



# GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

For more information about GEF, visit [TheGEF.org](http://TheGEF.org)

## PART I: PROJECT INFORMATION

Project Title:	Reducing global and local environmental risks from primary mercury mining in Queretaro Mexico		
Country(ies):	Mexico	GEF Project ID: <sup>1</sup>	
GEF Agency(ies):	UNEP (select) (select)	GEF Agency Project ID:	01294
Other Executing Partner(s):	SEMARNAT	Submission Date:	
GEF Focal Area(s):	Chemicals and Wastes	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of parent program:	[if applicable]	Agency Fee (\$)	630,000

## A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES<sup>2</sup>

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
(select) CW-2 Program 4 (select)	GEFTF	7,035,000	42,000,000
<b>Total Project Cost</b>		<b>7,035,000</b>	<b>42,000,000</b>

## B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: Prevent the risks to environment and human health from mercury through the establishment of a comprehensive strategy to control primary mercury mining and to enable environmentally and socially sound alternative economic activities and livelihoods in the state of Queretaro.					
Project Components	Financing Type <sup>3</sup>	Project Outcomes	Trust Fund	(in \$)	
				GEF Project Financing	Co-financing
1. Assess current regulatory framework and market based mechanism for reducing mercury use.	TA	1.1 Relevant regulation for mercury management, use and trade is adopted	GEFTF	250,000	800,000
2. Mercury extraction is characterized and controlled	TA	2.1 Mexico has the capacity for identification of mercury sources, quantification, monitoring of mercury emissions/releases in the primary mining sector	GEFTF	1,750,000	10,000,000
3. Mercury emissions/releases are minimized and remediation needs are estimated.	TA	3.1 Production process ensures controlled emissions/releases to the environment and exposures in pilot sites 3.2 Remediation mapping and planning are undertaken	GEFTF	2,000,000	10,500,000
4. Alternative livelihood options are implemented	TA	4.1 Alternative economic activities and livelihoods are implemented in Queretaro	GEFTF	2,000,000	10,500,000
5. Awareness raising and communication	TA	5.1 Miners and communities adopt safer practices	GEFTF	700,000	4,200,000
Subtotal				6,700,000	36,000,000
Project Management Cost (PMC) <sup>4</sup>			GEFTF	335,000	4,550,000

<sup>1</sup> Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

<sup>2</sup> When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

<sup>3</sup> Financing type can be either investment or technical assistance.

<b>Total Project Cost</b>		7,035,000	40,550,000
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For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: ( )

**C. INDICATIVE SOURCES OF Co-financing FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE**

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	SEMARNAT	In-kind	15,000,000
National Government	Ministry of Health	In-kind	5,000,000
National Government	Ministry of Employment and Social Security	In-kind	350,000
National Government	National Institute of Social Economy	In-kind	450,000
National Government	Ministry of Economy	In-kind	6,000,000
National Government	Ministry for the Development of Agriculture	In-kind	1,000,000
National Government	Ministry of Foreign Affairs	In-kind	450,000
State Government	State of Queretaro	In-kind	12,000,000
GEF Agency	UNEP	In-kind	300,000
Donors	CEC	Grant	
<b>Total Co-financing</b>			40,550,000

**D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS <sup>a)</sup>**

GEF Agency	Trust Fund	Country/Regional/ Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) <sup>b)</sup>	Total (c)=a+b
UNEP	GEFTF	Mexico	Chemicals and wastes	Mercury	7,035,000	633,150	7,668,150
<b>Total GEF Resources</b>					7,035,000	633,150	7,668,150

a) Refer to the [Fee Policy for GEF Partner Agencies](#).

**E. PROJECT PREPARATION GRANT (PPG)<sup>5</sup>**

Is Project Preparation Grant requested? Yes ☒ No ☐ If no, skip item E.

**PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS**

<b>Project Preparation Grant amount requested: \$200,000</b>					<b>PPG Agency Fee: \$18,000</b>		
GEF Agency	Trust Fund	Country/Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee <sup>6</sup> (b)	Total c = a + b
UNEP	GEFTF	Mexico	Chemicals and Wastes	Mercury	200,000	18,000	218,000
<b>Total PPG Amount</b>					<b>200,000</b>	<b>18,000</b>	<b>218,000</b>

<sup>4</sup> For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

<sup>5</sup> PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to \$2m (for MSP); up to \$100k for PF up to \$3m; \$150k for PF up to \$6m; \$200k for PF up to \$10m; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

<sup>6</sup> PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

## F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS<sup>7</sup>

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>Hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>Hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO <sub>2e</sub> mitigated (include both direct and indirect)	<i>metric tons</i>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>metric tons</i>
	Reduction of 1000 tons of Mercury	<i>15 metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

## PART II: PROJECT JUSTIFICATION

1. *Project Description.* Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area<sup>8</sup> strategies, with a brief description of expected outcomes and components of the project, 4) [incremental/additional cost reasoning](#) and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and [co-financing](#); 5) [global environmental benefits](#) (GEFTF) and/or [adaptation benefits](#) (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling up.

### 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed

Metals are a natural part of the earth's crust and are found in rocks, soils, sediments, water and volcanic eruptions. However, in the years following the industrial revolution major changes occurred in the natural concentration of metals, due to their widespread use for industrial and human purposes. This is particularly the case of mercury, a renown toxic metal.

Mercury intoxication manifests in neurological and kidney impairments and autoimmune effects. Symptoms may intensify and/or become irreversible as exposure duration and concentration increase. Methylmercury intoxication is known as Minamata disease, after a bay in Japan where methylmercury releases were the source of severe and

<sup>7</sup> Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and/or SCCF.

<sup>8</sup> For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving.

irreversible effects on human health. Methylmercury, when circulated throughout the body, crosses the blood-brain barrier and accumulates in the central nervous system. Methylmercury has also been found to cross the placenta with ease, directly affecting fetuses in utero (Artisanal and small-scale gold mining and health, WHO, 2016). Mercury can also cause serious damage to ecosystems. Mercury can be cycled between the atmosphere and land several times after being finally deposited from the atmosphere to a specific environmental media, and can also be transported long distances by air and water, thus making it a significant global pollutant. One direct way to reduce mercury exposures and releases to the environment is the reduction of mercury use in industrial processes and products.

In the environment, mercury is found naturally as cinnabar (HgS), but human activities such as mining, increases its presence within the atmospheric, terrestrial, biotical and aquatic systems.<sup>9,10</sup> The effect of cinnabar mining represents an environment concern, since mercury itself but also abandoned and enriched open air mining tailings are considered permanent sources of atmospheric mercury emissions. Erosion and drainage of these tailings could contain high levels of mercury that affect the water and biota quality.

