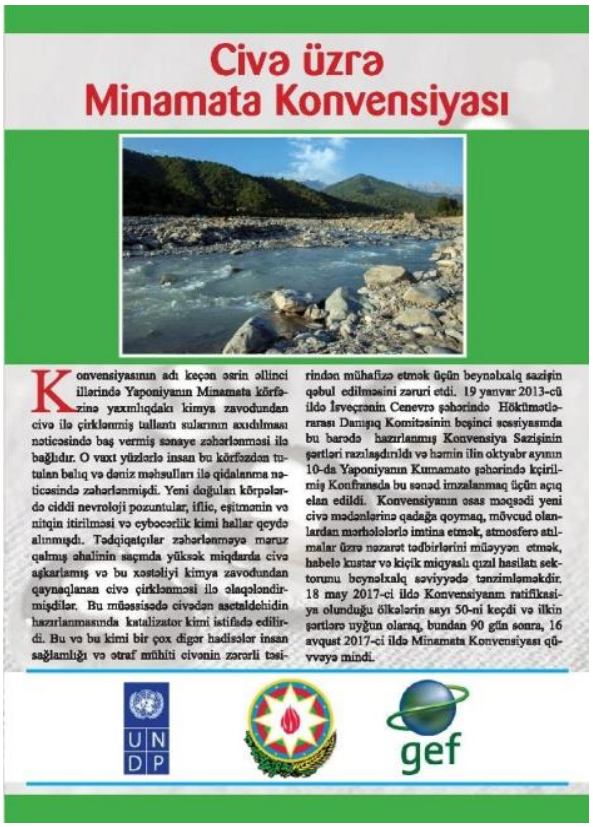
The booklet provides a summary of the basic provisions of the Minamata Convention, its main terms for its accession and the significant role of the Convention in the reduction of the scale of mercury-related environmental hazards.

"Mercury Threat - An Initial Assessment for Azerbaijan"

A six page flier has been published in Azerbaijani language with 5,000 copies printed. The information on the physical and chemical properties of the mercury element is given at the beginning of the material. Also, information on mercury containing household and industrial areas, mercury products, their threats, sources causing its emission and release to the environment, and presence in the food chain is given in tables and figures. Complications caused by mercury in the human body, especially in pregnant women and for the health of developing fetuses and infants are also listed.



The instructions on safe removal of the broken mercury-containing devices at home and elimination of mercury are provided in a visual aid. There is a list of the symptoms in case of **poisoning** due to **mercury** exposure.



The target group of this outreach material will mostly be decision-makers, government agencies, and the media. The information on the need of the formation of such a global agreement, its history, and importance is provided. The flier includes the latest information on the number of countries that have signed and ratified the Convention, as well as extracts from the main provisions of the Convention.

The visual aid also reflects the results of the inventory carried out in Azerbaijan and the need to join the Minamata Convention by Azerbaijan.

The materials were distributed not only to the population, but also to general and academic libraries to expand coverage.

Promotional Materials

In addition to printing materials, 1000 specially designed paper bags were ordered for a more accurate visualization and awareness-raising purposes and the same number of digital mercury-free thermometers were purchased as well.





Third Stage: Public Awareness

During the implementation of the project, articles on the general environmental threat of mercury, its harmful effects on human health, symptoms and consequences of mercury poisoning, as well as about the Minamata Convention and the role of the current project in accession of Azerbaijan to the Minamata Convention and its progress have been published in the media (e.g., the "525th newspaper", "Azerbaijani teacher" and "Kaspi"). Local TV channels held TV debates and broadcasted informative video materials. A website and FB page were designed to spread information about the project. Video of the held meetings were posted at YouTube https://www.youtube.com/watch?v=tefxXiNIoxE&feature=youtube

Mercury is one of the most dangerous chemicals https://www.youtube.com/watch?v=mnJXf0kLQg8&t=7s

Visits to up to 10 cities and regions of the country, such as Ganja, Sumgait, Khachmaz, Lankaran, Shaki and Shamakhi were organized within the project and during the meetings held with the various target groups (health workers, university students and schoolchildren, local representatives of the MENR, municipalities, NGOs and media representatives) they were informed about the project and the prepared visual aids were presented to the participants, as well as to the libraries of the organizations hosting the meetings. During the meetings, small quizzes on the subject were

held and mercury-free thermometers were presented to the winners as a gift from the project budget.










Figure 20. Public meetings

Chapter VI. Activity Priorities and their Implementation Plan

The Minamata Convention is organically linked to other relevant UN conventions by regulating mercury and its compounds belonging to harmful chemicals. Azerbaijan joined two of the four international documents closest to the Minamata Convention - the Stockholm and Basel Conventions, and in relation to the ratification of the Rotterdam Convention, it made an initial assessment and made relevant proposals to the governmental agencies. The initial assessment of the Minamata Convention is now underway. In the course of initial assessment, a detailed analysis of national legislation and institutional framework that regulates chemicals management has been conducted, gaps and deficiencies have been identified, inventory of mercury and mercury containing substances has been prepared and concrete proposals have been made. The Expert group on the Minamata Initial Assessment has considered it appropriate to join the Convention by Azerbaijan.

Under the Convention, the country involved in this international document may, following the initial assessment, develop an implementation plan (action plan) to fulfill the obligations arising from the Convention - although this is not a compulsory requirement. The decision on this matter was made after taking into consideration the national condition and experience. Azerbaijan's legislative practices do not envisage the adoption of such an action plan until it becomes a party to the Minamata Convention. While the action plan is still being developed, its main trends can be shown. Certainly, new priorities may arise in Azerbaijan's accession to the Convention. However, the initial assessment has identified the followings as the key trends:

Objective 1: Strengthening Legal and Institutional Framework

The identification of the key targets, relevant measures and their implementation within the framework of the Action Plan should be developed based on the commitments described after joining the Convention. The agencies responsible for the implementation of the measures to be envisaged in the Action Plan (and their associated timelines) will be the state authorities, relevant NGOs, and other stakeholders. Considering the strengthening of the legal and institutional framework for the field the development and adoption of relevant legal acts for this purpose will be enhanced.

Objective 2. Sustainable Management of Mercury and Mercury Waste

Minimizing the use of mercury and mercury compounds through the gradual replacement of various mercury-containing equipment, tools and devices, especially from point sources, and mitigation of the impact on the environment and human health will serve as important activities. Improvement of temporary storage of mercury, its combinations and wastes, improvement of existing landfills and capacity building, and strengthening of the management of mercury waste and polluted areas (i.e., air, soil, water) will also be key objectives.

Objective 3. Outreach and Awareness-raising Activities

Developing and implementing promotional, awareness-raising and preventive measures to help the people affected by mercury and mercury compounds will strengthen health care services. The exchange of scientific, technical, economic, environmental and legal information on chemicals, including information on toxicological and eco-toxicological and environmental safety issues, mercury and mercury compounds, and its dissemination will further broaden awareness.

Objective 4. Application of Advanced Technology and Environmental Practices

Material, technical and financial support for activities undertaken for the Convention in line with national policies, priorities, state programs, strategic road maps and action plans targeted at the protection of the environment and human health is important. For capacity building and applying appropriate state-of-the-art technology and environmental practices, identification of appropriate financial sources will remain a high priority and may include: state budget, loan funds, aids from international organizations, voluntary payments, and other sources not prohibited by national legislation.

Objective 5. Research, Monitoring and Accountability

Inclusion of scientific investigations, monitoring and developing reports describing the important components of the work to be conducted upon joining the Minamata Convention are key. Developing monitoring and accountability mechanisms to conduct investigation within the Action Plan are envisioned as a re-preparing relevant reports by the National Authority for the country on the fulfillment of the obligations undertaken by Azerbaijan in the manner and within the timeframe established by the Convention, and ultimately submission to the Convention Secretariat.

Chapter VII: Mainstreaming of Mercury Priorities

Accession to the Minamata Convention and its implementation will require the public, private sector and civil society to take a comprehensive approach to the management of hazardous chemicals.

Although not directly linked to the Minamata Convention, mercury is included as a hazardous chemical priority in a number of existing political documents adopted in the country. Among them are: "State Strategy for Hazardous Waste Management in the Republic of Azerbaijan", Decree of the President of the Republic of Azerbaijan "On Additional Measures in in the field of International Agreements and Treaties on Protection of Environment acceded to by the Republic of Azerbaijan", Order of the President of the Republic of Azerbaijan "On Comprehensive Action Plan for 2006-2010 on Improvement of Environmental Conditions in the Republic of Azerbaijan", "Strategic Roadmap covering National Economy Perspectives of the Republic of Azerbaijan", and "Azerbaijan 2020: The Vision for the Future." These documents are based on the country's key development targets and help to identify current and future actions for protection of the environment, including hazardous substances and waste management.