In Mexico, mercury mining activity has been present since the pre-Hispanic period, because communities used cinnabar as colorant and in their religious ceremonies. However, during the colonial period, New Spain (Mexico) did not produce mercury. This would appear surprising considering that mercury was an essential commodity for the silver mining carried on there, and that demand for mercury in the silver mines of the West Indies was not met by Spain's own mercury mine in Almaden, while significant mercury reserves existed in Mexico. In fact, the Spanish Crown issued several royal documents (*Cedulas Reales*) in 1728 and 1730, ordering the closure of mercury mines (in Cuernavaca and Zacatecas) in order to have control over silver production. It is probable that Spain also wanted to promote mercury mines in Peru and Spain<sup>11,12,13</sup>. Mexico achieved independence from Spain in 1821, and this independence from foreign sources began to encourage the development of domestic mercury mining. By 1843, mercury was being mined formally in Mexico, when production started as a result of governmental decrees and initiatives such as tax elimination and rewards to miners who produced 2,000 quintals (92 metric tons) of mercury. This amount was produced for the first time in Guadalcázar, San Luis Potosí. However, by then the large-scale exploration of mercury deposits was of less interest to the miners, in contrast to the more lucrative mining and exploitation of silver and gold reserves<sup>14</sup>.

Mercury production during the period of 1896–1921 amounted to 4,374 metric tons, with an annual average of 168.2 metric tons. The peak year for this period was 1898, with 353 metric tons, while only 33 metric tons were produced in 1917. During the period from 1840 to 1994 Mexico produced an estimated 35,555 metric tons of mercury, with a yearly average of 229 tons. The peak years of production were 1942, with 1,117 metric tons, and 1955, with 1,030 metric tons, while 1994 was the final year of primary production and had the least production according to information from the Mexican Council of Mineral Resources (CRM- Consejo de Recursos Minerales). There has been no official primary mining of mercury reported in Mexico since 1994. According to the same source, the operations stopped due to a decline in the price of mercury, resulting from a decrease in the demand for this metal. However, informal mercury mining reappeared in the last few years as explained below.

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<sup>9</sup> Mason R.P., Sheu G.R. 2002. Role of the ocean in the global mercury cycle. *Global Biogeochemical Cycles*, 16:41093.

<sup>10</sup> Selin N.E. 2009. Global biogeochemical cycling of mercury: a review. *Annual Review of Environment Resources*, 34: 43-63

<sup>11</sup> Lang, M.F. 1969. La Búsqueda de Azogue en el México Colonial. *Historia Mexicana* XVIII (4). México DF: El Colegio de México, 473-485.

<sup>12</sup> Lang, M.F. 1977. *El Monopolio Estatal del Mercurio en el México Colonial (1550-1710)*. México DF: Fondo de Cultura Económica.

<sup>13</sup> Segura, D. 1941. *El Mercurio en México*. México DF: Secretaría de la Economía Nacional, Dirección General de Minas y Petróleo.

<sup>14</sup> González-Reyna, G. 1947. *Riqueza Minería y Yacimientos Minerales de México*. México DF: Monografías Industriales del Banco de México, S.A.

Yields from Mexican mercury ores range from 0.33 to more than 10 percent in mercury content. The higher the mercury content of the ore, the lower the cost of production. During the 1940s to 1960s, when market demand and prices for mercury were high, significant investments were made in costly machinery for mining and in resources for exploration. But from the 1970s to the early 1990s, mercury mining in Mexico was only considered a secondary activity, dependent on high international market prices to make the activity profitable. From the mid-1990s to the present, it has been possible to produce mercury at relatively lower costs than in the past through informal (not officially reported) mercury mining. According to the statistical official records of DGGIMAR Dirección General de Gestión Integral de Materiales y Actividades Riesgosas (General Direction for Integrated Management of High Risk Materials and Activities) of SEMARNAT, Mexico imported mercury until 2013. Since that year, Mexico started exporting the metal, having a peak in 2013 of 1,391 tons.

The mercury exported from Mexico goes principally to South America (2013- April 2016): 29% is exported to Colombia, 24% to Guatemala, 14% Bolivia and 12% Peru; the remaining 21% is exported to countries such as Paraguay, Singapore and India (for manufacturing thermometers, laboratory equipment and salts for industrial use) among others.

The richest mercury deposits in Mexico are located in central states, like Nuevo Mercurio in Zacatecas, Sierra Gorda in Queretaro, and the High Plateau in San Luis Potosi. Previous reports based in information generated by the Mexican Geological Service (SGM). Rodríguez-Galeotti<sup>15</sup> concluded in 2006 that out of a total of 4,705 registered mineral-producing mines, 83 former mercury producing mines have favorable geological conditions for the resumption of productive and economically advantageous exploitation. These mines are located in six states. Of these 83, 66 produced only mercury and 17 produced mercury and other minerals (2006). Most of these mines are located in the following areas: Sierra Gorda Region (San Joaquin, Peñamiller, Pinal de Amoles and Palo Verde zones), in Queretaro; Northern High Plateau (Real de Catorce and Guadalcázar zones), in San Luis Potosi; and San Felipe Nuevo Mercurio (and other zones), in Zacatecas. In these regions, high mercury levels are found beyond any standard in both humans and the environment; e.g. in bones of pre-Hispanic population (17.6 ppm), in agricultural soils (314.6 ppm), in mining tailings (4,164.4 ppm), in drinking water (2 ppt), and in the air (414.8 ng m<sup>-3</sup>)<sup>16</sup>. A research project from the University of Queretaro studied total mercury content in the different compartments (rainwater, air, mine tailings, sediments, forest soils, agricultural soils, maize and drinking water) of the San Joaquin region. The results show that the greatest contamination source of mercury is found in the open air mining tailings, adding a deficient processing of cinnabar. These tailings are exposed to air and water erosion, which transport mercury particles both to the atmospheric and terrestrial landscape. This has repercussions on the concentration levels of mercury present in air, rainwater, forest and agricultural soils, as well as in sediments. There are a great number of open-air mining tailings, located in the surrounding areas of the abandoned mines, becoming a serious risk to people and the environment. Rodríguez-Galeotti in his study of 2006 argued that the State of Queretaro best meets the social, political, and basic infrastructure conditions for the investment of economic and material resources in developing mining of mercury and of other minerals, such as gold, silver, lead, antimony and zinc, especially at a small or medium scale.

One of the region with the largest deposits and most mine, the Sierra Gorda, is a Biosphere Reserve, located in the northern part of Queretaro State. It was established by Presidential Decree in 1997. It is the protected area with the greatest ecosystem diversity in Mexico, with: 14 different types of vegetation – more than 1,700 plant species – with a high level of endemism; nearly 600 vertebrate species, including the black bear (*Ursus americanus*), the military macaw (*Ara militaris*), the spider monkey (*Ateles geoffroyi*) all six feline species present in Mexico (jaguar (*Panthera onca*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), margay (*Leopardus wiedii*), ocelot (*Leopardus*

<sup>15</sup> Rodríguez-Galeotti, E. 2006. La minería de mercurio en México. *Boletín de Mineralogía* 17, pp. 29–36. Quadrum Metals & Minerals. Mexico: Universidad Autónoma del Estado de Hidalgo, Academia de Ciencias de la Tierra. Available at: <<http://smm.iim.umich.mx/>>.

<sup>16</sup> Hernández-Silva G., Scharek P., Bartha A., Solorio-Munguía G., Vasallo-Morales L., Lugo de la Fuente J., Tullner T., Centeri C., Martínez-Reyes J. 2009. Mercurio en suelos, sedimentos y terreros al sur de la Sierra Gorda de Querétaro, México. En: Mercurio: Impacto en el hombre y la naturaleza, al sur de la Sierra Gorda de Querétaro, México (Ed.) Centro de Geociencias, campus UNAM-Juriquilla, Querétaro, México.

pardalis) and jaguarundi (*Herpailurus yagouaroundi*). It is home to approximately 30% of all butterfly species in Mexico. Many of these plant and animal species are representative of the Nearctic and Neotropical ecozones, which makes the Sierra Gorda region one of the most important and unspoiled transition zones in the country. It is also an important centre of speciation and endemism for cactii, with relatively large and well-conserved habitats. Of special concern for artisanal mining is the region's altitudinal variation, which ranges from 300 to 3,100 metres above sea level. UNEP and SEMARNAT project on biodiversity of the Sierra Gorda's biological wealth reported<sup>17</sup> to be under increasing pressure from a population of around 100,000 inhabitants, and unsustainable activities such as: illegal logging; forest fires and clearing of land for agricultural use; pests; erosion; pollution of rivers with urban and agricultural wastes; a lack of forestry administration and training programmes and of alternative and less harmful productive options. All these present the most obvious threats to the integrity of the region's ecosystems – representative of the world's natural heritage – and to the species that inhabit it. Notable actions to protect the area and improve the livelihood of some communities were achieved under biodiversity projects, particularly one supported by the GEF that concluded in 2009. However, the highly polluting activity of informal mercury exploitation has not been addressed previously, and more than one hundred mercury mines are known to exist in this area.

The population of the Sierra Gorda is approximately 6% of the total population of Queretaro State. It is distributed among five municipalities (Pinal de Amoles, Arroyo Seco, Jalpan de la Serra, Landa de Matamoros and Peñamiller) and more than 638 settlements<sup>18</sup>. According to the 2005 and 2010 censuses<sup>19</sup>, it grew from 95,755 to 103,888. The proportion of men to women varies from 90 to 96 men for every one hundred women in the different municipalities. The median age ranges from 18 to 24 years old. Less than 0.5% of these five municipalities' population speaks an indigenous language. In Jalpan de la Serra this percentage is slightly higher (1.1%). In any event, according to the classification proposed by the National Population Council as applied to the population census data, the indigenous presence in these communities, is low (< 10%)<sup>20</sup>. Means of livelihood are limited in this area, which is a cause of emigration and informal activities, including mercury mining. The proportion of families with an income of less than twice the minimum wage (which is currently approximately 3.8 USD per day) varies from 50 to 76% in the different municipalities. Informal mercury miners reported earnings from 2.7 to 5.5 times the minimum wage, depending on their level of production, while miners working in either of the two well-established industrial non-mercury mines in the state earn ten times the minimum wage<sup>21,22</sup>. Remittances from community members who have migrated permanently to the United States are a major source of income for some families in this area<sup>23</sup>.

On the international scene, in February 2009, the Governing Council of The United Nations Environment Programme (UNEP) began the development of a legally binding global instrument on mercury (Hg). In January 2013, governments agreed to a text for this instrument: the Minamata Convention on Mercury. In October 2013, the Convention was signed in Minamata, Japan, and it has been ratified by 28 countries including Mexico. Article 3 of the Convention focuses on mercury supply sources and trade issues, particularly addressing that: (i) each Party shall not allow primary mercury mining that was not being conducted within its territory at the date of entry into force of the Convention for it; and (ii) each Party shall only allow primary mercury mining that was being conducted within its territory at the date of entry into force of the Convention for a period of up to 15 years after that date. This article has clear implication for the mercury production areas of Mexico, Mexico having ratified the Convention in September 2015.

<sup>17</sup> Concept paper for full-sized scale project: *Biodiversity Conservation in the Sierra Gorda Biosphere Reserve*. 2000.

<sup>18</sup> CONANP [http://sierragorda.conanp.gob.mx/que\\_hacemos.php](http://sierragorda.conanp.gob.mx/que_hacemos.php)

<sup>19</sup> INEGI. *Información nacional por entidad federativa y municipio*  
<http://www3.inegi.org.mx/sistemas/mexicocifras/default.aspx?e=22>

<sup>20</sup> CONAPO. *Índice de marginación por entidad federativa y municipio 2010*

<sup>21</sup> <http://www.elfinanciero.com.mx/economia/explotacion-ilegal-de-mercurio-actividad-para-la-sobrevivencia.html>

<sup>22</sup> <http://adninformativo.mx/genera-mineria-9-mil-empleos-informales-en-queretaro/>

<sup>23</sup> Evaluación de Cierre del Proyecto “Conservación de la Biodiversidad en la Reserva de la Biosfera Sierra Gorda”. GEF, CONANP-SEMARNAT, UNDP-Mexico and Grupo Ecológico Sierra Gorda I.A.P. June 2009

The Government of Mexico, in its Environmental & Natural Resources Sectorial Programme (2013-2018) indicates that for the Minamata Convention to be complied with, one of the major cross-cutting issues is the lack of capacity to manage mercury emissions and wastes involved in the primary mercury extraction process carried out in an artisanal, low-efficiency method by the working communities. These include outdated legal and regulatory frameworks, lack of human and financial capacity, and low public awareness of the environmental and health hazards associated with forms of mercury generated through the chemical process. Other problems are poor mercury waste management practices at primary mining centres, which contribute highly to mercury emissions, and potentially contaminated sites due to inadequate storage or chemical treatment.