Table 18. A number of political documents adopted in the country on the mercury-hazardous chemicals that are not directly related to the Minamata Convention

Development Plan / State Strategy / State Program / Name of Political Document	Main content (results or conclusion)	Term	The envisaged priorities
Cabinet of Ministers' decision on Approval of State Strategy for Hazardous Waste Management in the Republic of Azerbaijan	Establishing a system for the management of hazardous waste in accordance with international standards and the United Nations Framework Convention for the Prevention of Transboundary Movements and Elimination of Hazardous Wastes and the reduction of harmful effects of hazardous wastes on human health and the environment.	***2006-2010*** ***Draft of the document for the next period is under approval by the Cabinet of Ministers***	Within the framework of the Initial Mercury Assessment, the institutional capacity of the relevant agencies, including political, regulatory and institutional framework, was assessed and gaps were identified; Also, various sources of mercury were identified and evaluated
Order of the President of the Republic of Azerbaijan on approval of "Strategic Roadmap covering National Economy Perspective of the Republic of Azerbaijan"	***4.3 Interpretation of the Target*** Based on the protection of the ecological balance, an efficient management system of waste management, including harmful gases, wastewater and radioactive wastes will be established.	2016-2020	Drafting relevant action plans for ensuring implementation of Strategic Road Map; Establishment of waste management system; Will be established regional centers in capital and regions.
Azerbaijan 2020: The Vision for Future	The required efforts will be made to eliminate wastes, their recycling, reuse, as well as the	2013-2020	Using cutting-edge methods, and

Development Plan / State Strategy / State Program / Name of Political Document	Main content (results or conclusion)	Term	The envisaged priorities
	application of low-waste or non-waste technologies for the protection of the environment. (currently implemented legislative documents are based on this)		establishment of waste recycling facilities Applying green technologies to different economy sectors.

In general, it should be noted that although Azerbaijan has not yet joined the Minamata Convention, protection against chemicals is an important priority and strategic goal of the country.

Particularly, note that in case of any discrepancies between the international laws acceded to by Azerbaijan and the laws of Azerbaijan, the Constitution of Azerbaijan emphasizes that international laws shall prevail. Therefore, accession to the Minamata Convention will strengthen national legislative framework in relevant field and have a significant impact on applicable laws and regulations in Azerbaijan.

ANNEXES

ANNEX 1. List of stakeholders

Name	Title	Organization
Chingiz Mammadov	Senior Programme Advisor	UNDP Azerbaijan
Shamil Huseynov	Head of Department, legal expert	National Palaiment (Milli Majlis), Natural recources, energ and environment department
Islam Mustafayev	Chief Specialsit, Director	Institute of Radiasion problems
Yashar Karimov	Chief Specialsit	Ministry of Ecology and Natural Recources
Elkhan Mammadov	Project expert	UNDP
Nuraddin Haydarov	Head of Department	Ministry of Education,
Sevda Khalilova	Head of Occupational Diseases Institute	Ministry of Health, Scientific Research Institute of Medical prophylaxis
Hasan Huseynli	Project expert	UNDP
Elana Alizade	Project expert	UNDP

ANNEX 2. Summary of the mercury inventory generated in Azerbaijan.

Table 19. Source category

Source category	Estimated Hg input, Kg Hg/y	Estimated Hg releases, standard estimates, Kg Hg/y							Percent of total releases *3*4
		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	0%
Other fossil fuel and biomass combustion	107.9	101.5	0.0	0.0	0.0	0.0	6.4	108	1%
Oil and gas production	3,064.9	440.5	608.8	0.0	870.0	0.0	1,018.3	2,938	34%
Primary metal production (excl. gold production by amalgamation)	53.8	9.6	5.0	0.0	0.4	32.5	6.3	54	1%
Gold extraction with mercury amalgamation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0%
Other materials production*6	316.5	188.3	0.0	0.0	128.2	0.0	0.0	316	4%
Chlor-alkali production with mercury-cells	-	-	-	-	-	-	-	0	0%
Other production of chemicals and polymers	0.0	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	0%
Application, use and disposal of dental amalgam fillings	-	-	-	-	-	-	-	0	0%
Use and disposal of other products	2,468.9	634.9	278.0	652.7	0.0	736.6	166.8	2,469	29%
Production of recycled metals	5.5	1.8	0.0	1.9	0.0	1.8	0.0	6	0%
Waste incineration and open waste burning*2	952.4	726.2	0.0	0.0	0.0	0.0	226.2	952	11%
Waste deposition*2	162.0	1.6	0.0	0.0	0.0	0.0	0.0	2	0%
Informal dumping of general waste *2*3	1,300.0	130.0	130.0	1,040.0	0.0	0.0	0.0	260	3%
Waste water system/treatment *4	2,650.0	0.0	1,325.0	742.0	0.0	331.0	252.0	1,325	15%
Crematoria and cemeteries	137.5	0.0	0.0	137.5	0.0	0.0	0.0	138	2%
TOTALS (rounded) *1*2*3*4*5*6	**6,270**	**2,230**	**1,020**	**1,530**	**1,000**	**1,100**	**1,680**	**8,570**	**100%**

*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.

*6 To avoid double counting, fossil fuel mercury contributions to cement production was subtracted automatically in the TOTALS.