Through this project, risk management approaches will be developed to reduce human and environmental exposure to mercury. In addition, alternative productive activities to primary mercury mining will be developed. This will be done by identifying activities to reduce risks in and derived from primary mercury mining in Queretaro, Mexico, and developing alternative mining and other economic options that will prepare mine-based communities to reduce and eventually abandon artisanal primary mercury mining in Mexico.

The approach for reducing human exposure and environmental impacts will be based on the results of previous research and on an innovative intervention framework proposed by a research team from the autonomous universities of San Luis Potosi and Queretaro that are working in the area. This approach includes (1) Risk characterization with community participation; (2) improvement of the capacities of the community to deal with environmental and social threats; (3) development of programs based on risk characterization (i.e. risk communication, human exposure and environmental surveillance, improvement in the legal framework, in this case to protect human health and the environment in the context of the Minamata Convention); and (4) sustainable development, focused on the environment, economy, health and social issues. The ultimate goal of this approach is to work with miners and communities to decrease the impact of mining operations by introducing new technologies, extraction of alternative minerals, and human development.

In regards to the development of economic alternatives to mercury mining, some information sources, practical experiences and potential counterparts already exist. Some research groups from the Autonomous National University of Mexico have done extensive work on the geology of Queretaro, its mineral deposits and mining potential. Some environmentally-friendly economic activities have been implemented in various communities (under the Sierra Gorda Reserve Project), and SEMARNAT has some ongoing programmes to offer and to be adapted to the region.

### **Barriers to be addressed**

*Social acceptance of change in their economic activity.* Mercury mining has been present in Queretaro State to a greater or lesser extent since the pre-Hispanic period. This type of activity is strongly traditional in the communities that depend on it, and it is possible that the miners are reticent to (1) modify the current technology and practices; (2) mine another kind of mineral; or (3) change to another kind of (non-mining) activity. Therefore, it is important that communities are involved and good communication occurs during the development of options.

*Lack of education/training of the members in the mining communities.* The current practice of informal mercury mining involves rudimentary methods that involve hard work but not a great deal of qualification. There is little familiarity with the more current technologies and the level of schooling is low. Thus the learning of new practices and activities may be difficult, and motivation will play a crucial role.

*Significant data gaps related to Hg in the communities and surrounding environment.* Mercury data in environmental compartments (water, soil, sediments and air) and human biological samples is scarce in the Sierra Gorda of Queretaro. Although there are some studies, additional measurements will be needed.

*Lack of alternative profitable economic activities in the Sierra Gorda area.* Generally speaking income is low in these communities. There are few options for economic activity, and in fact informal mercury mining offers greater income than other activities in the communities under study. Nonetheless, there is experience in implementation of other activities related to ecotourism and tree farming that may be assessed in parallel with other proposals.



*Lack of information/dissemination concerning the health effects of mercury and the environment in the mining communities.* The miners and their families have received little information on the effects of mercury. News has been received only from the researchers working with Camargo and Plazuela communities. It is important to expand awareness rising on the topic and implement actions for risk communication.

*Need for transparency, accountability, and public information and stakeholder participation mechanisms.* In order to build credibility and trust it is important to establish communication with the involved communities from the beginning of the project, all along the different activities and up to the dissemination of the products.

*Raising technical standards of research institutions to provide a better basis for decision-making and management.* Work will be undertaken with the research groups that have experience in the area and with the topics that are part of the project. Determinations of mercury in the environment and biological samples will merit particular attention, due to the reliability, accuracy and reproducibility of the techniques used.

*Legal vacuum* – lack of definition of particular issues like primary mining legal sector and lack of legal and practical guidelines to face it. A diagnosis of the national legal framework is necessary in order to determine the regulatory and normative reforms needed to fully implement the Minamata Convention once it enters into force.

*Obligations under the Minamata Convention* should encourage compliance related to Hg use in primary Hg mining. All of the aspects for compliance with the Minamata Convention will be observed and supervised by the responsible areas of SEMARNAT.

## **2) The baseline scenario or any associated baseline projects**

The 2013 Work on Assessment of Primary and Secondary Mercury Supplies in Mexico carried out by the Commission for Environmental Cooperation focused as its main objectives on: (1) estimating the supplies of primary and secondary mercury in Mexico that could be generated from different sources; (2) assess if extraction of identified mercury reserves and their use would be both economically and technologically feasible; (3) analysing the potential for Mexico to become an unintended but significant source of global mercury supply, following the implementation of elemental mercury bans and uses, especially in ASGM activities. This information can also be helpful in orienting governmental decisions related to the United Nations Environment Programme (UNEP) Legally Binding instrument, as well for the future projects concerning primary mercury issues addressed. Despite the effort of the assessment carried out, there is still an important issue focused on the characterization of mercury stockpiles and common uses. Some of the mines reported as inactive in that characterization are currently active, such as Camargo. Other active mines, for example Plazuela, were not reported. They might or might not be active when the original source of documentation was compiled, however these are examples of how complex the task could be of consolidating a characterization and keeping it updated under the existing informal circumstances.

According to information provided by the Secretariat of Economy (SE - Secretaría de Economía), 314 mercury mines were reported in 2010. In 1968, the Commission for Mining Promotion (CFM- Comisión de Fomento Minero) reported the existence of 1,119 mercury-mining projects. These two sources have been consulted in determining the physical and legal status of each mine, its current condition (exhausted or productive), and the identity of its operator.

Additionally, there is the presence of background coordination with the United Nations Development Programme (UNDP) as the GEF Implementing Agency and the CONANP and SEMARNAT government agencies in the proposed area that involved a past project: “Biodiversity Conservation in the Sierra Gorda Biosphere Reserve RBSG (2001-2009)”. This project helped create bonds and communication between different NGOs and Government Agencies in order to promote efforts to ensure the project financial sustainability to help release the pressure of the area from population and also to propose a long-term conservation management, established and monitored through joint collaborative action by the relevant actors involved. Below is a brief description of the Biosphere Reserve.



The Secretariat of Health in Mexico requires systematic report of cases from all around the country on transmissible and non-transmissible diseases. However, the only intoxication with chemicals that must be reported are those with pesticides. There is no reporting and collection of mercury intoxication cases at any level (national, state or local). However, some studies exist in the area of interest regarding contamination and human exposure among miners and communities.

Data from a study conducted in Plazuela<sup>24</sup> in the municipality of Peña Miller shows concentrations of mercury in urine above the action level and risk level for the general<sup>25,26</sup>, and occupational populations<sup>27,28</sup>. The same study reports levels in soil in residential yards to be above the maximum Mexican standard<sup>29</sup>. Authors also report very low perception of the risk of hazardous exposures to mercury among workers and the community.

### **3) The proposed alternative scenario. GEF focal area strategies, with a brief description of expected outcomes and components of the project**

This project is in line with GEF Focal Area Strategy CW-2: Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies/substances Program 4 Reduction or elimination of anthropogenic emissions and releases of mercury to the environment.

The overall objective of this project is to prevent the exposure of humans and the environment to mercury and its waste of global importance through the establishment of a road map for a significant reduction in mercury production and emissions/releases in the State of Queretaro.

The proposal has been developed under five components. Three of them are assessments of (1) legal and other resources that could support the reduction of mercury extraction, emissions, releases, and exposure; (2) characterization of mercury extraction and the ways it could be controlled; and (3) estimations of emissions, releases and remediation needs. Two other components are fundamentally implementations of (1) alternative livelihood options and (2) awareness raising and communication.

#### **Component 1: Assess current regulatory framework and market based mechanism for reducing mercury use.**

A diagnosis of the national legal framework is necessary in order to determine the regulatory and normative reforms needed to fully implement the Minamata Convention once it enters into force in the region, considering opened and new mines. It is imperative that during the draft regulatory preparation, there must explicitly be the incorporation on how to reinforce the prohibition of new mines in the Sierra Gorda area. A system will be set up for tracking the production in the way of reports considering how much they are producing in each mining center, considering also if the producers are selling it into the domestic market, or exporting it. If exporting occurs, the country of export and purpose of use should be registered and reported to National agencies, providing basis for information Mexico needs to comply with Article 3 “Mercury supply sources and trade”, and Article 21 “Reporting” requirements.

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<sup>24</sup> Camacho et al. “Mercury Mining in Mexico”, in *Annals of Global Health*, Vol. 82, No. 1, 2016 January/February 2016: 149–155

<sup>25</sup> Schulz C, Angerer J, Ewers U, Kolossa-Gehring M. “The German Human Biomonitoring Commission”, in *Int J Hyg Environ Health* 2007; 210: 373e82.

<sup>26</sup> Agency for Toxic Substances and Disease Registry. *Mercury exposure investigation using serial urine testing and medical records review*. Atlanta, Georgia: New Jersey Department of Health and Senior Services Under Cooperative Agreement with the U. S. Department of Health and Human Services Agency for Toxic Substances and Disease Registry; 2007.

<sup>27</sup> Hazardous chemicals requiring health monitoring. Mercury (inorganic). Safe Work Australia, 2013.

<sup>28</sup> American Conference of Governmental Industrial Hygienists. *Documentation on biological exposure indices*. 7th ed. Cincinnati, OH: ACGIH; 2011.

<sup>29</sup> NOM- 147-SEMARNAT/SSA1-2004. *Establishing criteria for determining the concentrations for remediation of soils contaminated by arsenic, barium, beryllium, cadmium, hexavalent chromium, mercury, nickel, silver, lead, selenium, thallium and/or vanadium*. *Diario Oficial de la Federación*. March 2007.

Expected outcome:

1.1 Relevant regulation for mercury management, use and trade is adopted.

Expected outputs

1.1.1 Assessment prepared of the regulation for the management, use and trade of mercury.

1.1.2 Draft of enforcement protocols and regulations for implementation of the Minamata Convention.

## **Component 2: Mercury extraction is characterized and controlled**

In this component the baseline estimates of mercury use in mining enable the government to prioritize and develop effective intervention strategies. Most mercury mines in Queretaro operate in the informal economy, and this presents special challenges when undertaking regional surveys. For this reason a successful and accurate inventory will likely rely on a variety of direct and indirect types of information, provided by the legal and national framework at a federal level. This will include human, technical capacity policies, planning policies and governmental inspection. All information should be entered into a database where the individual pieces can be cross-referenced and compared. The estimation of mercury use and production (formal and informal activities) information can be further checked and constrained through discussion with the various stakeholders such as miners, concession holders, local government, and also national government. The detailed work conducted during an inventory should cover the diversity of mining types that are common, collect data from enough sites to constrain the mercury intensity estimation in order to produce a mercury use estimate with the best possible accuracy in the region. Technical assistance on the characterisation of mercury samples (using isotopic methods for example) will be provided.

Expected outcomes:

2.1 Mexico has the capacity for identification of mercury sources, quantification, monitoring of mercury emissions/releases in the primary mining sector

Expected Outputs

2.1.1 National and subnational Institutional capacity on Minamata Convention implementation built/strengthened.

2.1.2 Characterize the current situation, including the socio-economic baseline

2.1.3 Mapping of the areas where mercury mining activities have taken place, social and economic conditions, including a preliminary risk assessment, elaborated.

2.1.4 Active/abandoned sites related to mining activities characterized.

2.1.5 Guidelines on compliance are drafted

2.1.6 Training programs for relevant stakeholders are developed and implemented

## **Component 3: Mercury emissions/releases are minimized and remediation needs are estimated**

Paragraph 1(c) of Annex C of the Convention requires that, countries must include in their action plans strategies to promote the reduction of emissions, releases and exposures. These should be based on the sound baseline estimations and can include immediate and long-term strategies. Immediate measures can be taken to reduce emissions, releases and risks of exposures to mercury from mining sites, even before longer-term transition to lower-mercury and mercury-free technologies. Used correctly and routinely, mercury capture devices will immediately reduce exposures to miners and to surrounding areas. The proposed outcomes and outputs to be developed in order to fulfil the expected results will include: (1) identification and implementation of mitigation actions based on changes of technology and practices at three pilot sites; and (2) development of a risk prevention strategy and its implementation at pilot sites selected using criteria to be defined by the Universities on the area. Researchers and technical personnel and decision-makers, as well as the community, will be involved in these activities improving the implementation.

Expected Outcomes

3.1 Production process ensures controlled emissions/releases to the environment and exposures in pilot sites

3.2 Remediation mapping and planning are undertaken

#### Expected Outputs

- 3.1.1 Develop a characterization and diagnostic analysis describing the environmental and human health conditions.
- 3.1.2 Targets and indicators for release reductions established.
- 3.1.3 Strategies for minimization of mercury emissions/releases and exposure designed and implemented
- 3.2.1 Potential mercury contaminated sites are identified and mapped.
- 3.2.2 Sites inspection and preliminary assessments undertaken.
- 3.2.3 Identify priority sites for screening actions based on the mercury state inventory
- 3.2.4 Based on the preliminary assessments and samplings estimate remediation costs.

### **Component 4: Alternative livelihood options are implemented**

Banning the practice of mercury mining can be an effective action when coupled with assistance to miners to transition to other practices (or even to other livelihoods, where feasible). To develop and implement national policies and regulations that promote the improvement of primary mercury mining and its allied sectors, and encourage alternative livelihoods where feasible, as well as environmental and safety measures to protect miners and working communities surrounding mining sites. In the region of Sierra Gorda there is a high probability of finding alternative livelihoods since mining communities could develop eco-tourism option as a viable livelihood, or reforestation incentive programs in the surrounding areas could be implemented. SEMARNAT and DG Forestal can work as the implementing agency that promotes these environmental services and diffuse it in the mining communities as a feasible option. Considering another feasible option according to the mining mapping would be the mining extraction of alternative minerals in the surrounding mining districts.

#### Expected Outcomes

- 4.1 Alternative economic activities and livelihoods are implemented in Queretaro

#### Expected Outputs

- 4.1.1 Alternative economic activities are identified and proposed.
- 4.1.2 Alternative economic activities are implemented in pilot sites.

### **Component 5 Awareness raising and communication**

Miners and communities will be informed and involved in the assessment of risks, alternative mining activities and other livelihood options by the implementing/regional agencies.

This component includes activities such as: (1) development of a communications strategy regarding the mercury environmental /health risks and preventive actions that will be disseminated to other communities with mercury exposure throughout the country. This communications strategies should include, the gathering of health data, training for health-care workers and awareness-raising through health facilities. Enable health treatment protocols in place for mercury related health effects, including exposure to mercury in primary mining. Integration of health care structures into and entrusted by communities can provide a readily available platform for awareness-raising about mercury and its dangers. It is important to mention that an effective intersectoral engagement, between health and other relevant agencies, is essential for ensuring the effective implementation of measures to address the public health impacts of exposure and diffusion to similar mining working communities.

#### Expected Outcomes

- 5.1 Miners and communities adopt safer practices

#### Expected Outputs

- 5.1.1 Instruments for the awareness of miners and communities are designed and implemented.

### **4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTE, LDCE, SCCF and co-financing**

With regard to the GEF component of the financial mechanism, the Minamata Convention further provides in paragraph 7 of Article 13 that it “shall provide new, predictable, adequate and timely financial resources to meet costs in support of implementation of this Convention as agreed by the Conference of the Parties.” It also provides that for the purposes of the Convention, the GEF Trust Fund “shall be operated under the guidance of and be accountable to the Conference of the Parties”, that the Fund shall provide resources to meet the agreed incremental costs of global environment benefits and the agreed full costs of some enabling activities” and that the Conference of the Parties “shall provide guidance on overall strategies, policies, programme priorities and eligibility for access to and utilization of financial resources”, as well as guidance on “an indicative list of categories of activities that could receive support from the GEF”.

GEF funding for this project will provide the necessary capacity for Mexico to effectively capitalize on its substantive and proactive efforts to date in addressing formalization of primary artisanal mercury mining, and to sustain these efforts so that the country can move forward to sound mercury management and ultimately to the elimination of such activity, under the terms set out in the Minamata Convention. The proposal for advancing this agenda is to develop a comprehensive approach in Sierra Gorda, Queretaro to be scaled up to other mining regions in the country.

Such progress would be substantially delayed in the absence of the capacity strengthening that this project provides and that GEF support leverages national support for. The actions supported are all linked to the country’s ability to maintain compliance with its current and likely future obligations under the Minamata Convention. GEF support will allow a comprehensive assessment of sources and releases and the development of scaled up national-level mercury risk management approaches.

This project will generate significant local and global benefits as summarized below:

*Local benefits:* This project will allow Mexico to: (1) improve existing regional data on sources and releases of mercury, develop methods to characterize/survey to be piloted in regions within the state of Queretaro; (2) define mercury production, use and consumption in the Sierra Gorda area; (3) provide technical and management support to the development of a local mercury pollution prevention plan; (4) reduce society/communities and the environment mercury exposure; and (5) develop suitable investment based on other mineral resources and other income opportunities for the inhabitants of the Sierra Gorda as a whole, and the protected areas in particular. One of the first activities in this project will be to build a solid baseline of international experiences to then be made available nationally. This baseline – and the resultant updated characterization – will clearly identify information gaps regarding local populations at risk and vulnerable to contamination and management of such risks, through the national mercury risk management approaches. The project will also strengthen national, state and local institutions, build capacity among key staff, and coordinate national action, as well as improving the environmental quality of the Sierra Gorda region.

*Global and regional benefits:* Updating of a regional characterization and national mercury risk management approaches will lay the groundwork for mercury production and emission reduction in the Sierra Gorda and replication in similar mining regions across the country. The outcomes of this project will help to plan the decrease in mercury releases at a regional and global scale. They will also contribute to the effective implementation of the legally binding international instrument on mercury.

The co-financing will be provide by the following initiatives:

An Environmental Protection and Sustainable Development fund in Queretaro was implemented early in 2013, included within the contribution taxes law, which describes the citizen tax amount. This fund was created in order to allocate the amounts collected to the sustainable public policies, programs and projects that contribute to reduce carbon dioxide emissions, as well as those that promote environmental sustainability and renewable energy sources. This previous situation in Queretaro makes available to incorporate new actions focused to comply the Minamata Convention, in the framework of the current state law, with aims to bring as focused country information and disclosure strategies of the mercury problem in Mexico.

This year (2016) is considered an investment of 10 million pesos in environmental protection projects, which will be allocated in Sierra Gorda, Queretaro. This amount is part of the fund mentioned above.

Training on analysis capacity will also be provided as a cost-sharing activity.

## **5) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)**

Mexico is committed to the requirements of the Minamata Convention on mercury. It is necessary that the characterization referring to the market, uses, and production of mercury be regulated. This project aims to strengthen government policies on mercury management in order to guarantee environmental and social protection. It also aims to raise awareness on issues related to optimizing production processes and mercury emissions and would allow workers of the production centres to participate in shaping the future of such management plans.

Raising awareness aimed at sound management of mercury use in primary extraction activities is essential for industrial and local economic growth. There is also a need to manage its extraction processes in an improved and more efficient way. The improvement and efficient extraction of primary mercury – together with appropriate processing and technological facilities – would reduce the current threat to human health and the environment.

An accurate baseline will be established during the PPG phase of the proposed project, to determine more precisely the mercury release reductions that the proposed project will be able to achieve directly (as well as indirectly through replication throughout the country), and areas of potential risk generated by the primary extraction activities. However, for the purposes of this PIF a rough estimate can be made. It is assumed that reductions in mercury emissions will be accomplished by reducing mercury releases from primary mercury mining activities by: (1) identifying the mercury concentrations released; (2) improving environmental sound management practices; (3) providing efficient solutions and (4) implementing national regulatory policies.

## **6) Innovation, sustainability and potential for scaling up**

This project includes a local characterization of mercury products, emissions, releases and contaminated sites. It also creates awareness of adequate management in primary mining extraction and process centres at a local level, through ensuring that all enabling mechanisms are in place and other activities – such as the proper treatment of mercury stockpiles and improvement in the worksites and the communities. It is regional in scope. When the results and proposed innovation procedures (changes in technology) are achieved, they can be replicated in other similar sites around the country. Through improved governance, the activities can be sustained as proper preconditions, and procedures would be developed in primary mining worksites. The inclusion of the private sector and key stakeholders is vital and would also ensure the growth and replication of this model.

The project will use a standardized methodology and tools to develop and/or update the national characterization and national mercury risk management approaches. Through implementation of sound chemical management, Mexico will produce data that is comparable to that of other countries signatories of the Minamata Convention, and will also be able to take advantage of their learning experiences related to data gathering and characterization development. Regional training will be provided through this project, and exchange of information and cooperation will be encouraged at all times among national government agencies. This project will also assist Mexico to analyze existing capacity and studies of mercury presence in different environmental and human media in the Sierra Gorda, in order to address the specific mercury pollution from each mine. This is particularly important in order to establish priorities and to adopt mercury reduction strategies and risk management approaches. The proper identification of lessons learned will also allow Mexico to identify where good practices can be useful, and would need to be shared with other regions and other countries. For the first time a region will be able to systematically use a common methodology for mercury characterization, facilitating regional comparison of data and the identification of common areas of concern. These experiences will be made available in the region and beyond. The components having to do with lessons learned will identify key sectors for mercury management, providing a more focused set of experiences and guidance for mercury management for key productive sectors in the country.

Government co-financing for this project, and its investment in the activities related to mercury sound management identified by this project, further reflect the commitment and sustainability required over the medium and long term.

The results of the methodology, workshops, characterization and national mercury risk management approaches will be made available publicly and at regional, national and international levels. Any country interested in developing a characterization and national sound mercury management approaches would have access to all these reports, in addition to the lessons learned report, which will highlight the good practices, concerns and fundamental elements of the characterization and national sound mercury management approaches.

2. *Stakeholders*. Will project design include the participation of relevant stakeholders from [civil society organizations](#) (yes ☒ /no ☐) and [indigenous peoples](#) (yes ☒ /no ☐)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.

Miners, women and men, children in the community, academics, public servants from all three levels of government and investors will take part in the project, according to their responsibilities and roles. Indigenous people are a very small portion of the population of the area of study, but have specific needs that will be particularly addressed.

According to the National Development Plan, Mexico has set as objective that the country should encourage and orient an including accessible green growth in order to preserve our natural patrimony at the same time that generates wealth, competitiveness and job. Its obligations should be aimed to strengthen the normative frame and the integral management to environmentally manage materials and hazardous wastes and the remediation of contaminated sites.

3. *Gender Equality and Women's Empowerment*. Are issues on [gender equality](#) and women's empowerment taken into account? (yes ☒ /no ☐). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.

Regarding Gender, the project will ensure there are opportunities for women to contribute to and benefit from project outcomes. In particular, the project implementer will work closely with national coordinators to ensure women are well represented on coordinating committees, that consultation with communities targets both women and men, and that national mercury risk management approaches include measures specifically addressing the risks to women, and children. Communities and families that are involved in the subsistence economy with involvement of health risks have different roles linked to such economic activities, and are consequently differentially exposed to their derived risks as has been shown in previous studies,. The situation of men and women, and children will be assessed and proposals for alternative employment will be developed particularly targeting these vulnerable population, taking into account their differential roles. The addressing of alternative income sources based on women's needs in those communities will empower these women.

4 *Risks*. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

There are several risks inherent in this project. Acknowledgement of these and the level of risk posed provide a gauge for project assessment. The long-term success of regional-scale characterization and environmental sound management, such as the one proposed here, largely depend upon: the political willingness of the participating agencies in the country to cooperate.

The results of an initial risk assessment are presented below:

Risk	Risk level:	Risk Mitigation
1. Lack of sustained political support.	Low	<p>This project has been developed in close cooperation with UNEP in order to assure that it responds to the local and country needs.</p> <p>Mexico legally has demonstrated full commitment to participate and substantially co-fund project.</p>
2. Co-financing will not meet the required level	Low/ medium	<p>The project will seek additional funds and/or donors.</p> <p>Reduce the scope of the project.</p>
3. Change of Government Policy towards mercury issues	Low	<p>Awareness rising amongst decision makers within the context of the Minamata Convention. This will emphasize the long-term benefits of proper management.</p>
4. Coordination between Government and agency is not structured or effective.	Low	<p>Carefully selected project indicators and an adaptive monitoring practice will enable timely implementation and effect execution.</p> <p>There would also be an adoption of proper project management techniques to adequately identify risks and contingency measures and plans.</p>
5. Institutional weakness to implement regulations	Medium	<p>The project seeks to address precisely those capacities and to augment current national programmes designed to facilitate monitoring and enforcement.</p>
6. Cultural background, resistance and acceptance to the change.	Medium	<p>The project development will include awareness programmes and activities that will enable primary mining communities to understand and detect mercury health and environmental issues. Sound environmental livelihood options will be developed in close communication with and taking into account miners and communities cultural background and needs.</p>
7. Implementation of a possible alternative economic activity.	Medium	<p>The project takes under consideration the environmental area of each of the communities, and with the analysis, they will develop an appropriate economic</p>



		activity.
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5. *Coordination.* Outline the coordination with other relevant GEF-financed and other initiatives.

The day to day management and monitoring of the project activities will be the responsibility of the executing agency and the involved national agencies, SEMARNAT will submit periodically reports In close collaboration with UNEP.

Mexico already has a coordination mechanism that will be used in this project: the “National Consultative Committee for Integrated Management of the Chemicals, Persistent Organic Compounds and Hazardous Wastes” that are subject to international environmental conventions. This committee consists in a collegial body that includes the governmental sector and expert representatives of the academic and business sector and civil society organizations.

Periodic reports will include progress in the implementation of the project, financial report, a work plan and expected expenditures for the next reporting period. It will also include obstacles occurred during implementation period where necessary.

- i. The 2015 project **Mercury trade assessment and control in Latin America** (1.99 MUSD) involves objectives such as controlling major flows of mercury supply and trade assessment, regulation and control measures to reduce illegal trade at regional and global level and in a local level, to reduce the exposure to local populations from uncontrolled movements of mercury. Mexico being a participant country will look to create a harmonized regional system for mercury trade, which is also aligned with national circumstances and regulatory frameworks and to prevent illegal trade. This is important to notice due that the primary mercury mining sites in the Sierra Gorda of Queretaro fall directly on the objectives seeked, and have the potential to be identified, regulated and assessed by the measures established on the Latin America project efforts.
- ii. Another initiative effort that will scale up the project is the **Minamata Initial Assessment (MIA)**. The MIA will be the basis for Mexico to collect information that will assist it in the development of this project. In order to facilitate the entry into force of the Minamata Convention, an initial assessment will enable Mexico to determine what is needed in the Sierra Gorda, Queretaro in order to provide a basis for the implementation of this project. In another concern, to implement Minamata Convention trade provisions, Mexico will need to understand and control its mercury imports and exports, as well as the domestic fate of mercury leaving its borders. Mexico, will be assessed in a reinforcement of the inventory, stocks of mercury, import and export procedures, supply, identification of emission sources to land, air and water. The MIA is an on going project developed at a national level, and it will help to provide information at a local level regarding baseline inventory in production and emissions of mercury. The Sierra Gorda mercury mines and their communities will be aided by the MIA efforts. Further ground-truthing mechanisms for mercury-mining states, who will benefit from collaborating to develop regionally harmonized schemes for controlling mercury trade and the replication on similar mining communities.
- iii. **Implementation of the Strategic Action Program of the Gulf of Mexico Large Marine Ecosystem.-** There has been a similar past GEF-financed effort carried out in the Gulf of Mexico (Gulf of Mexico Large Marine Ecosystem) (137 MUSD, 2016). This project in accordance to the Large Marine Ecosystems focus on pollution and ecosystem health; fish and fisheries productivity; socioeconomics and governance; includes in its components pollution control, and mercury is among other contaminants consistent with the LME ecosystem based management methodology. STAP recommendation on including the monitoring of mercury on the Coatzacoalcos river, all its way to the water mouth of the Gulf of Mexico.

This GEF project, has assisted Mexico to analyse existing capacity and studies for mercury presence in different environmental, human media in the Gulf of Mexico in order to address the specific mercury pollution from each industrial sector draining to the Gulf (mercury stable isotopes technology). This project intended to establish priorities and to adopt mercury reduction strategies and risk management approaches. The proper identification of lessons learned would help Mexico to identify where good practices can be useful and would need to be shared with other particular regions, including other countries. For the first time a region was going to systematically use a common methodology for mercury inventories, facilitating regional comparison of data and the identification of common areas of concern. Also of fundamental importance, these experiences will be made available in the region and beyond, the lessons learned components identified key sectors on mercury management, providing a more focused set of experiences and guidance for mercury management to key productive sectors in the country.

*6. Consistency with National Priorities.* Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes ☒ /no ☐ ). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.

This project requires an assessment on national strategies and plans on ecosystem preservation as well as a regulation in mercury emissions from primary mining activities.

According to the National Development Plan, which establishes the national objectives, strategies and priorities of the current Mexican administration, one of the national goals involves a globally responsible Mexico, which corresponds to environmental issues. This goal promotes an inclusive green economy to preserve the country's natural capital while creating wealth, competitiveness and jobs.

To consolidate the national policy on climate change, the Special Program on Climate Change 2014-2018 groups 14 sectoral programs seeking to reduce greenhouse gas emissions and incorporate adaptation and mitigation measures. It addresses the reduction of population's vulnerability in risk areas, preservation of ecosystems, reduction of greenhouse gas emissions, and pollutants of short life by working with major emissions sectors, such as transport, oil, gas, industry, agriculture, electricity and waste. The success of its implementation will require engagement and integration of legal instruments, generation of knowledge, and active participation of the civil society.

SEMARNAT is the administrative authority responsible for most environmental issues under federal jurisdiction, including for the issuance of environmental standards and has branches in each state for handling federal issues; hence it is the executing partner for this project. Under the Official Mexican Standard NOM-147-SEMARNAT/SSA1-2004, Mexico directs its national strategy towards the regulation on the criterion settlement to determine the concentrations in polluted soils by arsenic, barium, beryllium, cadmium, hexavalent chromium, mercury, nickel, silver, lead, selenium, thallium and/or vanadium.

*7. Knowledge Management.* Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

Knowledge management will be key to the success of the project. Information and lessons learnt will be made available under the project website. In addition, Knowledge Management will utilise UNEP tool including the Indicator Reporting Information System (IRIS), an online national reporting system developed by UNEP to facilitate reporting at all levels and to make it easier to take stock of the environment. The use of IRIS is linked to UNEP Live, an on-line knowledge management platform that makes accessible - global, regional and national data and knowledge. The project will make use of the available mapping, search, visualization tools, to ensure project knowledge is captured and disseminated. The project will also establish a Community of Practice under the UNEP Live platform, providing stakeholders from project countries, as well as around the globe, a space to share ideas, data and knowledge, with and from other similar projects and initiatives, and ensure opportunities for networking building and communication through the use of technology and social media.

The project will also benefit from the Extractive Industries hub currently under development in UNEP. Private sector involvement in the hub, especially from the mining industry, will ensure a very targeted dissemination of the outreach material and lessons learned from the implementation.

### **PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

#### **A. RECORD OF ENDORSEMENT<sup>30</sup> OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):**

(Please attach the [Operational Focal Point endorsement letter](#)(s) with this template. For SGP, use this [SGP OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)

#### **B. GEF AGENCY(IES) CERTIFICATION**

**This request has been prepared in accordance with GEF policies<sup>31</sup> and procedures and meets the GEF criteria for project identification and preparation under GEF-6.**

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email

#### **C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)**

For newly accredited GEF Project Agencies, please download and fill up the required [GEF Project Agency Certification of Ceiling Information Template](#) to be attached as an annex to the PIF.

<sup>30</sup> For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

<sup>31</sup> GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF