



Environmentally sound management of hazardous wastes containing POPs and Mercury

Part I: Project Information

GEF ID

10721

Project Type

FSP

Type of Trust Fund

GET

CBIT/NGI

CBIT **No**

NGI **No**

Project Title

Environmentally sound management of hazardous wastes containing POPs and Mercury

Countries

Panama

Agency(ies)

UNDP

Other Executing Partner(s)

Ministry of Health

Executing Partner Type

Government

GEF Focal Area

Chemicals and Waste

Taxonomy

Focal Areas, Chemicals and Waste, Waste Management, Hazardous Waste Management, Mercury, Best Available Technology / Best Environmental Practices, Persistent Organic Pollutants, Unintentional Persistent

Organic Pollutants, Polychlorinated Biphenyls, Sound Management of chemicals and waste, Emissions, Disposal, Open Burning, Influencing models, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Stakeholders, Civil Society, Academia, Private Sector, Gender Equality, Gender Mainstreaming, Sex-disaggregated indicators, Capacity, Knowledge and Research, Capacity Development, Knowledge Generation, Training, Learning, Theory of change, Knowledge Exchange, South-South

Sector

Mixed & Others

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 0

Submission Date

12/9/2021

Expected Implementation Start

6/11/2022

Expected Completion Date

6/11/2027

Duration

60In Months

Agency Fee(\$)

259,350.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CW-1-1	Strengthen the sound management of industrial chemicals and their waste through better control, and reduction and/or elimination.	GET	2,730,000.00	26,050,020.00
Total Project Cost(\$)			2,730,000.00	26,050,020.00

B. Project description summary

Project Objective

Prevent, Reduce and Eliminate the presence and emission of POPs and Mercury in Panama to protect public health and the environment in compliance with the Stockholm and Minamata Conventions.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: Strengthening legal and institutional capacities for sound management of POPs and mercury.	Technical Assistance	A. Legal and institutional capacities for sound management of POPs and mercury strengthened.	A1. Legal and regulatory framework for sound management and elimination of POPs and mercury strengthened and enforcement enhanced. A2. Institutional coordination for sound management of POPs and mercury strengthened (including national training programme).	GET	300,000.00	2,862,640.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 2: Prevention and reduction of POPs emission.	Investment	<p>B. Unintentional POPs emission from waste burning and incineration reduced (6 gTEQ/yr)</p> <p>C. Sound elimination of PCB contaminated equipment/material achieved (200 ton)</p> <p>D. Use of HBCD containing materials minimized (300 ton) and elimination of HBCD containing waste achieved (30 ton)</p>	<p>B1. Programme to decrease incidence of waste burning of dump sites/landfills and of hospital's waste disposal in Panama developed and implemented.</p> <p>B2. Pilot projects (2) for PCCD/Fs reduction emission through BAT/BEP implementation in a dump site combined with plastics waste minimization in touristic area.</p> <p>C1. PCB contaminated equipment elimination plan established based on full national inventory.</p> <p>C2. Two hundred (200 ton) of PCB equipment and waste from sensitive sites.</p> <p>D1. Programme for reduction of use of Expanded Polystyrene (with prevention as basic concept) as building material for reduction of HBCD developed.</p> <p>D2. Pilots (2) of final disposal of 30 ton of EPS waste with HBCD in</p>	GET	1,180,000.00	11,259,716.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 3: Prevention and minimization of mercury emissions.	Investment	E. Mercury emissions in the Health sector prevented and reduced through the implementation of good practices and improved management of mercury containing products and wastes (350 kg)	<p>E1. Pilot projects (5) for replacement of mercury containing equipment/products and establishment of a management and temporary storage system of mercury waste in large hospitals and small priority health centres.</p> <p>D2. Pilot projects (2) in hospitals for reduction of emission of mercury through prevention and application of BAT/BEP for management and disposal of waste.</p>	GET	870,000.00	8,301,655.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 4: Monitoring, evaluation and dissemination of Project Results and awareness-raising and training.	Technical Assistance	F. Project results monitored, evaluated and disclosed.	F1. M&E and adaptive management applied in response to the needs and results of the mid-term assessment. F2. Lessons learned and best practices extracted and disseminated at the national, regional and global level.	GET	250,000.00	2,385,533.00
Sub Total (\$)					2,600,000.00	24,809,544.00
Project Management Cost (PMC)						
GET			130,000.00	1,240,476.00		
Sub Total(\$)			130,000.00	1,240,476.00		
Total Project Cost(\$)			2,730,000.00	26,050,020.00		

Please provide justification

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Health	In-kind	Recurrent expenditures	10,680,000.00
Recipient Country Government	Ministry of Health	Grant	Investment mobilized	540,000.00
Recipient Country Government	Ministry of Environment	In-kind	Recurrent expenditures	2,213,000.00
Recipient Country Government	Ministry of Environment	Grant	Investment mobilized	3,941,071.00
Private Sector	ETESA	In-kind	Recurrent expenditures	30,828.00
Private Sector	ETESA	Grant	Investment mobilized	56,100.00
Private Sector	ENSA	In-kind	Recurrent expenditures	20,000.00
Private Sector	ENSA	Grant	Investment mobilized	19,021.00
Other	University of Panama	In-kind	Recurrent expenditures	2,430,000.00
Other	University of Panama	Grant	Investment mobilized	3,600,000.00
Other	CIIMET	In-kind	Recurrent expenditures	2,310,000.00
Other	CIIMET	Grant	Investment mobilized	210,000.00
Total Co-Financing(\$)				26,050,020.00

Describe how any "Investment Mobilized" was identified

The investment mobilized makes reference to investments that will be done in the future and does not include any past investments. Among the activities that have been identified there are namely: Power

Transformer oils dechlorination (PCB), Elimination of PCB containing materials, the Development of National Capacities to improve the control of POPs and promote the use of alternative substances, building of the Laboratory for Water Quality (Los Canelos - Veraguas), purchase of equipment to manage health care waste, among others.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	Panama	Chemicals and Waste	POPs	1,720,000	163,400	1,883,400.00
UNDP	GET	Panama	Chemicals and Waste	Mercury	1,010,000	95,950	1,105,950.00
Total Grant Resources(\$)					2,730,000.00	259,350.00	2,989,350.00

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)
PPG Required **true**

PPG Amount (\$)
100,000

PPG Agency Fee (\$)
9,500

Agenc y	Trus t Fun d	Countr y	Focal Area	Programmin g of Funds	Amount(\$)	Fee(\$)	Total(\$)
UNDP	GET	Panama	Chemical s and Waste	POPs	100,000	9,500	109,500.0 0
Total Project Costs(\$)					100,000.0 0	9,500.0 0	109,500.0 0

Core Indicators

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	6765.94	6765.94	0	0
Expected metric tons of CO ₂ e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	6,765.94			
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting	2023			
Duration of accounting	4			

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO ₂ e (direct)	6,765.94			
Expected metric tons of CO ₂ e (indirect)				
Anticipated start year of accounting	2023			
Duration of accounting	4			

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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Indicator 9 Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products (metric tons of toxic chemicals reduced)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
202.85	202.85	0.00	0.00

Indicator 9.1 Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type)

POPs type	Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
SelectPolychlorinated biphenyls (PCB)	200.00	200.00		<input type="checkbox"/>
SelectHexachlorobutadiene (HCBD)	2.50	2.50		<input type="checkbox"/>

Indicator 9.2 Quantity of mercury reduced (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
0.35	0.35		

Indicator 9.3 Hydrochlorofluorocarbons (HCFC) Reduced/Phased out (metric tons)

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
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Indicator 9.4 Number of countries with legislation and policy implemented to control chemicals and waste (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
1	1		

Indicator 9.5 Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing and cities (Use this sub-indicator in addition to one of the sub-indicators 9.1, 9.2 and 9.3 if applicable)

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Indicator 9.6 Quantity of POPs/Mercury containing materials and products directly avoided			
Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
530.00	530.00		

**Indicator 10 Reduction, avoidance of emissions of POP to air from point and non-point sources
(grams of toxic equivalent gTEQ)**

Grams of toxic equivalent gTEQ (Expected at PIF)	Grams of toxic equivalent gTEQ (Expected at CEO Endorsement)	Grams of toxic equivalent gTEQ (Achieved at MTR)	Grams of toxic equivalent gTEQ (Achieved at TE)
6.00	6.00		

**Indicator 10.1 Number of countries with legislation and policy implemented to control emissions of
POPs to air (Use this sub-indicator in addition to Core Indicator 10 if applicable)**

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
1	1		

**Indicator 10.2 Number of emission control technologies/practices implemented (Use this sub-indicator
in addition to Core Indicator 10 if applicable)**

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
3	3		

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	1,099	942		
Male	585	942		
Total	1684	1884	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

N/A

Part II. Project Justification

1a. Project Description

The following table details two deviations from PIF and the CEO Endorsement:

TABLE 1. DEVIATIONS FROM PIF AND THE CEO ENDORSEMENT.

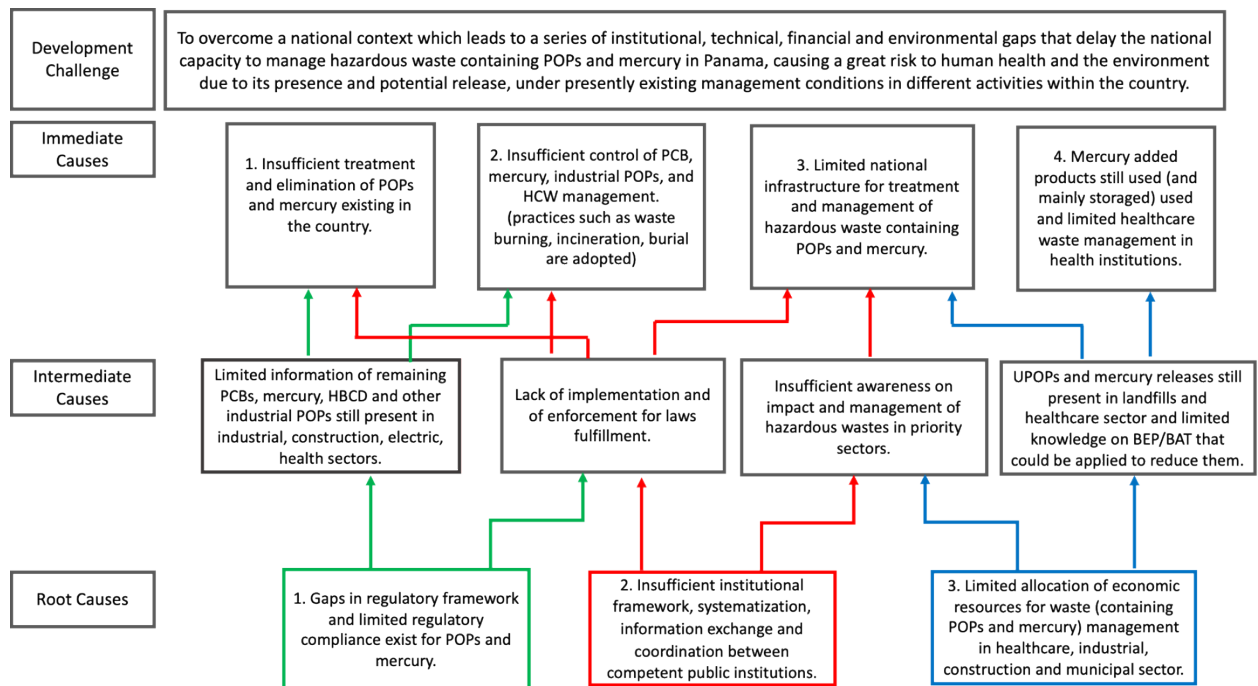
Component	Original PIF	Adjusted in CEO Endorsement	Justification
Section F. Project Core Indicators PIF page 5	Core Indicator 11 Number of direct beneficiaries disaggregated by gender: 1,684 (585 male and 1,099 female)	Core Indicator 11 Number of direct beneficiaries disaggregated by gender: 1,884 (942 male, 942 female)	The number of direct beneficiaries was updated according. To project activities.
The proposed alternative scenario with a brief description of expected outcomes of the project. PIF page 15	D1. Programme for reduction of use of Expanded Polystyrene (with prevention as basic concept) as building material for reduction of HBCD developed D2. Pilots (2) of final disposal of 30 t of EPS waste with HBCD in production and construction	D1. Programme for reduction of Expanded Polystyrene and waste containing HBCD. D2. Pilot projects (2) of final disposal of 30 ton of EPS waste with HBCD within construction sector.	During PPG phase a deeper analysis of HBCD baseline scenario was conducted and updated. It was evidenced the need of introducing a redefinition of activities under Outputs D1 and D2. HBCD management activities in the project will require the initial development of an in depth inventory to verify absence of HBCD in current production and importation of EPS sheets, as well as the identification in existing buildings.

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (system description).

The development challenge is to overcome a national context which leads to a series of institutional, technical, financial, and environmental gaps that delay the national capacity to manage hazardous waste containing POPs and mercury in Panama, causing a great risk to human health and the environment due to its presence and potential release, under presently existing waste management, construction practices and management and health institutions conditions in the country.

The analysis of the development challenge has identified three levels of causes for environmental sound managing POPs and mercury within the national framework and international commitments. The problem tree with immediate, underlying, and structural/root causes is detailed below:

Figure 1. Development challenge.



2) The baseline scenario and any associated baseline projects.

Baseline Scenario

The environmental sector in the Republic of Panama is organized through the General Environmental Law (Law 41 of July 1, 1998) and its amendment (Law 8 of March 25, 2015). The governing body is the Ministry of the Environment. The Inter-Institutional Environmental System (SIA) is in charge of establishing the necessary mechanisms to ensure that environmental concern is addressed in a comprehensive manner at the national level. The System is composed of:

Interinstitutional Environmental System: constitutes the coordinating role among government institutions with environmental competence.

Ministry of the Environment is the technical, executive, and coordinating body; environmental public policy proposals developer. It is also responsible for the implementation of programs and the supervision, control, and monitoring of legal framework compliance.

National, Provincial, County, and District Advisory Commissions: Political, strategic, and supervisory bodies. While the National Advisory Commission analyzes environmental issues at the national level to make observations and recommendations to the Ministry, the others ensure the protection of the environment within the framework of their jurisdiction or territory.

At the operational level, the Ministry of the Environment has ten national directorates, which are administrative units necessary to fulfill the functions granted by law: Verification of Environmental Performance, Environmental Impact Assessment, Water Safety, Environmental Culture, Protected Areas and Biodiversity, Environmental Information, Climate Change, Forestry, Environmental Policy and Coast and Seas.

The health sector is organized through the Sanitary Code of the Republic of Panama (Law No. 66 of November 10, 1947), which fully regulates matters related to health policy and public health and hygiene; and Cabinet Decree No. 1 of January 15, 1969, which creates the Ministry of Health (MINSa) and establishes itself as the governing body in health matters in the country.

The main objective of the Ministry of Health is to ensure the health of the population of the Republic of Panama, through the development of Health Promotion, Protection, Conservation, Restitution and Rehabilitation activities. In this sense, the Ministry is structured in different administrative units at the national, regional, district and local level that serve the areas that are under its rectory.

At a coordinating level, there are fifteen (15) regions, led by the MINSa, which are in charge of promoting and achieving the interrelation of the tasks and actions related to the specific area. The normative level is structured in six national directorates: public health, medical devices, health promotion, provision of health services, pharmacy and drugs, and indigenous health affairs.

The public health sector is also made up of other institutions which allow comprehensively governing all aspects related to national policy: Social Security Fund (CSS); National Aqueducts and Sewers Institute (IDAA) and Urban and Domiciliary Cleaning Authority (AAUD).

In addition, the country has a set of public policies, strategies, and plans that guide the actions to be taken in health matters: the National Health Policy 2016-2025 and the National Plan for Integrated Waste Management 2017-2027.

In Panama, various government actors, which have attributions to develop institutional policies, intervene in the Integrated Sound Management of Chemicals, throughout their life cycle. Some relevant institutions are: Ministry of Health (MINSa), Ministry of Agricultural Development (MIDA), Ministry of Labor and Labor Development (MITRADEL), Ministry of the Environment (MiAmbiente), Ministry of Commerce and Industry and the National Commission for the Study and Prevention of Drugs (CONAPRED). Other public institutions support work of these Ministries on Chemicals Management, such as the National Customs Authority (ANA). Therefore, the management and control of chemical substances, and especially persistent organic pollutants and mercury, occurs in a multisectoral manner according to their area of application and associated competence of the ministries and institutions.

Due to the potential risks that these substances represent for human health and the environment, in Panama the Ministry of Health through the General Directorate of Public Health is the governing entity in matters of environmental health, vector control, hygiene and occupational health and industrial substances and public consumption control. MINSa fulfills the role of focal point for the Stockholm and Minamata Conventions, and other conventions related to chemicals and waste management, through its General Subdirectorate of Environmental Health.

Panama is also a signatory of the Strategic Approach to International Chemicals Management (SAICM), and as such, has undertaken efforts to ensure the effective implementation of the objectives of the Global Action Plan in the country. The outcomes of this project will contribute, incrementally, to carry out this Plan at the national level. The national SAICM focal point is also MINSa.

Regarding waste management, according to the national legal framework, the management of common and hazardous waste is overseen by the Ministry of Health. Collection, transport, treatment, and final

Executive Decree N°34 of 26 February 2007, adopts the National Policy on Integrated Management of Common and Hazardous Waste. However, the Policy does not clarify the different competencies on waste management and is therefore difficultly executable. The more recent adoption of Law N°33 of 30 May 2018 that establishes the Policy on Zero Waste, introduces the circular economy and the Extended Producer Responsibility concepts for waste management in Panama. However, the different provisions in the Policy for waste generators to promote waste segregation, recycling, and reduce waste are implemented only by some few businesses. The most recent instrument developed to guide waste management at the national level, is the National Plan for Integrated Waste Management 2017-2027 lead by AAUD, which is also accompanied by a Bill on the Integrated Waste Management[2]². The Bill has been recently adopted by the National Assembly of Deputies and will be published in the following months.

Persistent Organic Pollutants (POPs)

In 2019, Panama advanced on its NIP update where first inventories for certain new POPs included in the Stockholm Convention after 2008 were developed. Considering that the new POPs are widely used in consumer goods and the near absence at national level of industries that use POPs in their production processes, the main challenge for the country is the prohibition of the entry of these products and the environmentally sound management of their waste.

Polychlorinated Biphenyl (PCB) ? Baseline Scenario

In 2011, the Ministry of Health published Resolution No. 0169 to prohibit the importation of equipment with a PCB content greater than 5 ppm. Although the Resolution establishes the obligation

of tenants for the sound management and disposal of equipment in stock, it does not provide a specific schedule for its final disposal.

Within the development of the first NIP, the identification of electrical equipment installed in the private and public sectors was updated, as well as the waste that contained or was contaminated with PCBs. This was obtained when an inventory of 22,614 transformers out of the 58,481 total transformers was performed and updated 2007. It is highlighted that the vast majority of equipment (99.25%) were placed in power distribution companies while other private (industrial and commercial) and public entities represents only 0.45% and 0.30% respectively, since few state installations had their own equipment, which is repeated in the industrial and commercial sub-sectors. The industries have few transformers of their own for the development of their activities, as do some shopping centers and supermarkets, they are supplied with electricity through transformers located on the power lines.

The inventory identified a total of 117 PCB equipment (89 ton PCB dielectric oil and 151 ton empty equipment) in use and 419 PCB equipment (59 ton dielectric oil with PCB and 114 ton empty equipment) in disuse. Additionally, there were 45.32 tons of solid waste and dielectric oils contaminated with PCBs, totaling 454 ton.

Considering that other countries in the LAC region present 6% of electrical transformers contaminated with PCBs, the PPG stage has estimated that 3,508 transformers out of the 58,481 were contaminated with PCBs in Panama and needed to be eliminated or disposed in an environmentally sound manner.

Table 2. Volume of PCB and contaminated equipment estimation in Panama.

Source	Number of Transformers [3] ³	Transformers most likely to be contaminated with PCBs [4] ⁴	Total mass of empty equipment[5] ⁵	PCB Oil Volume[6] ⁶
Unit	#	(units)	(tons)	(tons)
Power Sector (99.25%)	58,045	3,482	1,577.4	425.9
Private Sector: Industrial and commercial activities (0.45%)	266	16	7	1.89
Public Sector[7] ⁷ : Sensitive Sites (0.30%)	170	10	4.5	1.21
Total (100%)	58,481	3,508	1,588.9	429

According to MINSA transboundary movements of hazardous wastes records, between 2007 and 2019 a total amount of 925 ton of equipment and waste contaminated with PCB was exported for elimination. According to this, it can be estimated that approximately 1,092 ton of contaminated

equipment and PCB oil are still remaining in the country, mainly in the electric power distribution sector.

Currently, there is no PCB elimination schedule in the country with mandatory compliance regulations, other than that of the Stockholm Convention. Since the country lacks installed capacity for PCB final disposal, the export of all waste containing PCB will be required in accordance with the Basel Convention's guidelines.

Electric companies are limited by the costs that represent the interruption of the services for the withdrawal of the identified equipment, as well as the costs that the processes for the treatment and the appropriate final disposition entail. Identification of all PCB containing transformer equipment advances very slowly. It is necessary to develop a comprehensive programme to complete the inventory of the entire electrical system, as well as to establish control and coordination actions for the removal and disposal of these substances.

Hexabromocyclododecane (HBCD) ? Baseline Scenario

As described above, environmental, and human exposure to PCBs associated with electrical equipment is a major challenge including their elimination, especially for power and industrial sector and potential sensitive sites. However, greater attention must also be paid to other Industrial POP applications, which are also covered by the Stockholm Convention.

Within the framework of the NIP development, Panama identified that one of the industrial POPs that should be evaluated was the Hexabromocyclododecane (HBCD) and its wide application in construction sector. It was highlighted that the substance HBCD was not produced directly in Panama and its application in textiles or in electrical and electronic products was not reported, because these applications have ceased worldwide as alternatives are available. The only use identified in the country was for insulation purposes in construction, specifically related to the production and importation of expanded polystyrene (EPS) and extruded polystyrene (XPS) sheets. The inventory estimated that an annual amount of 1,408.7 ton of EPS and 30.27 ton of XPS were used in construction sector.

In Panama, there are currently three industrial plants where these sheets are manufactured, using imported raw material in the form of expanded polystyrene beads that may incorporate the HBCD fire retardant additive. There are also import and distribution companies that bring the finished EPS sheets with or without HBCD content. Regarding XPS, there are no industrial plants in the country for this type of sheet production, mainly due to its low market demand. However, a group of importers and distributors of this type of product was identified.

During the PPG phase, every producer and importer was contacted and involved. Interviews with the EPS manufacturing companies in the country evidence that HBCD may be no longer used in the EPS beads imported and used as raw materials for EPS production. It is not yet totally clear, though, from the interviews to EPS and XPS board importers, if HBCD may be still present in those imported boards. The following detail was obtained throughout the interviews and research conducted by the PPG team:

Table 3. HBCD produced and imported in Panama.

Type	Application	Company	Capacity [ton/year]	HBCD in EPS/XPS status ^[8]	Location
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Producer	EPS	Industrias Ecotec de Panama, S.A.	1,600	Suppliers: Mexico: no HBCD since 2nd half of 2017.	Pacora, Panama.
Producer	EPS	Industrias Eupan, S.A.	96	Suppliers: China: no HBCD since 2019. Mexico: no HBCD since 2nd half of 2017.	Panama City
Producer	EPS	Metales Panamericanos, SA.	28-35	Suppliers: Mexico: no HBCD since 2nd half of 2017. Alternative supplier from Taiwan HBCD not determined.	Panama City
Importer	EPS	Arco Technologies de Panam?, S.A.	4	Suppliers: Spain: no HBCD since 2015.	Panama City
Importer	EPS	Syntheon Panamerica SRL	175	Suppliers: Chile: HBCD not determined.	Panama City
Importer	EPS	Friolin Segundo, S.A.	0.5	Suppliers: US: HBCD not determined.	Panama City
Importer	XPS	Friolin Segundo, S.A.	1.5	Suppliers: Mexico: no HBCD since 2nd half of 2017. Italy: no HBCD since 2015.	Panama City
Importer	XPS	Comfort Home Panama, S.A.	6	Suppliers: Portugal: no HBCD since 2015.	Panama City
Importer	XPS	IAD Panama, S.A.	2.5	Suppliers: Spain: no HBCD since 2015.	Panama City

Importer	XPS	Mircom, S.A.	12.5	Suppliers: Portugal: no HBCD since 2015.	Panama City
Importer	XPS	Tubelite Centroamérica, S.A.	35	Suppliers: Italy: HBCD not determined. China: HBCD not determined. Korea: HBCD not determined. Costa Rica: HBCD not determined.	Panama City

Source: PPG Team

Although HBCD may be no longer used in EPS manufacturing in Panama, as per stated by the identified producers, the content of HBCD in imported material is uncertain. Furthermore, the use of HBCD may have been evidenced in previous years. In this way, the management of end-of-life insulation materials resulting from construction, demolition or maintenance of building become a major source of environmental emissions of HBCD and of EPS/XPS. Currently, the country does not have alternatives for recycling and environmentally sound treatment and disposal of HBCD contaminated waste.

Unintentional Persistent Organic Pollutants (UPOPs) ? Baseline Scenario

The first inventory of dioxins and furans in Panama was developed in 2005, resulting in a total emission of 25.92 gTEQ/year. This national inventory was updated in 2015 showing as a result an increase of 120% compared to the results of 2015, which is equivalent to a total of 57.2 gTEQ /y emissions.

Open Burning Process is the main contributor with a total of 23.16 g TEQ/y (40.5%). Within this group, the main responsible for the total release is the burning of waste in landfills (20.4 gTEQ/y). Sanitary Disposition/Landfill, is the second largest source, contributing with a total of 13.87 gTEQ/y (24.3%), due to an increase in the amount of waste deposited in landfills (65.7%). The third largest source is Waste Incineration, which has a contribution of 8.1 gTEQ/y (14.2%) of the total release. The fourth group is Production of Ferrous and Non-Ferrous Metals, with 6.68 gTEQ/y (11.7%), including copper wire burning.

In summary, 4 source groups are responsible for 90.6% of the total dioxin and furan emissions in Panama. Based on the updated inventory, it can be concluded that waste management in its different types and stages constitutes the main source of generation of UPOPs in the country.

The waste collection service by law in the Republic of Panama is responsibility of the municipalities, as established in article 233 of the political constitution. Likewise, Law 52 of December 12, 1984, establishes as one of the exclusive powers of the Municipal Council to establish and regulate the urban and residential waste collection service in its populations, to procure the means for the use of waste and residues.

The Law N° 51 of 29 September 2010 created the Urban and Domiciliary Cleaning Authority (AAUD), to which the responsibility for waste management in Panama City was transferred, specifically the management of Cerro Patacon landfill. This Law also establishes that waste management in other country districts will be also transferred gradually to AAUD, but for the moment, AAUD is still only managing Panama City waste. This situation creates somehow a parallel/dual system in which

competences and responsibilities for waste management are not clear and this brings challenges for the sound management of waste^[9]⁹.

In Panama, 83% of the municipalities (66% of the population) have household waste collection service coverage and 73% of them collect for economic activities (shops, markets, etc.)^[10]¹⁰. According to studies carried out by the Ministry of Health, the domestic waste generated in homes located in urban areas is mostly composed of organic waste, plastics, paper, grass and wood. The management that is currently carried out corresponds to the daily collection of mixed waste from the urban area and its deposit in a rather precarious way in the landfill.

In Panama there are at least 63 landfills, which cover about 383 hectares, the largest being Cerro Patacon in the district of Ancon (Panama district). Of these 63 sites, at least 51% have open burning, 96% do not have geotextiles or some form of waterproofing, and at least 13% have a confirmed impact on water courses, including water sources of populated areas. A recent study carried out by INECO for the AAUD^[11]¹¹ made a comprehensive analysis of the current situation of waste management at the national level. A total of 63 landfills/open dumps were inventoried. From a sample of 33 open dumps, 89% receive hazardous waste and 47% receive hospital waste.

Table 4. Landfills in Panama.

Province	Landfills	Area of extension	Amount of waste ^[12] ¹²	Population in area of ??influence ^[13] ¹³	Recyclers in landfills ^[14] ¹⁴	
	[#]	[hectares]	[ton/year]	[# people within 3 km]	[# landfills registered]	[# people] ^[15] ¹⁵
Bocas del Toro	3	10.57	6,449.55	9,324	2	28
Cocl?	5	9.80	85,191.0	28,061	3	22
Col?n	6	42.27	111,025.7	17,913	1	53
Chiriqu?	10	33.69	26,426.0	43,818	4	86
Dari?n	4	9.00	5,475.0	3,834	2	8
Herrera	7	11.95	2,073.2	54,134	3	20
Los Santos	12	12.71	40,562.45	14,391	2	6

Panam?	3	177.46	608,674.0	44,063	3	231
Panam? Oeste	2	12.3	222,018.55	N/A	1	29
Veraguas	11	16.33	43,800.0	15,702	2	26
TOTAL	63	323,77	1,151,695.45	235,832	23	522

Source: PPG Team

In general, landfills management conditions in Panama are characterized by the absence of entry controls, and adequate record of type of waste deposited in these sites. Some of the situations that arise include: the final disposal of hospital waste without any treatment; absence of controls in the construction of near landfills; waste proliferation to nearby areas due to lack of coverage and transport deficiencies; lack of a gas and leachate control and treatment; location close to surface water courses and populated places, among others.

For the year 2007, the generation of hazardous hospital waste was estimated between 5 to 7 tons/day, of which 50% (about 3 tons/ day) enters the Cerro Patacon Landfill. Hospital waste is collected in vehicles that do not have the minimum conditions. Once taken to the Cerro Patacon sanitary landfill, they are placed in a security pit where they are given immediate coverage. In the rest of the country, hospital waste is collected by the municipal cleaning service, to be deposited in dumps opened without any treatment. In some cases, they are incinerated in precarious facilities and then take the ashes to the municipal landfill. In municipal landfills, hazardous hospital waste or ash waste from incinerators is burned in the open mixed with the rest of the municipal waste.

In 2017 the Health Ministry (MINSA), through resolution 560/2017, regulated the system for the treatment of hazardous waste from public and private health facilities nationwide, prohibiting final disposal of hospital waste in landfills or dumps. It is very likely that this resolution has further increased the amount of hospital waste being incinerated, as there is not ample availability of other technologies in the country.

Table 5. Hospital waste management in Panama.

Province	Amount of Hospital Solid Waste [ton/year][16] ¹⁶	Amount of Hospital Solid Hazardous Waste [ton/year]	Existing Treatment Capacity[17] ¹⁷
Bocas del Toro	308	146	Incinerators: - / Autoclaves: Policl?nica de Bocas del Toro.
Cocl?	642	304	Incinerators (1): SEDINC / Autoclaves:

Col?n	517	245	Incinerators (2): SERVICIO TECNOLOGICO DE INCINERACION (STI) - SHIPS INCINERATION SERVICES AND PLUS. / Autoclaves: Hospital de Col?n.
Chiriqu?	2,207	1,045	Incinerators: - / Autoclaves: -
Dari?n	223	106	Incinerators: - / Autoclaves: -
Herrera	660	313	Incinerators: - / Autoclaves: -
Los Santos	483	229	Incinerators: - / Autoclaves: -
Panama City	4,021	1,905	Incinerators (5): SERVICIO TECNOLOGICO DE INCINERACION (STI); NAVES SUPPLY; URBALIA PANAMA, S.A.; CEMENTO BAYANO; TOCUMEN, S.A. / Autoclaves (4): Hospital Santo Tom?s; Hospital del Ni?o Dr. Jos? Ren?n Esquivel; Hospital San Miguel Arc?ngel; Hospital Oncol?gico.
Panama Oeste and Panama province (excluding Panama City)	1,186	1,539	Incinerators (1): AURAMEK / Autoclaves (1): Hospital de Chorrera.
Veraguas	602	285	Incinerators: - / Autoclaves (1): Hospital de Veraguas
TOTAL	10,849	6,117	

Source: PPG Team

One of the most controversial aspects of the operation of municipal landfills in the Republic of Panama corresponds to their impacts on the health of workers at these sites, the garbage collection system in general, and the populations near these sites. Every activity in solid waste management involves risks, either for the worker directly involved or for the nearby resident. Risks occur at every step of the process, from where residents handle the waste at home for collection or recycling, to the final disposal. The regulatory framework that considers the working conditions of workers in sanitary

landfills is Decree No. 275 of July 21, 2004. In this sense, of the 63 existing waste disposal sites in the country, only one, Cerro Patate, is considered a sanitary landfill, which would be the only place where these regulations could be enforced. Thereby the working conditions of waste pickers and other landfill workers in the rest of the country would be hazardous to their health. It is estimated that there are workers in 59% of the landfills. It is worth mentioning that the AAUD is currently conducting a survey of workers in these landfills.

It is also possible to deduce the existence of negative impacts on the environment, expressed in soil contamination; superficial and underground water bodies/courses contamination; air pollution and landscape deterioration. The latter is particularly important in those areas that, due to their location and geographic conformation, have a tourism potential to exploit. A relevant aspect is related to the presence and proliferation of vectors of sanitary interest in open-air landfills and in their surrounding areas, which undoubtedly represents a health risk for both the personnel who carry out activities in the landfill itself, as well as for the population living in nearby areas.

In this regard, the Interamerican Development Bank approved in December 2019 a US\$103,000,000 project on a Programme of Integrated Urban Development in Cities with Touristic Potential. The project has the objective to contribute to socioeconomic and urban development in small cities with touristic potential, including a component on improving access, infrastructure, and urban management. The latter includes actions on improved waste management.

In general, it is possible to affirm that the current legal and regulatory framework applicable to waste management is scattered and lacks a system to facilitate its effective application. These are general and technical standards, which regulate the issue of solid waste in an independent and differentiated manner, without integrating its contents, causing in some cases confusion and duality among the competent entities.

Mercury ? Baseline Scenario

Panama deposited its instrument of ratification of the Mercury Minamata Convention in September 2015. With the support of the Global Environment Facility (GEF) and the United Nations Development Program (UNDP), the country developed the project ?Support in Initial Evaluation (diagnosis) and definition of national requirements and needs on mercury for the ratification of the Minamata Convention? and published its report in 2019.

The Minamata Initial Assessment (MIA) reflects that Panama has dispersed regulations and only certain individual capacities of the institutions in charge (MINSA, ANA, etc.) that support compliance with the requirements stipulated under the Agreement, that are required for the development of specific regulations for mercury and the control of mercury products in different sectors and in the country's free zones. It also highlights the need to strengthen coordination, monitoring of mercury releases, training of key actors, and promoting the creation of a national strategy on the management of the complete life cycle of mercury products. This initial assessment also established a National Implementation Plan for the Minamata Convention on Mercury (2019-2025) which is being led in its implementation by the Ministry of Health.

As a primarily importing country, Panama has a high rate of entry of various products. Numerous mercury added products still enter the country, such as fluorescent lamps, batteries, thermometers, among many others. At the moment these products are not identified with respect to their mercury content when entering the country and their life cycle (primarily the phases of use and final disposal of the product) is not controlled. This presents important problems for the country, since the large quantities of these products and their poor management at the end of their useful life cause significant emissions and releases of mercury in the country.

Recently, in December 2020, the Ministry of Health has made a significant progress through Executive Decree 1688, which established restriction and/or prohibition measures on the import, transit, export, re export, commercialization and use of mercury; mercury compounds and mercury added products and dictates other provisions. These measures in conjunction with the National Customs Authority have begun to apply from April 2021, such as the prohibition of large amounts of mercury to Panama's free zones without traceability in their destinations (not being Panama a country with a mining tradition)

and the elimination of mercury added products in health sector. Currently, the tariff codes for mercury added products are being reviewed in coordination with Customs.

The facilities of the health sector are an important source of waste related to products with intentional use of mercury such as thermometers, medical tensiometers, dental amalgams, among others. Although by Resolution 560, issued by the Ministry of Health in 2017, the disposal of this waste is prohibited without being previously treated, practices such as mixing hospital waste with common waste and open burning often occur in certain areas. The results of the diagnosis show that there is no capacity for management, storage and adequate final disposal of waste from mercury added products. Therefore, it is important to intervene in the management of this waste to avoid affecting the health of the population and the environment.

According to the results of the last official inventory (2013), consumer products with the intentional use of mercury present an emission of 19,379 kg/year, which contribute 92.49% of annual emissions. Within this category the applications with the highest incidence in the total liberated are mercury batteries (18,278.7 kg/year), dental amalgams (521.09 kg/year), manometers and meters with mercury (511.11 kg/year) and fluorescent lamps with mercury (63.1 kg/year). Similar to the results of the inventories of unintentional POPs, the disposal of waste in sanitary landfills and wastewater treatment plants, constitute the second largest source of emission (10.48%), where informal landfills are the highest priority sites. In addition, the common practice of open cast burning of waste in landfills makes them potentially contaminated sites with a greater impact on the environment and the health of the population.

The foregoing highlights the importance of proper waste segregation and the establishment of comprehensive waste management at the national level. It is estimated that emissions derived from specific products of the health sector (medical thermometers, medical tensiometers, dental amalgam, etc.) reach a total of 2,045.64 kg/year, of which the majority are associated with medical amalgams and tensiometers. It is also important to highlight that in health facilities other mercury added products can be found such as thermostats, lamps with mercury, batteries and others related to laboratories, so the contribution of the health sector to annual general emissions is significant compared to other economic sectors.

Healthcare system in Panama consist of both public and private establishments. The private one is represented by the Association of Private Hospitals of Panama and has 6 hospitals (Hospital Punta Pacífica, Hospital Nacional, Hospital San Fernando, Centro Médico Paitilla, Hospital Santa Fe, Centro Médico del Caribe). The public healthcare system is formed by facilities separately managed by the Ministry of Health (MINSA) and the Social Security Fund (CSS). The estimated population coverage of each is 60% of CSS and 40% of MINSA, which in addition to being an important service provider is also the competent authority of the National Health System and, as such, formulates policies on health and regulates activities. According to Health Records and Statistics Department as of May 2020, there are 908 public health care facilities in Panama, 831 managed by MINSA management and 77 managed by CCS. The organization and classification of the facilities of both institutions is structured by levels of care and articulated according to levels of complexity and resolution capacity of the facilities.

During 2018, The Ministry of Health implemented the project "Sound management of mercury waste in hospitals of the Ministry of Health", which conducted surveys in 19 hospitals of the MINSA network to understand the current practices on mercury waste management throughout the country.

It is worth mentioning that 37% of the establishments already had a Biosafety Committee that ensure the management of mercury waste. On the other hand, none of the hospitals, though, had specific guidelines or some kind of protocol to manage mercury waste. The Project also evidenced that, although none of the sampled hospitals have open purchase orders for mercury-containing thermometers or sphygmomanometers, some of the hospitals have significant quantities of these products in stock or temporarily stored for their final disposal. Regarding mercury containing thermometers, 37% of the establishments had this type of device in use (36 units), 21% evidenced stocks of these devices (1,097 units) and 21% had thermometers for final disposal (2,629 units). In terms of sphygmomanometers 11% had this type of device in use (2 units), 11% evidenced stocks of these devices (3 units) and 21% had sphygmomanometers for final disposal (12 units). Of the total hospitals surveyed, 16 provide dentistry services, of which 69% use amalgams and evidenced

quantities in use, in stock and stored for final disposal. Finally, it is important to mention that 100% of hospitals use lamps, spotlights and/or fluorescent luminaires with mercury.

One of the main results of that project was the development of a technical standard for the comprehensive management of mercury wastes in public and private health facilities. This norm establishes that the health establishments must carry out an inventory of supplies, equipment, and devices with mercury, that are in use, in stock or stored as waste and deliver it to the General Subdirectorate of Environmental Health, no later than 3 months after the entry into force of the standard. This norm has not been approved so far.

Associated Baseline Projects

Also related to institutional partnerships, there is a group of GEF-financed projects and other initiatives in Panama currently under implementation related to the development challenge that this project is also addressing, which could provide some additional support to strengthening this institutional partnership approach. Thanks to the involvement of the institutional partners in some of them, it seems of mutual benefit the achievement of the outcomes of this project. Specifically, this FSP will ensure coordination and count on the capacity built and knowledge gathered from the concurrent projects that are already in progress, as shown in the following table below:

Table 6. Associated baseline projects.

Project	Agency	Main relevance for this FSP
POPs - Stockholm Convention -		
Strengthening of National Initiatives and Enhancement of Regional Cooperation for the Environmentally Sound Management of POPs in Waste of Electronic or Electrical Equipment (WEEE) in Latin-American Countries.	GEF-UNIDO	The project reviews and strengthens national policies and regulations and produces guidelines on the management of specific waste that contains POPs. It also trains officials and builds capacities in Panama to improve the management of this kind of waste. Synergies with this project can allow for a strengthened incidence in national policy and capacities on management of specific waste containing POPs. This project can provide lessons learned regarding the management of POPs-containing products through their life cycle.

Diagnosis of POPs in marine litter and microplastics in the Central America subregion: strengthening of institutional capacities to support the generation of public policies and promote awareness-raising activities to reduce the risks to health and the environment	Basel Convention Regional Centre for the Central America and Mexico subregion in Panama (BCRC CAM Panama)/Stockholm Convention Regional Centre for Capacity-building and the Transfer of Technology, Panama (SCRC-Panama)	The objective of the project is to generate the baseline of quantification and characterization of POPs present in marine litter and microplastics from the Central American subregion for the development of actions to regulate and mitigate pollution and its impact on health and the environment, as well as raising awareness. This FSP can create synergies on POPs determination in different matrix, to improve POPs monitoring.
Mercury ?The Minamata Convention-		
Toxicovigilance system in the Ministry of Health	Pan American Health Organization (PAHO)	This project aims to build a system to monitor toxicovigilance in the country, including information of key pollutants, such as mercury. This FSP will build synergies to include POPs and mercury data in the system and to establish guidelines to systematize monitoring and vigilance of POPs and mercury.
Chemicals and Waste Management		
Comprehensive urban development program with tourist vocations	Inter-American Development Bank (IDB)	The project main objective is to contribute to the urban and socioeconomic development of towns with tourist vocation in Panama. One of the work areas of the project is the improvement of infrastructure and services in these towns, including waste management. Synergies with this project will allow to introduce BAT and BEP on POP and mercury waste management in towns where the IDB project will be strengthening capacities of local authorities and improving infrastructure and services for waste management.
Improvement of open waste dumps in Panama	Urban and Domiciliary Cleaning Authority of Panama (AAUD)	The Authority is currently working in the improvement of three open waste dumps in Boquete, Aguadulce and Penonomé districts. The project aims at improving basic infrastructure in these dumps to improve waste management, such as setting a fence, build a waste containing area and a leachate basin. The Authority plans to implement other 5 projects next year. The FSP will work with waste dumps that the Authority is improving, in order to introduce BAT and BEP to avoid open burning of waste.

Institutional strengthening for the control of transboundary movement and the improvement of environmentally sound management of plastic waste in the Central America subregion	Basel Convention Regional Centre for the Central America and Mexico subregion in Panama (BCRC CAM Panama)/Stockholm Convention Regional Centre for Capacity-building and the Transfer of Technology, Panama (SCRC-Panama)	The project will build capacities to strengthen the regulatory regime framework for the management of plastic waste. A national inventory with the identification of the sources of generation, type of plastic waste and the dangerous components present in plastics will be developed, accompanied by a national strategy for the sound management. The inventory prepared under the project can provide key information on plastic waste in areas of intervention of this FSP.
Reduce marine plastics and plastic pollution in Latin American and Caribbean cities through a circular economy approach	GEF-UNEP	The project will work with Colombia, Jamaica and Panama with the main target to reduce plastics. The project aims to work specifically with coastal cities (Panama City and Colon in Panama). It includes the promotion of policies and interventions with municipalities to reduce plastic, which goes in line with this FSP component to work with hotels and municipalities in coastal areas to promote plastic recycling. Knowledge and lessons learned can be exchanged.
The plastic route	Marea Verde (NGO)	The project works in building roads in Panama made of a recycled plastics and asphalt blend. Two pilots have been implemented. The proposed technology is one of the few current options for the recycling of plastics in Panama. The FSP will explore the inclusion of this kind of initiative when defining the options to recycle plastics from hotels.
Analytical Capacities		
Project on monitoring analytical capacities for water quality	Ministry of Environment of Panama	The project establishes a water quality monitoring network. This FSP can seek synergies with the water quality monitoring project as part of the objectives to set a monitoring programme for chemicals in Panama and provide specific targeted trainings to enhance POPs and mercury analytical capacities for water quality monitoring.

3) The proposed alternative scenario with a brief description of expected outcomes and components of the project.

Based on this, the main challenges to be addressed by this project are the following:

i) Strengthen regulatory framework and promote coordination among competent authorities in chemicals life cycle management in the country. In Panama regulations that control the entry and use of POPs and mercury are dispersed in different entities that lack of fluid coordination, resulting in a weak law enforcement. Optimizing compliance with national and international commitments in relation to POPs, mercury and other toxic chemicals requires greater involvement and interaction of sectorial authorities.

ii) Prevention and minimization of practices such as open waste burning and incineration. Panama lacks comprehensive waste management, without activities aimed at the segregation of waste and therefore inadequate final disposal. In particular, strengthening of healthcare waste management, aims to support the country in addressing the challenges resulting from the COVID-19 pandemic.

iii) Phase-out, by 2025, all PCB-containing equipment and PCB disposal and waste in an environmentally sound manner by 2028, as per the Stockholm Convention. This project will build upon on going efforts of power sector to identify and environmentally sound manage of PCB equipment and waste, promoting coordination among possessors leading to lower costs of disposal. Equally important to raise awareness and assist sensitive sites in the identification of PCB equipment and advance in the coordination of necessary activities for its environmentally sound management.

iv) Integrate the management of new POPs into different policies and plans of the related institutions. Specifically, for HBCD: management of waste from end-of-life of products containing HBCD. Raising awareness of key actors about the health and environmental risks associated with HBCD, as well as BAT/BEP, to gradually reduce national releases and a strong regulatory framework and information available for environmentally sound management.

v) The adoption of BAT/BEP in healthcare sector to identify, reduce or eliminate mercury emissions derived from the use of mercury added products still present in health establishments. Recently, the country approved the Decree 1688 that prohibits the import of mercury products. However, the country lack of specific mercury regulations with regards to emission limits, waste management and disposal. Likewise, the country lacks adequate solutions for the temporary storage and final disposal of mercury.

vi) Sensitize and train different key stakeholders related to hazardous chemicals and wastes life cycle management in terms of their risks to worker's health and communities, as well as the impact to the environment.

The project's strategy will require interest and collaboration (technically and financially) from the private sector, to achieve the results, outcomes, and project targets. Support from the holders of PCB contaminated equipment and materials will be necessary for addressing Stockholm PCB deadlines, mainly the electricity sector through its transmission and distribution companies. In addition, the

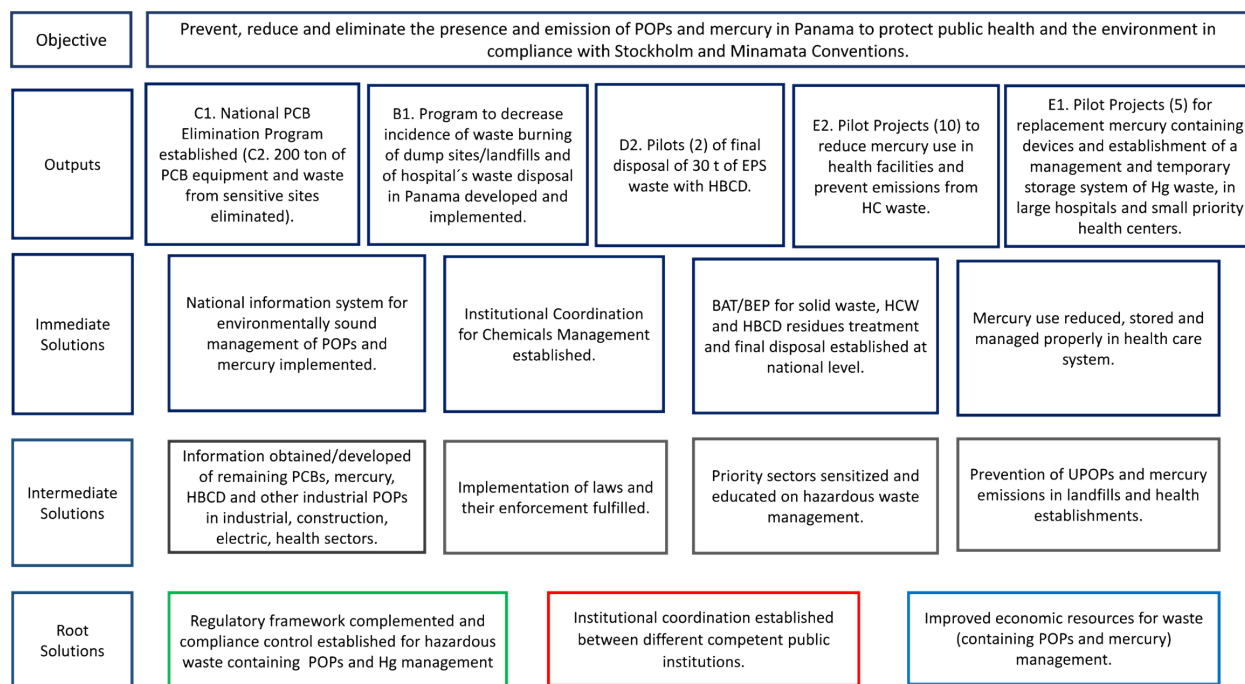
support and commitment of private hospitals as well as companies in construction sector will be necessary.

The project will provide technical assistance and demonstrate the best practices in identified pilot projects, but it is important to note that the companies not only participate in the project, but also provide co-financing for its execution both in mobilized and in-kind investments. In addition, companies will participate in the exchange and provision of data relevant to the project to improve the amount of information available and keep data up to date.

This project will support the GEF's COVID-19 response and mitigation of Future Pandemics through the promotion of activities that minimize human health risks while reducing pollution. Specifically, through Component 2, the project will assist Panama on improving the management of hospital's waste disposal where a programme to decrease the incidence of waste burning will be developed, and also through Component 3, where the project will support the country on the establishment of Best Practices for the management of Healthcare Waste management, including COVID-19 pathological wastes. Through the Project's Pilots, demand and supply channels of healthcare facilities will be strengthened, fostering the decisionmakers' capability to understand the challenges of waste management and its implications for human health and the environment. Components 2 and 3 will incorporate COVID-19 and healthcare waste management considerations into all activities developed throughout the implementation of the project. These activities assess opportunities where the Project's initiatives and Pilots can help reduce the risk of emerging infectious diseases such as COVID-19.

The following figure shows the alternative pathway and solutions to address the three categories of immediate, underlying and structural causes described in problem tree.

Figure 2. alternative pathway and solutions.



Expected Outcomes and components of the project

PROJECT COMPONENT 1: STRENGTHENING LEGAL AND INSTITUTIONAL CAPACITIES FOR SOUND MANAGEMENT OF POPs AND MERCURY.

OUTCOME A: LEGAL AND INSTITUTIONAL CAPACITIES FOR SOUND MANAGEMENT OF POPs AND MERCURY STRENGTHENED.

Output A1. Legal and regulatory framework for sound management and elimination of POPs and mercury strengthened and enforcement enhanced.

This output seeks to strengthen existing legal and regulatory framework for life cycle sound management (LCM) of POPs and mercury in Panama. The activities under this output will also contribute to the development of a systematic approach for an enhanced enforcement, which will in turn strengthen the sound management of chemicals within the international commitments and national framework.

The following activities will be carried out to achieve Output A.1:

1. National Comprehensive Policy Development: based on Annex 13 ?Legal and Institutional analysis?, the project will encompass the elaboration of a National Comprehensive Policy for Chemicals LCM. This policy will include national requirements and standards for the environmentally sound management of POPs and mercury waste, including the following: registration, monitoring and control of products containing POP and Mercury; control and generation of maximum limits for unintentional emissions; label or declaration of content of POPs of products entering the country; which must also address all stages (classification, segregation, collection, transport and disposal) and promote the use of available alternative substances and adopt technological changes and integration of POPs in national waste management plans as well as management of products with POPs throughout their life cycle.

2. Legal framework Roadmap: as part of the National Comprehensive Policy and based on the legal survey developed during PPG phase (Annex 13)[18]¹⁸, the project steering committee will propose a roadmap and the national approach to draft/update the legal instruments for a sound management of POPs and mercury through their life cycle and ensure a sound enforcement. By implementing an agreed roadmap and approach, the steering committee will ensure that the legal drafting during the project is done in a coherent and integrated approach, defining clear roles and responsibilities for each institution. The identified legal instruments to be supported/drafted by the project are:

- Regulation pertaining the written consent system for the import and export of mercury, which will enhance traceability of elemental mercury that may be entering the country and may be deviated for unauthorized uses. This regulation will consider the guidelines on the written consent procedure agreed by the Conferences of Parties of the Minamata Convention and will respond to the specific case of Panama that is a country of transit where elemental mercury may be transiting to other countries in the region. It will also address those cases where elemental mercury can arrive to the free trade zones and be reexported to other countries without being registered as an import.
 - Regulation on the sound management of mercury-containing waste resulting from products with added mercury. The regulation will address all mercury-containing waste in hospitals, industry and household, ensuring the sound segregation of such waste from its origin and establishing the approach for its sound interim storage.
 - Regulation for the control and import of products with added mercury, which establishes the registration/authorization system of such imports, guidelines on the maximum permissible levels in these products, and restrictions.
-

- Comprehensive Management of PCB: the regulation will address the comprehensive management of equipment and waste contaminated with PCBs, based on Stockholm Conventions guidelines and deadlines, as well as the consideration of experiences and lessons learned from other Latin American countries (for example Mexico, Argentina, Brazil). This regulation will also set a national PCB register within a national information system and establish the schedule for the sound disposal of that equipment and PCB waste within the obligations under the Stockholm Convention.
- Regulation on the sound management of HBCD. The regulation will address control and import of products containing HBCD and their sound management at the end of their lifecycle.

Output A2. Institutional coordination for sound management of POPs and mercury strengthened (include national training programme)

This Output aims to promote and enhance institutional coordination between different competent authorities for chemicals LCM. For this purpose, activities under this Output will be implemented through 3 key main line actions: Coordination, Capacity Building and Monitoring.

The following activities will be carried out to achieve Output A.2:

1. Inter-Agency Commission on Chemicals and Waste: the project will promote the creation of an inter-agency commission to improve Chemical Substances and Waste Management within the territory. This Commission will be led by the Ministry of Health (MINSA) and will have members from competent public bodies, such as the Ministry of Environment, the Ministry of Agricultural Development, the Ministry of Labour, the National Customs Authority, and the National Urban and Household Cleaning Authority, as well as other relevant national stakeholders such as the Colon Free Zone and the Panama Canal Authority.

This Commission will improve cooperation and coordination among national and regional key stakeholders and will serve as a mechanism for the exchange, collection, and analysis of information for the management of POPs and mercury, enabling also the execution of actions linked to National Implementation Plans of the Stockholm and Minamata Conventions. The Commission eventually would be also the informing body for the development of national legislation related to chemicals management under the National Chemicals Management Policy/Law drafted under Output A1. The Commission will take into account gender perspective within the framework of its activities, by ensuring women participation in design and decision-making processes and analyzing differentiated effects for men and women.

Within this Commission, the institutionalization of the following technical working groups will be promoted:

- Technical Working Group for Comprehensive Solid Waste Management: This group will be co led by the MINSA and the AAUD, and composed of the Ministry of the Environment, municipalities, and any other relevant actor. This group will allow Panama to address the existing challenges in terms of solid urban waste in a comprehensive and coordinated manner. Specifically for the span of the project, this working group will discuss and agree on key actions to ensure the inclusion of POP and mercury waste management into framework policies on waste management, as well as other hazardous waste streams relevant for the country.
- Technical Working Group for the Implementation of the Stockholm Convention: The working group will support the National Focal Point to the Stockholm Convention to inform actions and decision-making on aspects under the Convention, such as the inventory of POP emissions and products, the compliance with ban obligations on certain products, the monitoring of POP in different matrices, among others. In addition, this group will enable coordination for the effective implementation of activities identified in the National Implementation Plan of Stockholm.

- Technical Working Group for the Implementation of the Minamata Convention: this group will oversee and coordinate actions for the overall implementation of the Minamata Convention in Panama. The body will support the National Focal Point to the Minamata Convention to inform actions and decision-making on aspects under the Convention, such as the inventory of mercury emissions, the regulation of ASGM with potential use of mercury, the control of imports and exports of mercury, among others.

Within this framework, specific existing initiatives such as the working group led by the MINSA for ?Mercury Management in Healthcare Sector? will be supported. This group will be a key body to promote BAT and BEP for the substitution and sound handling and final disposal of mercury-containing devices and amalgams in the healthcare sector, as well as for the sound management of healthcare waste to contribute to the reduction of POP emissions.

2. Knowledge and Capacities in public entities: the project will also contribute to enhance national and regional capacities for comprehensive management of POPs and mercury in public entities. For that purpose, a training plan aimed at institutions with competence on POPs and mercury management will be developed and implemented. This training plan seeks to strengthen the management and enforcement capacities at national, regional, and municipal level to meet requirements under national regulations and international chemicals and waste conventions. All trainings will include a gender module and participation of women in trainings will be highly encouraged.

The project will also entail the development of Manuals of Standard Operating Procedures for the different State Agencies involved in the comprehensive waste (hazardous and non-hazardous) management. These Manuals will be applicable at the national and local level and will consider occupational health aspects as well.

3. National Analytical Capacity and Monitoring: since a key component in the monitoring and management of POPs and mercury is the analytical capacity of the laboratories of public institutions, the project will assess (including economical aspects) the existing national analytical capacities for the analysis of hazardous chemicals currently listed under the Conventions as well as other potentially hazardous chemicals of particular national concern, with focus on the detection and control of POPs in emissions, products and waste. In addition, specific targeted trainings will be delivered among the identified laboratories, on practices and techniques on the sampling and analysis of new POPs and mercury in different matrices. The participation of women will be promoted through their participation and leadership in technical and specialized teams.

Subsequently, the project will establish a monitoring programme for chemicals in coordination with previously identified institutions that have the necessary capacity for environmental monitoring and analysis of POPs, mercury, and other hazardous substances. The monitoring programme also aims to include the monitoring of gender related data that can provide insights and evidence on the use of and exposure to hazardous chemical and their impact. The programme can collaborate with the national system on toxicovigilance that is being developed by MINSA with support of the Panamerican Health Organization (PAHO). In particular, it will contribute to the establishment of a National Information System on chemicals of concern, which will ensure the compilation of updated and consistent data on POPs and mercury emissions, releases, and exposure.

PROJECT COMPONENT 2: PREVENTION AND REDUCTION OF POPs EMISSION.

OUTCOME B: UNINTENTIONAL POPs EMISSION FROM WASTE BURNING AND INCINERATION REDUCED (6 gTEq/yr).

Output B1. Programme to decrease incidence of waste burning of dump sites/landfills and of hospital's waste disposal in Panama developed and implemented.

The activities involved in this Output aims to reduce the emissions of dioxins and furans by minimizing burning waste practices in open pit dumps and landfills in Panam? as well as the minimization of healthcare waste incineration in inadequate facilities. For this purpose, this FSP will strengthen and improve waste management practices in 10 landfills and 10 health establishments by promoting the implementation of environmentally sound management (ESM) of hazardous waste or other waste, best environmental practices (BEP) and best available techniques (BAT) in accordance with the Basel and Stockholm conventions and relevant national regulations and requirements, with the ultimate goal of reducing UOPs emissions.

These activities will be closely coordinated and implemented with the Ministry of Health (MINSA), Urban and Domiciliary Cleaning Authority (AAUD), hospitals and the municipalities. As a result of this Output implementation, together with Output B.2, this FSP will evidence the reduction of at least 6 gTEq of emissions/year.

The following detail shows the confirmed landfills and hospitals where activities within this Output will be implemented.

Table 7. Confirmed landfills and hospital for Output B1.

#	Municipality	Landfill	Health Establishment
1	Oc?	Oc?	Hospital Sergio Nu?ez
2	Chitr?	Chitr?	Hospital Cecilio Castellero
3	Remedios	Remedios	Centro de Salud MINSA de Remedios
4	Panam?	-	Hospital del Ni?o
5	Pinogana	Metet?	Hospital de Metet?
6	Aguadulce	Aguadulce	Hospital Regional Rafael Estevez (CSS)
7	Ant?n	El Jobo	Centro de Salud de Ant?n
8	Pedas?	Pedas?	MINSA CAPSI
9	Chepo	Chepo	Hospital Regional de Chepo (CSS)
10	Santiago	-	Centro de Salud Canto del Llano
11	To be defined	Landfill #9	-
12	To be defined	Landfill #10	-

There are 2 remaining landfills which will be defined during the implementation of the project and validated by the executing unit. The selection will consider:

? Intervention effectiveness: sites with high population density will be prioritized for selection. The intervention places must be preferably accessible and must be located close to existing identified pilot sites.

? Gender approach: equitable participation of men and women must be sought during the activities to be developed.

Within this Output, a site specific environmental and social impact assessment (ESIA) will be conducted for each of the selected sites.

The following activities will be developed with municipalities and respective landfills to reach Output B.1:

1. Signing an agreement: prior to implementation, an agreement between the MINSA and local authorities will be signed, documenting the responsibilities and commitments assumed by each party within the project's framework.
2. Initial Assessment: an initial Assessment will be carried out to establish the waste management baseline in each municipality. This assessment will include: amount and type of waste generated; location; existing collection, transportation, treatment and final disposal system and practices available.
3. Development of a Comprehensive Solid Waste Management Plan: based on the initial assessment, the project will design and support the implementation of a strategic plan for comprehensive waste management in each municipality. This plan will focus on minimizing the waste that reaches landfills by strengthening waste management prior to its disposal, including alternatives for reduction of waste generation. The plan will involve activities for improving waste segregation at source and promoting recycling and reuse of different waste streams. Additionally, specific measures will be defined for reducing open waste burning practices in pilot site.

Existing and/or previous successful experiences in other countries and cities with "zero waste" approach will be considered to design the programme as well as local lessons learned from previous activities implemented on waste management.

This plan will also take into consideration local informal waste pickers in order to regularize and improve their working conditions by articulating with local authorities.

4. Communication Campaign: the project will develop and implement a communication campaign targeting local population to reduce domestic waste generation, separation at source, recycling and reuse. This campaign will include workshops for community involvement and awareness on the health risks associated with poor solid waste management.

As part of the designed strategy, the differentiated needs of men and women and their levels of participation in each process will be considered, to ensure that the benefits derived from the strengthening of capacities and transmission of information reach men and women according to their particularities and interests.

5. Information and monitoring System: this system will be established to provide information to the community and monitor results of implemented activities. Lessons learned as a result of pilot projects implementation, including gender considerations, will be captured in a Manual for Municipal Solid Waste Management System allowing replication in other municipalities.

The following activities will be developed in selected hospitals to reach Output B.1:

1. Signing an agreement: prior to implementation, an agreement will be signed, documenting the responsibilities and commitments assumed by each party within project's framework.
2. Consolidation of a Committee: each of the selected establishments, if not existent already, will define a "Waste Comprehensive Management Committee". This group will be considered of reference as responsible and guarantee of the implementation of activities related to healthcare waste management within the facility and will work under the leadership of the project team. Ideally, the working group will be made up of representatives from different sectors (nursing, paramedics, purchase, health, and safety, etc.)

3. Initial Diagnosis of Healthcare waste management: as a first activity an initial diagnosis will be conducted. This diagnosis will include: identification of main sources of generation and types of waste generated by the facility; determination the average amount of waste generated in the different services, as well as their characterization; obtaining information on the administrative and operational aspects of solid waste management in the facility; analysis and systematization of solid waste generated information and the history, as a reference, in the facility.

4. Segregation, Collection and Storage of Waste: the project will make sure that there is a suitable segregation within the health facility, including COVID waste segregation. Adequate segregation includes appropriate labelling and waste receptacle available in suitable areas at the point of generation. Additionally, on site transportation will be defined together with a storage location sized according to quantities and frequency of collection of each facility. Through this activity the project will also promote the prevention of waste generation in order to minimize volumes and enable sustainability.

5. Technical and economic assessment of treatment/final disposal alternatives: in order to minimize hazardous chemicals emissions, the project will evaluate healthcare waste treatment/disposal technologies, technical and economically viable for each facility to ensure that waste that cannot be avoided is treated and disposed of in a safe, economical and environmentally sustainable manner. These alternatives will be within international recommendations and national regulatory framework (Resolution 560/2017). The options may include security cells, autoclaves, etc.

6. Training and sustainability: The activities will be accompanied by a training plan for all personnel involved in waste management within the health facility.

Additionally, the project will establish required procedures and policies for each facility enabling the effective implementation of a waste management system. This system will allow the sustainability of reported results beyond project implementation.

7. Development of Technical Guidelines: to promote a national replication and as a result of the experiences and lessons learned during the implementation of these activities, this FSP will develop Technical Guidelines for comprehensive healthcare waste management in health facilities in the country.

Output B2. Two (2) Pilot projects for PCCD/Fs reduction emission through BAT/BEP implementation combined with plastic waste minimization in touristic area.

Through this Output the project aims to reach two objectives: promoting the plastic recovery at the coast side of Panama, for minimizing the final disposal of waste in landfills with the ultimate target of reducing PCCD/Fs emissions, by fostering the waste pickers involvement together with their enhancement by improving their work and life conditions through the institutionalization.

For this purpose, activities under this Output will be developed and implemented through pilot projects in Pedas? and Anton Municipalities with the involvement of local hotels. These pilots will be developed and implemented by an CSO in close collaboration and coordination with local authorities and the Tourism Authority in Panama (ATP).

Within this Output, and in line with Output B1, a site specific environmental and social impact assessment (ESIA) will be conducted for each of the selected sites.

The following activities will be developed to reach Output B.2:

1. Sign an agreement: prior to implementation, an agreement between the MINSA and the municipality will be signed, documenting the responsibilities and commitments assumed by each party within the project's framework and considering every stakeholder involved for the implementation (CSO, hotels, waste pickers).

2. Preparation of CSO/ME: the project team will identify and assess existing CSO that can be selected for the project implementation. The criteria for the selection will be: location, experience working in

project scope, technical and social skills, gender approach, etc. Once the CSO is selected, it will be trained, and business model accompanied.

3. Identification of Waste Pickers: as a first activity, a group of the workers that make their living from waste collection will be developed and fostered by the project. The objective will be to creating a community-centric approach in institutionalizing and mainstreaming the men and women waste pickers in small self-help groups (SHGs), to facilitate their linking to banks, ensuring social security measures and identity cards issued through the Municipality.

4. Collection Spots: promote the installation of plastic and other recyclable waste collection spots within the municipality at strategic sites, including hotels and beaches.

The placement of collections spots will be accompanied by a communication strategy targeting local population and tourists for raising awareness on proper segregation of waste and promoting collection and disposal of plastics and other valuable waste in these spots.

5. Train Workers Group: the identified group of waste pickers will be trained into plastic (and other valuable waste) Collection/Segregation/Preprocessing in an adhoc facility. This group will develop activities of collection, sorting and segregation of plastics based on their qualities and thickness; and pre-processed (e.g. shredding, bailing, extruding, etc.) as per the end use requirement. In addition, workers will also be trained in best practices to take care and protect the dump site/landfill from catching fire.

The project will assess different back-end recycling activities and promote the implementation of the most feasible. For back-end recycling referring only to mechanical recycling including category-wise segregation, melting and extrusion, and for other plastic waste management options (down-cycling included), referring to Co-incineration, use in road construction, producing goods with less demanding properties, etc.

6. Prevention in Selected Hotels: for the selected hotels the project will first promote activities to reduce waste generation, with focus on preventing plastic waste generation. Secondly, will introduce the separation and classification of different waste streams, in particular plastic to prevent its potential reach into the dump sites/landfills and into the sea. For this purpose, hotels personnel will be involved and trained in these activities. In addition, the project will promote activities for raising awareness in plastic waste minimization and support the placement of differentiated waste containers allowing waste segregation. The waste collector group will also take advantage of the separated waste streams for their own profit.

OUTCOME C: SOUND ELIMINATION OF PCB CONTAMINATED EQUIPMENT/MATERIAL ACHIEVED (200 TON)

Output C1. PCB contaminated equipment elimination plan established based on full national inventory.

Through this Output together with Output C.2, plus the improved coordination, legal framework and information exchange that will result of the implementation of the Component A, this FSP project will assist Panama with the planning of the management and with the disposal of remaining stocks of PCB contaminated equipment in the country. This approach would put Panama well on track to fully comply with its obligations under the Stockholm Convention on PCBs for the years 2025 and 2028. With the implementation of this FSP the country would not require additional assistance from the GEF for PCB management and disposal in the future.

The following activities will be developed to reach Output C.1:

1. Update National PCB Inventory: The project will assist in the activities to consolidate a national comprehensive inventory of electrical equipment and waste contaminated with PCBs in the country. The main efforts will be directed to power sector and sensitive sites. For this purpose, the project will develop the activities in coordination with ETESA, ENSA and NATURGY. In addition, based on the inventory developed in 2006 and updated in 2008, PCB containing equipment belonging to public sector and other sensitive sites will also be verified, labelled, and updated on their status.

The project will develop specific technical guidelines for identification, treatment, and disposal of PCB contaminated equipment, adding an operational guide for maintenance practices based on Best Available Techniques/Best Environmental Practices (BAT/BEP), as established by the Stockholm Convention. Likewise, it will disseminate these guidelines so that they are adopted by key actors.

The information obtained in the development of the national inventory will feed into a PCB register fostered by the MINSA, which will be established by regulation to ensure that PCB inventory is always updated, and the final disposal of all national existences is registered.

2. Develop a technical and economic feasibility analysis: This analysis will undertake a technical and economic feasibility study and design a financial scheme that will optimize the disposal of PCBs stockpiles for export, owned by PCBs holders nationwide, once there will be a dimension of the residual mass of PCBs remaining.

It will include a compilation of viable and competitive commercial options and viable international experiences, including a full cost analysis when selecting the technologies and their maintenance and operating costs; supported by technical specifications defining the required environmental performance and international social and environmental safeguards requirements to be applied.

3. National environmentally sound management/elimination Plan: based on the feasibility study and disposal capacity assessment, the project will therefore develop the basis for a concrete and adapted national management and disposal plan during the implementation of this FSP (until 2026) and on to 2028. This plan will also include a withdrawal and disposal schedule of these PCB transformers to be coordinated and controlled by MINSA. This plan will set the conditions for the destruction of the remaining PCBs stockpiles in Panam?, ensuring sustainability of the expected results and the fulfillment of Stockholm Convention commitments. For this purpose, the project will also consider experiences from other projects in Latin America (for example Mexico, Brazil, Argentina).

A Strategic Environmental and Social Assessment (SESA) process will be undertaken during development of the PCB National Elimination Plan.

Output C2. Two hundred (200) of PCB equipment and waste from sensitive sites eliminated.

Through this Output the project will evidence the elimination of at least 200 ton of PCB contaminated oils and materials. 180 ton will be disposed by private sector coming mainly from electrical distribution companies and the project will support 20 ton coming from sensitive sites who do not have the technical and financial capacity to ensure environmentally sound PCB disposal. This distribution between the private sector (mainly power sector) and sensitive sites will be confirmed based on the first initial activity of an updated national inventory. Due to the lack of PCB disposal capacity within the country itself, all waste containing PCB content should be exported to other countries in accordance with the Basel Convention's guidelines.

Within this Output, a site-specific environmental and social impact assessment (ESIA) will be conducted.

The elimination of PCBs contaminated equipment will be achieved in the most cost-effective possible manner. For this purpose, two groups will be mainly targeted: sensitive sites and private PCB equipment holders.

Firstly, sensitive sites, such as hospitals, water wells installations and educative organizations or schools, will receive larger portion of GEF contribution. For these sensitive sites, the chemical analysis required by the inventory will be conducted and paid for by the Project and PCB elimination will be

facilitated by the Project. In addition, the stockpiles identified within sensitive sites will be stored and consolidated previous to exportation for final disposal. This activity will be also supported by the Project.

The second group, private PCBs holders, will be identified through promotion by the System referred to in Output A1 and/or through the inspection campaign conducted by enforcement authorities (Output A2). These companies will be benefited with coordination, technical assistance, and logistics optimization.

Together with the electric power distribution companies, this disposal of both equipment and liquids stored in tanks as well as the equipment withdrawn will be coordinated. Within this activity, in coordination with the Project, MINSA will have the task of overseeing the process of removing PCBs from the country, through the implementation of the National environmentally sound management/elimination plan.

OUTCOME D: USE OF HBCD CONTAINING MATERIALS MINIMIZED (300 TON) AND ELIMINATION OF HBCD CONTAINING WASTE ACHIEVED (30 TON)

Output D.1: Programme for reduction of Expanded Polystyrene and waste containing HBCD.

This Output aims to develop Panama's capacity to phase out liabilities that may exist of HBCD due to construction sector activities. The recently developed NIP identified the construction sector as the main source of HBCD due to its presence in EPS sheets as a flame retardant. During the PPG phase some of the importers and producers declared that their products were no longer containing HBCD. Additionally, the remaining importers and producers did not provide information.

This Output will allow the country to obtain detailed information on the existing amounts of HBCD in producers and importers as well as in buildings and landfills and consequently the design of a national programme for its reduction and elimination. Through the implementation of this programme the project will evidence the reduction of 300 ton of EPS waste containing HBCD. It is important to highlight that this target will be reviewed and confirmed during the first two years of the project implementation and submitted in MTR.

The following activities will be developed to reach Output D.1:

1. Initial Assessment: The project will assist in the activities to update the inventory of EPS/XPS produced and imported in the country. In addition, gather information and assess stocks of HBCD in sectors where presumably have been used as well as the identification of waste where it could potentially have been disposed of.
2. Monitoring Plan: based on previous analysis, design and implement a monitor plan of HBCD in construction sector. The project will support the sampling of representative sites enabling, through statistical methods, estimate type and quantities in buildings that may contain HBCD. This monitoring plan will allow to validate and specify estimations made for HBCD with the international guidelines in the National Implementation Plan (NIP).
3. Inventory Report: Elaborate a report and outreach of inventory results on imports, production of EPS/XPS containing HBCD and its presence in buildings or other relevant sites identified nationwide.
4. National Reduction Programme: develop a programme for reducing EPS with HBCD as building material. This programme, if needed based on previous developed information, will include a technical and economical feasibility assessment and a comparative analysis for the transition to alternative substances to expanded polystyrene waste (EPS) with HBCD, taking into account the guidelines of the Stockholm Convention, the Basel Convention's technical guidelines on the environmentally sound management of wastes with HBCD, and the concentration levels of the substance present in products/waste (thresholds). The goal of this programme will be to gradually decrease the use of EPS with HBCD in buildings, and to promote its treatment and disposal at the end of its useful life.

This programme will contribute to the reduction of at least 300 ton of EPS containign HBCD starting from the third year of implementation at a rate of 100 ton/year.

A Strategic Environmental and Social Assessment (SESA) process will be undertaken during development of the HBCD National Reduction Programme.

Output D.2: Pilot Projects (2) of final disposal of 30 ton of EPS waste with HBCD within construction sector.

This Output is linked to Output D.1 in order to implement two (2) demonstration projects for introducing best available techniques/best environmental practices (BAT/BEP) in the use and management of EPS waste with HBCD in priority sectors. Pilot sites will be defined once the detailed inventory is finished. This activity will be closely coordinated with the Panamanian Chamber of Construction (CAPAC).

Within this Output, a site specific environmental and social impact assessment (ESIA) will be conducted for each of the selected pilot sites.

The following activities will be developed to achieve Output D.2:

1. Sign an agreement between parties. Prior to implementation, an agreement will be signed, documenting the responsibilities and commitments assumed by each party within project's framework.
2. Segregate, storage and finally dispose waste. The project will ensure a suitable identification, labelling, segregation, allocation of proper receptacles, transport and final disposal of waste related to the construction activity. This activity will include the training of construction workers/staff linked to pilot site.
3. Identify worldwide best available technologies for treatment and elimination of EPS waste with HBCD and assess its implementation at a national level.
4. Implement treatment and disposal of 30 ton of EPS waste with HBCD in pilot sites.
5. Elaborate a Technical Guideline for waste management in construction activities. This technical guideline aims to strengthen the construction sector promoting the environmental sound management of wastes and minimizing risk exposure of workers, taking into account gender considerations. The project will disseminate this technical guideline to engineers, architects, technical personnel, foremen, site masters, general workers and administrative personnel within the construction industry. Additionally, the project will implement awareness raising activities targeting normal citizens and building workers at a smaller scale.

PROJECT COMPONENT 3: PREVENTION AND MINIMIZATION OF MERCURY EMISSIONS.

OUTCOME E: MERCURY EMISSIONS IN THE HEALTH SECTOR PREVENTED AND REDUCED THROUGH THE IMPLEMENTAION OF GOOD PRACTICES AND IMPROVED MANAGEMENT OF MERCURY CONTAINING PRODUCTS AND WASTES (350 kg)

Output E.1: Pilot projects (5) for replacement of mercury containing equipment/products and establishment of a management and temporary storage system of mercury waste, in large hospitals and small priority health centres.

These set of activities will contribute to reduce mercury emissions from the health care sector through the progressive replacement of those mercury added products that are still currently used in health facilities. For this purpose, 2 large hospitals and 3 prioritized small health/hospital centres involved in activities under Output B1 will be selected for the implementation of activities under this Output. Based on the results and lessons learned, a national replication strategy will be designed to reach 100% of government health care network. (908 health care facilities).

Within this Output, and in line with Output B1, a site specific environmental and social impact assessment (ESIA) will be conducted for each of the selected sites.

The following activities will be developed to reach Output E.1:

1. Signing of an agreement: prior to implementation, an agreement will be signed with the pilot hospitals and healthcare centers, documenting the responsibilities and commitments assumed by each party within project's framework.

2. Consolidation of a working group: each of the selected establishments requires the definition of a working group. This group will be considered of reference as responsible and guarantee of the implementation of activities related to mercury added products replacement, their safe handling and temporary storage within the facility. The group will work under the leadership of the project team and must have the support of the hospital management. Ideally, the working group will be made up of representatives from different sectors (planning, nursing, paramedics, purchase, health, and biosafety, etc.) ensuring women representation as well.

2. Mercury Inventory: as a first step, a comprehensive inventory of equipment, devices and wastes containing mercury in use or stored will be carried out. The project will assist in the development of procedures for the identification of materials/equipment/devices that containing mercury, quantify them and determine their location within the health facility. It will be important not only to identify amount and location, but also existing practices for mercury spills and waste management. The collected information will be considered as a baseline for the mercury added product replacement schedule. This activity will consider international guidelines on mercury management at healthcare sector.

3. Establishment of a mercury elimination programme: based on the inventoried mercury, the project team will develop and implement a programme for mercury added products replacement within the health facility. This program will mainly include: the evaluation of mercury-free alternatives that meet WHO technical specifications, are cost effective and preferably available in the country; the development of a mercury-free purchasing policy and a replacement schedule for existing mercury-added products.

4. Mercury segregation, labelling and storage: aligned to the mercury replacement schedule, a segregation programme for waste containing mercury will be developed and implemented in accordance with current national regulations and directives by the Ministry of Health. Mercury-contaminated waste will be segregated and labelled as follows: mercury waste container; dental amalgam waste container; medical devices with mercury container; batteries and cells container; broken mercury lamps container. Each health facility will identify and condition a physical space for the temporary storage of mercury waste produced by the establishment.

Procedures and technical guidelines for mercury waste segregation, labelling and storage, as well as for mercury spills management, will be developed and disseminated within health facility workers. Likewise, technical specifications for physical temporary storage will be defined and documented.

5. Training plan for staff: a continuous training plan will be defined targeting all workers of the health institution. Emphasis will be placed on expanding knowledge about the toxicity of mercury, its impact on health and the environment, the correct management of small mercury spills, segregation, labelling and the temporary storage of waste with mercury. This training will also introduce Best Practices for Hospital Waste Management developed under Output B1.

6. Manual for mercury added products replacement: The activities developed in the framework of the pilot projects and the resulting lessons learned will contribute to the development of a Manual for the replacement of mercury added products in the health sector.

7. National replication strategy: based on pilot projects results, a national strategy will be designed to promote gradual replacement of mercury added products at national level, to reach all health facilities in both public and private sectors. The project will contribute to the awareness and dissemination of the manual among health establishments in the country.

Output E.2: Pilot projects (2) in hospitals for reduction of emission of mercury through prevention and application of BAT/BEP for management and disposal of waste.

This activity will contribute to reduce mercury emissions from the health care sector through prevention and application of BAT/BEP for management and disposal of mercury resulting from existing mercury-added products in health facilities. For this purpose, 2 of the hospitals involved in Output B.1 will be selected for the implementation of activities under this Output.

Through this Output the project aims to manage and dispose of at least 350 kg of pure mercury eliminated from mercury-added products in the health sector. These pilots will focus not only on pure mercury products in the health sector (medical thermometers, sphygmomanometers and dental amalgams), but will also include other products identified as fluorescent lamps, batteries with mercury and thermostats according to the priorities of each facility. In this way, this Output is related to Output E.1. In addition, these pilots will introduce BAT/BEP for the healthcare waste management into activities developed in a context of COVID-19. In this respect, this Output is also linked to Output B.1.

Within this Output, and in line with Output B1, a site specific environmental and social impact assessment (ESIA) will be conducted for each of the selected sites.

The following activities will be developed to reach Output E.2:

1. Plan for Mercury Management System: the project will develop and provide the physical requirements for implementing a mercury management system within the 2 selected facilities, which include the introduction of best practices for mercury management and the physical space for the temporary storage of mercury waste. This system includes the development of policies, internal procedures, and guidelines for the management of mercury and healthcare waste in accordance with individual conditions, current national legislation and guidelines established by the Minamata Convention and the Technical Guidelines for the Environmentally Sound Management of Wastes consisting of elemental mercury and mercury-containing or - contaminated wastes of the Basel Convention.

In addition, BAT/BEP for healthcare waste management developed and implemented under Output B.1 will be applied within these selected hospitals.

2. Long Term Storage Sites, Treatment and Final Disposal Assessments: the project will analyze potential sites for long term storage of mercury residues at the national level that are technically and economically viable. The criteria for the selection of final mercury storage sites will be established based on international standards and the country's needs (in line with national hazardous waste management related strategies/plans and priorities, Minamata Convention and Basel Convention Guidelines). The project will also produce technical guidelines for adequacy, operation, and control of storage sites, as well as potential responsible parties for their management.

Likewise, the project will assess different technically and economically viable alternatives for treatment and final disposal of mercury based on identified quantities and type of mercury waste streams at national level.

3. Training Programme Development: the implemented activities will be accompanied by a continuous training programme at all levels within the hospital and the storage facilities on available BAT/BEP for mercury and health care waste management and health risks associated with the use of mercury products.

PROJECT COMPONENT 4: MONITORING, EVALUATION AND DISSEMINATION OF PROJECT RESULTS AND AWARENESS-RAISING AND TRAINING.

OUTCOME F: PROJECT RESULTS MONITORED, EVALUATED AND DISCLOSED.

Output F.1: M&E and adaptive management applied in response to the needs and results of the mid-term assessment.

The project results as outlined in the Project Results Framework (Section V), will be monitored periodically during implementation to ensure that the project effectively achieves its results. The results of the evaluations will be reported in an intermediate and final evaluation and the lessons learned captured will be integrated in the project through adaptive feedback management. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP POPP and UNDP Evaluation Policy.

As a standard practice for every UNDP project, continuous monitoring of FSP results and achievements will be ensured, while the application of adaptive management of the project after conclusion of the Mid-Term Review (MTR) will be warranted. The Project Management Unit (see Section VII on Governance and Management arrangements for detailed information) will design the project's M&E system and be responsible for implementing the project's M&E Plan (see Section VI below), including the Project's Inception Workshop, annual planning workshops and Project Implementation Reports (PIRs).

The following activities will be implemented to achieve Output F.1:

1. Development of Project's Inception Workshop.
2. Monitoring:
 - a. Project Results Framework (outcome indicators, GEF Core Indicators, baseline and annual target indicators).
 - b. Project Risk Matrix, Environmental and Social Framework/Social Environmental Screening Procedures (ESMF/SESP), the Gender Analysis and Action Plan, and the Stakeholder Engagement Plan.
3. Holding Project Steering Meetings.
4. Carrying out 'Mid-Term Review' (MTR): The MTR will be carried out after the second submission of the PIR; it will assess the progress of each project activity and attainment of the project's indicators presented in the Project Results Framework (Section V) and Multiyear Work Plan (Annex 3). This review will also consider one Gender Assessment of project impact completed as part of MTR and the disbursement of financial resources and co-financing provided by project partners, and it will monitor and assess administrative aspects for the execution of the project. The MTR will also inform the adaptive management of the project and improve its implementation as a remainder of the project's duration.
5. Carrying out Terminal Evaluation (TE): The TE aims to evaluate whether all planned project activities have been developed, resources granted by the GEF have been disbursed and spent in line with GEF and UNDP policies and rules, following activities as set out in this Project Document. The TE will also extract and identify lessons learned, how to disseminate them most efficiently and make recommendations to ensure that project results are sustainable.

Output F.2: Lessons learned, and best practices extracted and disseminated at the national, regional, and global level.

This FSP envisages the development of a strategy for knowledge management and dissemination at the national and regional levels of project results, lessons learned and replication tools through different means such as workshops and conferences aimed at key players in the sectors served. Decision makers, policy makers and project makers, academia and other organizations that can broaden the scope of dissemination will be taken into account. This component will support the enabling of a space on the

MINSA website to share good practices for the management of mercury, PCBs, HBCDs and unintentional POPs.

The following activities will be developed to reach Output to raise awareness of 1,884 people, (942 women, 942 men):

1. National Communication Strategy: the project will develop a comprehensive communications strategy for all project stages in order to raise awareness on stakeholders, project beneficiaries and general public about project activities and expected results. A specific outreach and awareness campaign will be carried out for vulnerable groups involving the development of a communication plan (through radio media and social media) for the dissemination of health and environmental risks associated with the management of POPs and mercury. The targeted groups for raising awareness of management of POPs are the population of the most vulnerable sectors such as manual workers in the waste sector, recyclers, health workers, people working or residing close to landfills or dumps (3 km) and NGOs working with this population.

2. Implement the Stakeholder Engagement Plan detailed in Annex 8 and briefly described in following section "Stakeholder Engagement".

3. Implement the Gender Action Plan detailed in Annex 10 and briefly described in following section "Gender equality and Women's Empowerment" for gender mainstreaming and raising awareness at different levels of related key targeted groups.

Through this Output, the main findings, all lessons learned, best practices and project experiences will be gathered. All information will be captured in user-friendly means to share, disseminate, and update communication materials, using mass media and other channels of communication, both in printing and online forms, integrating the corresponding gender-related challenges.

4) Alignment with GEF focal area and/or Impact Program strategies.

The alignment with GEF focal area strategies is the same as presented at the PIF stage.

The project is aligned to the following Focal Area objective:

CW-1-1 Strengthen the sound management of industrial chemicals and their waste through better control, and reduction and/or elimination.

5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing.

Component 1. Strengthening Legal and institutional capacities for sound management of POPs and Mercury.

Contributions from the baseline:

Projects funded by GEF "Support in the review and updating of the Stockholm Convention's National Implementation Plan on Persistent Organic Pollutants (Project 93530)" and "Support in initial assessment and definition of requirements and national needs for the ratification of the Minamata Convention on Mercury (Project 93529)", have resulted in a number of government institutions

becoming aware of the problem of products and waste with POPs and Mercury. There is an interest in implementing the National POP Implementation Plan and Mercury Action Plan to improve the current situation of the management of these substances. However, both projects have clearly demonstrated that national capacity for the management of POPs and Mercury has major weaknesses that must be strengthened, both in the legal and regulatory framework, technical and analytical capacity and the availability of up-to-date and consolidated information. All costs of bad management of POPs and Mercury are borne by the country without a systematized system to prevent and/or recover those costs to achieve sustainable financing.

Contributions from Co-financing:

MINSA (and other governmental entities) will strengthen human resources to address the implementation of both conventions and establish an inter-agency Commission on Chemicals to improve and strengthen cooperation and coordination between government authorities with competence in the area and for a smooth exchange in the information required for the management of POPs and mercury.

The University of Panama and the Center for Research and Information on Medicines and Toxics (CIIMET) will contribute to the strengthening of analytical capacity at the national level for POPs and mercury analysis as well as the monitoring programme development.

Contributions from GEFTE:

The funding will be used for the support of the development of a National Comprehensive Policy for Chemicals LCM, strengthening the national legal and regulatory framework (*output A1*). Additionally, design and execute a training plan for the different governmental institutions for building capacity and knowledge in public sector, assessing national analytical capacity and developing a monitoring program, both contributing to the National Information System on chemicals (*A2*).

Component 2. Prevention and Reduction of POPs emission.

Contributions from the baseline:

The largest emissions of unintentional POPs come from poor solid waste management in the country, including the burning of open-pit waste. Much depends on the implementation of the new National Plan for Integral Waste Management 2017 - 2027, whether the management and malpractice of burning in landfills and domestic burning improves. It is clear that it will be a major and long-term challenge for Panama to achieve improvements and that cooperation from many actors is required.

With regard to the incineration of hospital waste, it is highly likely that the issuance of resolution #560 of 2017, which prohibits the disposal of untreated hospital waste in landfills, has resulted in an increase in the incineration of the amount of these wastes in recent years (the inventory of unintentional POPs has 2015 as its baseline year) being a technology available in the country. However, some hospitals are initiating changes in the management of their waste towards new technologies, which would result in a reduction in dioxin and furan releases.

The three (3) electricity distributors and the state-owned transmission company ETESA have withdrawn transformers and dielectric oils with PCBs from the country in the past years and are committed to continuing the elimination of them over the next years. However, the inventory of pole transformers in use must be strengthened in order to phase-out PCB-identified equipment. There is no withdrawal schedule in the country for use and subsequent disposal of PCB. Similarly, verification of the presence of PCB equipment in all public bodies and in the private sector with own transformers must be carried out and there is currently no plan for this task.

The current situation for the new POP HBCD is much less advanced than for other POPs such as PCBs and Dioxins and Furans. The inventory carried out is incomplete and a lot of data is missing, mostly in the area of residues with these substances. There is currently no specific management for these types of waste with HBCD with the proper segregation, elimination and final disposal of EPS sheet construction waste with HBCD content.

Contributions from Co-financing:

The government through the Ministry of Environment and the Ministry of Health will be the co-financing for the improvement of solid waste management (including health care waste) in the country with human resources to strengthen implementation of activities as well as operating costs of technologies for the treatment of hospital waste by public hospitals.

As for PCBs, distribution companies and ETESA, will continue to contribute financial and human resources to the inventory and disposal of its own PCB equipment. In addition, MINSA will provide human resources to establish an audit programme for both inventory and the disposal process.

Another important co financing contribution will be the academic sector, the University of Panama and the Center for Research and Information on Medicines and Toxics (CIIMET) will support the development and implementation of BAT/BEP for solid waste management in landfills, healthcare waste management in health establishments and waste containing HBCD, as well as providing training and raising awareness activities.

Furthermore, co-financing from the implementation of the National Plan for Integral Waste Management (PNGIR) 2017 - 2027 by the government and management and disposal costs for companies that generates EPS waste with HBCD is expected during the implementation phase of this project.

Contributions from GEFTF:

The support of the GEFTF is to fully assess the problem UPOPs emissions due to waste management in the different selected landfills and health establishments, and the introduction of BAT and BEP to prevent and reduce burning practices in these selected demonstration sites through establishment of a program for the prevention, and integration of prevention and reduction measures in the PNGIR (*output B1 and output B2*).

Regarding PCB's, the requested financing will be used to establish a contaminated equipment elimination plan supported by the integral inventory of PCB equipment. Likewise, the project will support the PCB management coming from sensitive sites who do not have the technical and financial capacity to ensure environmentally sound PCB disposal (*output C1 and output C2*).

For management of waste containing HBCD the project will support the establishment of a programme for reduction of Expanded Polystyrene and waste containing HBCD, with prevention as basic concept, and a pilot for final disposal of EPS sheet waste with HBCD (*output D1 and output D2*).

Component 3. Prevention and Minimization of Mercury Emissions.

Contributions from the baseline:

Proper mercury waste management is incipient in the country. Although the disposal of untreated hospital waste (with or without mercury) is prohibited, inadequate open-pit disposition and even burning practices are maintained in the interior of the country. The health sector is a well-defined sector to start with proper management of its hospital waste with mercury and progress has also been made recently with the development of a technical standard for the comprehensive management of mercury wastes in public and private health facilities. This project should establish plans for the proper segregation, storage and final disposal of waste containing mercury.

Contributions from Co-financing:

The co-financing comes from MINSA, in the form of investments for the implementation of replacement of mercury equipment/products or the application of better available technologies as well as investments for new temporary disposal sites, scaling up the results of the pilot projects in their network of hospitals and health centers around the country, fostering the sustainability of the adopted measures and technologies.

Contributions from GEFTF:

The project will support the design and execution of pilot projects at selected hospitals for replacement of mercury containing equipment/products and establishment of a management and temporary storage

system and facilities for mercury waste (*output E1*) is also supported. In addition, the project will finance 2 Pilot projects in hospitals for reduction of emission of Mercury and UPOPs through prevention and application of BAT/BEP for management and disposal of waste. (*output E2*).

Component 4: Monitoring, Evaluation and Dissemination of Project Results and Awareness-Raising and Training

Contributions from the baseline:

The projects financed by GEF for updating the Stockholm Convention National Implementation Plan (Project 93530) and the diagnosis and action plan for mercury products and waste (project 93529) have incorporated companies from the private sector, and to a lesser extent civil society organizations in participation in workshops. The POP project has also generated brochures, pamphlets and articles that assist in raising awareness of the private sector, non-governmental organizations and the general population. However, there is a lack of a specific training and awareness-raising programmes for the private sector, civil society and the general population, which has to be developed

Contributions from Co-financing:

The government as well as guilds or private sector associations will provide in-kind contributions in the form of human resources and/or facilities for holding events, forums, workshops, trainings, courses and awareness-raising.

Contributions from GEFTF:

The project will finance the establishment of a project monitoring and evaluation system with its mid-term and final evaluation reports (*output F1*), as well as the development of a National Communication Strategy for knowledge management and dissemination at the national and regional levels of project results, lessons learned and replication tools (*output F2*) .

6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF).

The Global environmental benefits (GEB) of the project at the CEO endorsement stage are the same as presented at the PIF stage.

The project's GEBs include the following:

- 200 ton of equipment and materials containing PCB.
- 330 ton materials/residues containing HBCD (2.5 ton of HBCD).
- 350 kg of mercury.

- 6 gTEQ of unintentional POPs.
- 27,063.76 tCO₂ eq.

7) Innovativeness, sustainability and potential for scaling up. ?

Innovation

The proposed project is the first of its kind in Panama to address the problem of the reduction and elimination of POPs and mercury in different activities/economic sectors within the territory. The proposal is innovative since it requires and promote an interinstitutional coordination among relevant key authorities competent in life cycle management of hazardous chemicals in Panama. Additionally, involves an integrated approach of technical and financial collaboration between private and public sectors for activities implementation to reach project targeted goals. In particular, the support of PCB owners (mainly in electrical sector), construction, tourism and healthcare sectors will be essential.

Although in the elimination of PCB, Panama has had experience gained with the disposal of PCB equipment from the electricity sector, the prevention and reduction of the release of dioxins and furans and other unintentional POPs through the implementation of Best Available Techniques and Best Environmental Practices is completely new and innovative for the country, as well as for the proper management of waste with HBCD from the construction sector. An additional innovative aspect is the prevention and minimization of the use of plastics through the implementation of pilot projects in touristic areas, enabling as a consequence the minimization of plastics disposal, preventing and reducing UPOPs emissions.

As for hospital waste contaminated with mercury, although some initiatives to remove mercury added products and its waste from health establishments already exist in the country, this proposal will strengthen and speed up the transition and will be the first to address the problem of long-term storage of this contaminated waste until its final environmental treatment and disposal.

On the other hand, the management of hospital waste in Panama presents a huge challenge and this project would be the first to address this problem through pilot projects executed in several hospitals and health centers. Considering the associated increase in the generation of HCW due to the COVID-19 pandemic, it is fundamental for Panama to improve the management of HCW.

Sustainability

The sustainability of the project beyond its completion will be guaranteed mainly:

Through Component 1 by the establishment of coordination mechanisms through government authorities such as the creation of the Inter-Agency Commission on Chemicals and Waste, including its technical working groups for addressing POPs and mercury management through its life cycle. Additionally, after the project implementation Panama will have a strengthened regulatory framework, an enhanced analytical and monitoring capacity for POPs and mercury management as well as capacity built in associated public entities.

Component 2 will build national capacity through the implementation of cost-effective demonstration projects in different municipalities introducing BAT/BEP for waste management (in landfills and health establishments) to address burning problem in Panama and associated UPOPs emissions. Through these pilots the project will ensure sustainability through the promotion of integrated waste management with focus on waste reduction, segregation at source, recycling and reuse as best practices. This approach will support the country to lay the foundations to advance in a gradual and sustainable transition towards the closure of landfills, as the ultimate goal. For this purpose, the project will work with many stakeholders at national and local level, including waste pickers, recyclers and CSO which contributes to ensure durability of results.

For HBCD, this FSP has considered the development of a National Programme for reduction of EPS with HBCD as building material. The programme foresees the identification and introduction of alternatives to HBCD, guaranteeing the sustainability of the project which aims to phase out the use of this substance with feasible, safe, and cost-effective alternatives. Additionally, through the pilot projects, this FSP will assess treatment and disposal options building national capacity for the treatment of such waste beyond project lifetime. Furthermore national regulation will be strengthened for control and import of products containing HBCD and their sound management at the end of their lifecycle, ensuring durability.

In terms of PCB, sustainability is guaranteed through the development of a National Strategy for PCB disposal aligned to Stockholm Convention deadlines, based on the feasibility study and the disposal capacity assessment, in close coordination with the electric companies (which owns more than 90% of electrical equipment within the country).

Through Component 3, through the phase out of mercury added products in pilot sites the project will develop a national replication strategy within private and public healthcare sector, which includes mercury-free purchasing policies based on the assessment of cost-effective safer options. Additionally, the project will accompany this national strategy with the identification of sites for long-term mercury waste storage until its effective final disposal, which ensure sustainability of mercury phase out in health establishments. Furthermore, within Component 3, this FSP will be working together with the main competent health authorities, MINSA and CSS, and by strengthening their capacities they will enable sustainability in the health sector. This FSP also foresees, as part of Component 1 activities, the strengthening of the mercury waste management regulatory framework enabling durability.

Project sustainability is also ensured by the elimination and sound disposal of 530 ton of waste containing POPs and mercury and the reduction of 6 gTEQ/year of UPOPs emissions. Furthermore, the implementation of the stakeholder engagement strategy will also help the project to better engage the relevant stakeholders at key times, ensure commitment to project goals and instill a sense of ownership in the project's implementation and its results.

Potential for Scaling Up

The potential for scale up is essential to this project, since results obtained in demonstration projects implemented for different waste management must be replicated throughout the country in the relatively short period of time.

Under Component 2, the activities for the minimization of UPOPs emissions through demonstration projects in municipalities (including touristic places) will implement interventions to minimize, segregate, recycle and reuse different waste streams (such as plastics, health care waste, etc.) and experience from these pilots is expected to be scaled-up or replicated nationwide to other municipalities, regions, other types of chemicals/wastes, larger volumes, as well as other countries among other possibilities.

Additionally, the activities proposed for the identification of HBCD in construction sector will build the necessary capacity for Panama to scale-up such efforts to eliminate additional POPs or other chemical substances of concern, while the introduction of BAT/BEP for the management, treatment and/or disposal of products and wastes containing HBCD, can be scaled-up in order to put in place sustainable systems to dispose of and treat Industrial POPs containing waste of which the generation cannot be avoided.

To enable Panama to phase-out (by 2025) and dispose of (by 2028), all remaining PCB-containing equipment as per the Stockholm Convention within its territory, the project will: update the national PCB inventory; complete a PCB disposal capacity assessment; undertake a feasibility study and

prepare a financial plan for elimination of the entire national PCB inventory; and update/improve the National Management and Disposal Strategy for PCBs in line with the Stockholm Convention.

Finally, under Component 3, activities to be implemented in demonstration projects are expected to scale up through a proper strategy based on lessons learned to health establishments, public and private, nationwide for replacement and safe dispose waste containing mercury.

[1] National Plan for Integrated Waste Management 2017-2019 (INECO 2017) - <http://www.aaud.gob.pa/plangestion/PNGIR.pdf>

[2] https://www.asamblea.gob.pa/APPS/SEG_LEGIS/PDF_SEG/PDF_SEG_2010/PDF_SEG_2019/2019_P_017.pdf

[3] PCBs Final Report for Stockholm National Implementation Plan (NIP) 2008.

[4] 6% in accordance with international practices.

[5] Average 0.453 ton/equipment based on inventory 2008.

[6] Average 27% of total weight of equipment is due to dielectric oil based in inventory 2008.

[7] Water treatment plants, hospitals, financial intermediaries, study centers, municipal infrastructures.

[8] Based on interviews carried out by PPG team.

[9] National Plan for Integrated Waste Management 2017-2027 (INECO, 2017) - <http://www.aaud.gob.pa/plangestion/PNGIR.pdf>

[10] Socio-Economic Report for the development of the National Plan of Implementation and application within the framework of the Stockholm Convention. November 2018.

[11] National Plan for Integrated Waste Management 2017-2027 (INECO, 2017) - <http://www.aaud.gob.pa/plangestion/PNGIR.pdf>

[12] Association of municipalities in Panama (AMUPA) May 2021.

[13] National Plan for Integrated Waste Management 2017-2027 (INECO, 2017) - <http://www.aaud.gob.pa/plangestion/PNGIR.pdf>

[14] Urban and Domiciliary Cleaning Authority (AAUD) 2015. Currently AAUD is conducting a survey for updating recyclers in landfills.

[15] ?First National Recyclers Census in Panama?. National Recyclers Movement Panama (MNRP).

https://latitudr.org/wp-content/uploads/2019/01/22_Panama_PrimerCensodeRecicladores.pdf

[16] Analysis and Diagnosis of the Current Situation. Volume I, for PNGIR (INECO 2017) - [http://www.aud.gob.pa/plangestion/ANEXOS/20170731_E%201.4.6.3_%20PNGIR%20DIAGNOSTICO%20\(Tomo%201\)_V3.pdf](http://www.aud.gob.pa/plangestion/ANEXOS/20170731_E%201.4.6.3_%20PNGIR%20DIAGNOSTICO%20(Tomo%201)_V3.pdf)

[17] DIOXINS AND FURANS INVENTORY. Final Report, 2018.

[18] This analysis will be reviewed at the beginning of the implementation and updated if needed.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Please, refer to Annex D of this document for detailed geo-referenced information and maps where the project interventions will take place.

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

N/A

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities

Private Sector Entities Yes

If none of the above, please explain why:

N/A

Please provide the Stakeholder Engagement Plan or equivalent assessment.

During PPG, a stakeholder analysis was undertaken and as a result, a stakeholder engagement plan was developed. This plan describes the different activities and engagement strategies to be conducted during the implementation period through which the project aims to engage the key stakeholders, addressing their concerns and meet and/or manage their expectations and proposed means of communication to be used. The detail of this analysis and plan can be found in Annex 8.

This FSP needs to engage a variety of stakeholders not only from the public sector but also from the private sector in order to achieve the planned outputs and outcomes. The following table summarizes the actors that the project will need to involve and describes their responsibilities in project's implementation as well as their contributions to addressing the development challenge:

Table 8. Stakeholders.

Type	Group	Stakeholder	Role
Public Entities	National Government	Ministry of Health (MINSA)	<p>The Ministry is responsible for the development and implementation of health policies including responsibilities related to monitoring, control, regulation, and standardization. In addition, MINSA registers medical devices and monitors companies that import, manufacture, distribute and / or store medical equipment and devices.</p> <p>It corresponds to MINSA the management of chemicals in general and for the hazardous waste storage and disposal. It chairs the inter-ministerial committee on Chemical Safety and the Solid Waste Inter-Institutional Committee. It hosts the focal points to the Stockholm Convention on Persistent Organic Pollutants (POPs), the Minamata Convention on mercury, and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal.</p> <p>The General Environmental Health Sub-directorate of this Ministry, where the Sections of i) Hazardous Wastes and Chemicals and ii) the Environmental Sanitation and Non-hazardous Wastes are found, will be the counterpart for the project.</p> <p>The Sub-directorate will collaborate with a multi-stakeholder coordinating committee comprising of the main POPs and mercury stakeholders.</p> <p>Under MINSA, the directorates of National Medical Devices, the Departments of i) Buccal Health, ii) Installations and Services to the Population, and iii) Occupational Health also manage programs related to controlling and handling POPs and mercury and are involved in the project.</p>

		Ministry of Environment (MiAmbiente)	<p>MiAmbiente formulates, plans, approves and executes the National Environmental Policy for the sustainable use of natural, terrestrial and hydro-biological resources, monitoring their execution; and preventing environmental degradation.</p> <p>The entity issues resolutions and technical and administrative standards for the protection and control of environmental quality with the participation of the corresponding competent authority in each case.</p> <p>Also, the Ministry ensures compliance with the Law, its regulations, environmental quality standards and technical and administrative provisions assigned by law.</p> <p>MiAmbiente will be a key actor for activities under Component 1: Strengthening legal and institutional capacities for sound management of POPs and mercury.</p>
		Ministry of Labor and Labor Development (MITRADEL)	<p>The MITRADEL promotes, regulates, administers, and executes the national labor policy. It seeks to improve the quality of life of the Panamanian population, promoting harmonious, decent, and dignified labor relations between workers and employers.</p> <p>It will support the development and participation in training activities to develop the national capacity of the government, the private sector, industry, the health sector, and law enforcement entities to ensure compliance with the conventions on chemicals and waste concerning matters of occupational health. MITRADEL will be involved in Component 1 activities.</p>

		<p>Ministry of Security</p> <ul style="list-style-type: none"> - National Border Service (SENAFRONT) - Rural Environmental and Tourism Directorate, of the National Police. 	<p>SENAFRONT specifically protects the land and river borders of the Republic of Panama and seizes illegal merchandise. At the same time, the Rural, Environmental, and Tourism Police focuses on preserving the country's protected areas and tourist areas. Both entities are attached to Panama's Ministry of Security. These institutions will participate in Component 1.</p>
	Other Public Institutions	<p>Urban and Domiciliary Cleaning Authority (AAUD)</p>	<p>This Authority, whose board of Directors is presided by MINSA, is in charge of the management and integral management of solid waste in the Republic of Panama. The Authority develops policies and general strategies and plans regarding the operation and solid waste disposal of solid wastes. The AAUD provides technical assistance and training to municipalities to better manage solid wastes, including the operation and disposal services.</p> <p>Among its duties are formulating the National Plan for Integrated Solid Waste Management and its gradual implementation in the municipalities.</p> <p>The Authority will actively participate in Component 1 activities as a key stakeholder for institutional coordination and will be involved in improving the waste collection and disposal system in selected municipalities for activities under Outputs B1 and B2.</p>
		<p>National Customs Authority (ANA)</p>	<p>The ANA controls, monitors, and supervises the entry, exit, and movement of goods and means of transportation through all borders, ports, and airports. It also prevents, investigates, and punishes customs violations and intervenes in the international traffic of merchandise. It will provide information, as an importing country, on national inventories and will collaborate in the formulation of new standards. This Authority will be engaged in Outputs A1 and A2.</p>

		<p>The Panama Canal Authority (ACP)</p>	<p>The ACP is exclusively responsible for the operation, administration, operation, conservation, maintenance, improvement, and modernization of the Canal, as well as its related activities and services, following the legal, and constitutional provisions in force, so that the Canal may operate in a safe, continuous, efficient, and profitable manner.</p> <p>The Authority will provide information and participate in Outputs A1, A2, C1, and C2.</p>
		<p>Tourism Authority of Panama (ATP)</p>	<p>The ATP promotes the international and national tourism in the country. It addresses marketing and promotion issues with the creation of the Panama Tourism Promotion Fund (PROMTUR).</p> <p>This Authority will engage in pilot projects under Output B2.</p>
		<p>The National Institute of Statistics and Census (INEC)</p>	<p>INEC is as an agency attached to the Office of the Comptroller General of the Republic, with a national management level, which exercises the functions of directing and forming national statistics. It is responsible for collecting, processing, analyzing, and disseminating statistics that contribute to the best information and to the solution of the different economic, social, demographic, and environmental problems faced by the State and individuals.</p> <p>This Institution will contribute with statistics on POPs and mercury-associated products related to this FSP.</p>

		National Energy Secretariat (SNE)	<p>The SNE formulates and conducts the country's energy policy. It ensures compliance with the energy policies to guarantee the competitive, sufficient, high quality, economically viable, and environmentally sustainable supply of energy resources.</p> <p>The Secretariat will support the activities under Outcome C on the sound disposal of PCB-contaminated electrical equipment.</p>
		Colon Free Zone (ZOLICOL)	<p>ZOLICOL, an autonomous institution, is the largest free trade zone and the main container hub in Latin America. It is a regional distribution center that offers a logistics platform integrated by ports, railroad, highway, and airport. Two thousand (2,000) companies operate in this Free Zone. This zone offers a wide range of services such as import, export, storage, sales, marketing, distribution, and value-added logistics services such as packaging, labeling, classification, exhibition, among others.</p> <p>The Colon Free Zone will contribute with information on products containing POPs and mercury (some that may be illegal) entering the country through trading activities.</p>

	Public research and analytical institutions	<p>The following Institutes were identified:</p> <p>Gorgas Memorial Institute of Health Studies (ICGES).</p> <p>Specialized Institute of Analysis of the University of Panama (IEA)</p> <p>Institute of Scientific Research and High Technology Services of Panama (INDICASAT)</p> <p>Center for Research and Information on Medicines and Toxics (CIIMET)</p>	<p>The ICGES is a public health institution dedicated primarily to health research and disease prevention. The ICGES acts as a support, teaching, and advisory body for the Ministry of Health and other health sector institutions. In addition, it hosts the Central Reference Laboratory in Public Health. This body regulates all public, private, and diverse, commercial, and professional health laboratories established in the Republic of Panama. The ICGES proposes the appropriate technology to improve the health of the population in the different health areas.</p> <p>The IEA serves as the Official Reference Agency to the National Government and other health institutions in the quality control of medicines, drugs, food, cosmetics, biological products, radiopharmaceuticals, and others; made in the country or imported. The aim is to prevent direct or indirect effects on the health of the population. The Institute carries out research-oriented to scientific progress and disseminates scientific knowledge.</p> <p>INDICASAT, an Association of Public Interest (AIP), is a platform for Panama's scientific and technological advances. It has robust chemical and biological safety modules in its laboratories. The Institute researches the following areas: chemistry of natural products, biotechnology, immunology, neurosciences, pharmacology, toxicology, and parasitology. INDICASAT is the focal point in Panama of the International Atomic Energy Agency (IAEA, or International Atomic Energy Agency-IAEA) The Institute can provide several specialized services in chemistry and biology, such as water analysis, detection, and molecular characterization of pathogens, among others.</p> <p>CIIMET, attached to the Faculty of Medicine of the University of Panama, is a multidisciplinary body dedicated to researching and providing information on potentially toxic drugs and chemicals. It operates the Regional Center for the Stockholm Convention on Persistent Organic Pollutants. Also, it hosts the Basel Convention Regional Center for Training and Technology Transfer for the Mexico and Central America Sub-region. This Regional</p>
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	Local Government	Association of Municipalities of Panama (AMUPA)	<p>The AMUPA represents the interests of the municipalities of the Republic, bringing together all the municipal authorities.</p> <p>The association has been an agent of change in the definition, control, and adjustment of the decentralization process, ensuring that municipal interests are taken into account at all times.</p> <p>In particular, Oc?, Chitr?, Remedios, Panam?, Pinogana, Aguadulce, Ant?n, Pedas?, Chepo and Santiago will contribute to implementing Pilot Project activities to reduce dioxins and furans emissions produced by wastes burning in dumpsites by working in BAT / BEP combined with minimization of plastic waste in tourist areas under outputs B1 and B2.</p>
International Organization	Cooperation Agency	United Nations Development Programme (UNDP)	<p>UNDP is accountable to the GEF for the implementation of this project. This includes oversight of project execution to ensure that the project is carried out in accordance with agreed standards and provisions. UNDP is responsible for delivering GEF project cycle management services, and for the Project Assurance role of the Project Board/Steering Committee.</p> <p>UNDP and its Panama Country Office have extensive experience working with the private sector, governmental institutions and civil society.</p>
Private Sector	Corporate Associations	Panamanian Chamber of Construction (CAPAC)	<p>CAPAC brings together construction companies. The chamber advances negotiations with the government and private entities in favor of developing and strengthening the industry. It informs and guides its members on legislation, municipal agreements, rules, and regulations related to the construction sector. CAPAC will participate in Outputs D1 and D2.</p>

		<p>Chamber of Tourism of Panama (CAMTUR)</p>	<p>CAMTUR is an organization that brings together fifteen (15) major tourism associations and tourism companies. It represents the interests of the tourism business sector before the government and other public and private instances.</p> <p>This Chamber will contribute to Output B2 and benefit from the project's results.</p>
		<p>Panamanian Association of Hotels (APATEL)</p>	<p>APATEL is an Association of hotels whose objectives include cooperation in public relations and advertising campaigns to develop the lodging industry and tourist activities in general and contribute to the adequate promotion and image of the country.</p> <p>APATEL will contribute to and benefit from Outputs B2.</p>
		<p>Panamanian Chamber of Recyclers</p>	<p>The Chamber groups together companies and related organizations associated with the collection, packing/treatment to mainly export plastic waste. They promote training and better legislation for their sector.</p> <p>They will actively engage in Outputs B1 and B2 to improve the value chain of plastics in selected municipalities according to feasibility.</p>
		<p>Panama's National Cleaner Production Center (CNP)</p>	<p>Attached to the National Council of Panamanian Enterprises (CONEP, for the Spanish acronym), the CNP+L promotes, develops, and disseminates the concept and application of Cleaner Production. The center supports research and development programs oriented to Cleaner Production in all sectors of the economy. It also promotes and advises companies in the transfer of cleaner technologies and policies.</p> <p>The center will be engaged in Outputs A1 and A2, as well as in Outputs D1 and D2.</p>

	Electric Power Companies	<p>In light of the project, this group is made of:</p> <p>ENEL Green Power</p> <p>AES Panam?</p> <p>NATURGY/EDEMET-EDECHI</p> <p>ETESA.</p>	<p>These are power generation, transmission, and distribution companies that will be fully engaged to help design and implement the activities planned under Component 2, Outcome C on PCBs Management and Elimination in the Priority Electrical Sectors.</p> <p>These companies will also finance and ensure the disposal and elimination of PCBs contaminated equipment of their ownership.</p>
	EPS/XPS Companies	<p>In light of the project, this group is made of:</p> <p>Industrias Eupan, S.A</p> <p>Hopsa Panam?</p> <p>Ecotec Panam?</p> <p>Arco Technologies de Panam?, S.A.</p> <p>Syntheon Panamerica SRL</p> <p>Metales Panamericanos, S.A.</p> <p>Friolin Segundo, S.A</p> <p>IAD Panam?, S.A.</p> <p>- Comfort Home Panam?, S.A.</p>	<p>These companies have provided building materials to constructors, including laminated sheets that could contain HBCD as a flame retardant.</p> <p>They will provide information and data on their imports, production, and the sale of these products for effective implementation of activities under Outcome D.</p>

	<p>Waste Management and Disposal Companies</p>	<p>This group is made of collecting, stockpiling, exporting or treatment of hazardous wastes companies:</p> <p>Ecologic S.A.</p> <p>Auramek</p> <p>Pumper S.A.</p> <p>STI S.A Technological Services of Incineration</p> <p>And companies for collection and disposal of wastes:</p> <p>AguaAseo</p> <p>Aseo Capital</p> <p>Panama Waste Management</p> <p>Revi-Salud S.A.</p> <p>Pronto Aseo S.A.</p>	<p>These companies are licensed to hazardous waste management (transport, collect, storage, treatment, and disposal). Specifically, they will be engaged in one or more of the following activities:</p> <p>Assist the FSP with storage, treatment and final destination of hazardous wastes.</p> <p>Support the identification of feasible alternatives to elimination/destruction of HBCD.</p> <p>Participate in the execution of demonstration projects under Outcomes 2 and 3.</p>
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Civil Society	<p>Non-governmental organizations (NGO)</p> <p>Community-based organizations</p>	<p>In light of the project, this group is made of:</p> <p>Alliance Contaminants Zero</p> <p>MarViva</p> <p>Association for Nature Conservation (ANCON)</p> <p>APRONAD</p> <p>Foundation for the protection of the sea (PROMAR)</p> <p>Audubon Panama</p> <p>City of Knowledge Foundation/FAS-Panama</p> <p>Costa-Recicla</p> <p>GeoAzul</p> <p>MiMar</p> <p>Botellas de Amor Panama.</p>	<p>NGOs will participate in awareness and education programs. Particularly, one is going to be selected for conducting the implementation of Output B2.</p>
	Waste Pickers	National Movement of Waste pickers	<p>The National Movement of Waste Pickers is a non-profit civil society representing the interests of the waste pickers at the national level. They will be involved in pilot projects implemented under Outputs B1 and B2. Additionally, they will be benefited and enhanced in their working conditions.</p>

Academy	Universities	<p>In light of the project, this group is made of:</p> <p>University of Panama</p> <p>Technological University of Panama</p> <p>Latin University</p> <p>University Santa Mar?a La Antigua</p> <p>Specialized University of the Americas.</p>	<p>Universities will:</p> <p>Participate in awareness education programs regarding POPs and mercury.</p> <p>Share research and technological advances.</p> <p>Disseminate information</p> <p>According to the project coverage, especially regarding the selected locations to develop the demonstration projects, other relevant academic institutions will be further engaged in the project development.</p>
Other beneficiaries	Public Hospitals and Health Centers	<p>Group of public hospitals and health centers including the social security system (CSS).</p>	<p>Public hospitals and health centers provide health and dental services to the community they serve. They will:</p> <p>Contribute to the project by providing updated and reliable data/information about managing equipment in use or stored containing POPs and mercury.</p> <p>Engage in five (5) pilot projects to substitute products with added mercury and establish a temporal storage system of mercury wastes.</p> <p>Engage in two (2) pilot projects for the reductions of mercury emissions through BET / BAT.</p> <p>They will be involved with their biosecurity, technical and maintenance personnel in awareness and training activities for PCBs, healthcare waste and mercury environmental sound management. They will be engaged in carrying out activities under Outputs B1, C1, E1 and E2.</p> <p>In particular, the following health establishments will be involved: Hospital Sergio Nu?ez, Hospital Cecilio Castellero, Centro de Salud MINSA de Remedios, Hospital del Ni?o, Hospital de Metet?, Hospital Regional Rafael Estevez (CSS), Centro de Salud de Ant?n, MINSA CAPSI, Hospital Regional de Chepo (CSS) and Centro de Salud Canto del Llano.</p>

	Sensitive Sites	Other Sensitive Sites	Other sensitive sites, such as educational institutions, food markets, correctional institutions or any public site, in partnership with the related municipalities, will be involved in the development of FSP activities that could have direct impact on their facilities, as those related with the disposal of PCBs containing equipment, mainly electrical transformers, to be carried out in their geographic areas.
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In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

The Stakeholder's engagement plan is included in the Annex 8 of the ProDoc.

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor;

Co-financier; Yes

Member of project steering committee or equivalent decision-making body;

Executor or co-executor; Yes

Other (Please explain)

N/A

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

From the gender perspective, Panama's women and men need more information on environmental issues, prevention of health risks associated with male and female exposure to POPs and waste, and

more data?disaggregated by sex, age and other factors?is urgently needed to build policies and programmes that are more comprehensive. Although, the power, construction and waste management sectors, specifically covered in the context of this project, are usually male oriented, where males are in direct contact with POPs and mercury emissions, protection of women from hazardous chemical needs to be strengthened as they are indirectly impacted. Under this perspective, women are exposed constantly with hazardous chemicals, either through their families or directly when women received health care that use medical devices and materials with mercury in hospitals and clinical laboratories. In addition, many women are employed as nurses, therapy and technical assistants throughout the health system in Panama and can have occupational exposure to mercury from this kind of medical devices and materials. Annex 10 (Gender Analysis) of the ProDoc describes the process of assessing the gender challenges for the project and how these may influence the project?s outcomes.

Finally, it is equally necessary to strengthen institutional capacities in the country to ensure gender equality ?at professional and technical level? in decision-making processes regarding policy, strategies, and program design for the sound management of waste.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources;

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women

Does the project?s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

The project has a significant number of private sector partners (please, refer also to Section 2 ?Stakeholders?). The involvement of the private sector in the project will be through regulatory, enforcement and awareness raising activities supported by the project mainly aimed at the owners of remaining electrical equipments (mostly companies in the electricity sector); EPS/XPS producers/importers, construction companies and hotels in tursitic sites. Another private stakeholder group is made up by the service suppliers for the management, elimination and treatment of wastes containing POPs and mercury.

The private sector partners who are engaged in the project?s implementation can be grouped as follows:

Corporate Associations:

- Panamanian Chamber of Construction (CAPAC)
- Chamber of Tourism of Panama (CMTUR)

- Panamanian Association of Hotels (APATEL)
- Panamanian Chamber of Recyclers
- Panama's National Cleaner Production Center (CNP)

Private sector and sectors to intervene:

- Electric Power Companies
- EPS/XPS Companies
- Waste and Management Disposal Companies

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

A group of risks has been identified and need to be considered during the execution of the project. As per standard UNDP requirements, the National Project Coordinator will monitor risks quarterly and report on the status of risks to the UNDP Country Office (CO) in Peru. The UNDP CO will record progress in the UNDP ATLAS risk log (UNDP Risk Register). Risks will be reported as critical when the impact and probability are HIGH (i.e. when impact is rated as 5, and when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported to the GEF in the annual Project Implementation Report (PIR).

The key risks that could threaten the achievement of project results have been summarized in the Table below. For further details of this analysis, please refer to the UNDP Risk Register in Annex 6, and an assessment of the social and environmental risks identified in the SESP (Annex 5).

Table 9. Key risks identified.

Risk Class	Risk and Description	Risk Management Response
Social and Environmental	Risk 1: Current discrimination, violence and/or harassment against women in the electricity, construction, health care, and/or waste management sectors may be continued and hinder equal access to opportunities for women's participation as well as attention to gender specific needs for occupational health of women per sector.	<p>A gender analysis and gender action plan were developed during the PPG phase, and it should be enforced during project implementation in order to ensure that gender considerations are integrated into all project activities.</p> <p>An occupational health surveillance programme will be implemented as part of the plan to assess and record the levels of affectation and risks involved for men and women in the handling of POPs, chemical substances, and wastes.</p> <p>This risk will be further assessed in the Strategic Environmental and Social Assessments (SESAs) and Environmental and Social Impact Assessments (ESIAs) that will be undertaken during project implementation, as described in the ESMF.</p>

	<p>Risk 2: Improper handling during phase out interim storage, transport, and disposal of mercury containing equipment (from the health sector), PCB containing equipment (from the electricity sector), and HBCD containing stockpiles and waste (from the construction sector) may lead to accidental release causing adverse impacts on the environment, community health, and safety.</p>	<p>In line with the ESMF, a Strategic Environmental and Social Assessment (SESA) will be developed during project implementation as a management measure to address this risk for Output C1 (Activity 3) and Output D1 (Activity 4).</p> <p>In addition, Environmental and Social Impact Assessment (ESIA) will be conducted for the specific project sites associated to Outputs B1, C2, D2, E1, and E2.</p>
	<p>Risk 3: Incorrect handling, transport or disposal of POPs, mercury and hazardous waste may lead to accidental release in areas with presence of indigenous people.</p>	<p>This risk will be further assessed in the Strategic Environmental and Social Assessments (SESAs) and Environmental and Social Impact Assessments (ESIAs) that will be undertaken during project implementation, as described in the ESMF.</p>
	<p>Risk 4: Occupational health and safety impacts due to exposure to chemical hazards of workers and vulnerable groups involved within the scope of the project (health, construction, power, waste).</p>	<p>The project will assess these risks as part of the ESIA that will be undertaken for pilots (Output B1, Output E1 and E2) and disposal activities (Output C2, Output D2) and ensure that as part of the ESMP, an Occupational Health and Safety Plan; Labour Assessment and Management Plan; and/or any other plan required for SES compliance are in place prior to commencement of the works, as described in the ESMF.</p> <p>Protocols and standard operating procedures on the sound management of hazardous chemicals and wastes will be enforced by the implementing agency to minimize the risk of exposure and increase safety.</p> <p>Management measures include:</p> <ul style="list-style-type: none"> ? A national training programme to increase capacities for the comprehensive management of POPs and mercury ? implementation of BAT/BEP for sound handling, transporting, and final disposition of hazardous wastes. ? Monitoring, evaluation, and dissemination of project results. - Awareness-raising and training for continuous improvement opportunities both in training needs as well as in maintaining BAT/BEP.

	<p>Risk 5: Potential transboundary and global environmental risks due to accidental release of PCBs or mercury containing waste during handling, storage, and shipment to other countries for final treatment and disposal.</p>	<p>The Environmental and Social Impact Assessment (ESIA) associated to PCB and Mercury sound management activities (Output C.2 and E.2) will include the evaluation of technologies to be used for their treatment/elimination, in terms of potential chemical release. Options will be compared, and measures proposed to minimize this risk such that the alternative technologies must ensure compliance with Best Available Techniques/Best Environmental Practices (BAT/BEP) as per the Stockholm, Minamata, and Basel Conventions.</p>
	<p>Risk 6: Potential risk of physical and economic displacement of waste pickers present in dump sites (?pepenadores?) due to the implementation of BAT/BEP in municipal dumps and waste sector.</p>	<p>A scoped Environmental and Social Impact Assessment (ESIA) will be developed during the project implementation for each of the selected sites to analyze the potential risks and impacts associated to physical and economic displacement; and if it is confirmed that there will be displacement, a Livelihood Action Plan must be developed in accordance to UNDP SES LAP template and Standard 5. Necessary measures to address this risk will be part of the ESMP.</p> <p>The comprehensive Stakeholders Engagement plan that has been prepared during PPG phase, which includes waste pickers as sensitive actors, must be followed.</p> <p>The development of a solid waste management plan in participating municipalities will take the local informal waste pickers into consideration in order to regularize and improve their working conditions within the scope of the project activities.</p>
	<p>Risk 7: Accidental releases of hazardous waste and substances in project sites due to earthquakes, subsidence, landslides, erosion, flooding or extreme climate conditions. (Climate change risk)</p>	<p>As part of the scoped Environmental and Social Impact Assessment (ESIA) that will be conducted for the specific project sites/activities, this risk will be assessed and mitigation measures will be developed and included in the ESMP for each pilot, which will likely include a disaster risk management plan to be applied during implementation.</p>

	<p>Risk 8: Exposure to COVID-19 and water borne diseases (such as Dengue) to the project team, partners, and community due to project activities or improper waste management.</p>	<p>As a means to reduce exposure and transmission of COVID 19 or other water borne diseases, the national plans, protocols, and guidelines published by the Ministry of Health for prevention and transmission mitigation (such as of COVID-19^[1]) must be followed. Sanitary guidelines available and cleaning & disinfection protocols will be considered during the implementation of the project.</p>
	<p>Risk 9: Lack of knowledge and awareness on the sound management of hazardous waste among government institutions may lead to levels of engagement in project activities that are not in accordance to their competencies and responsibilities.</p>	<p>Competence and responsibilities are to be formalized through the signing of agreements between MINSA and local authorities to establish legal and institutional capacities. The following mitigation actions will be implemented:</p> <p>Development of a national training programme for sound management of POPs and Mercury (Project Output A.2, Activity 2) and awareness raising through a national communication campaign (Component 4, Output F.2, Activity 1).</p> <p>An Environmental and Social Management Framework (ESMF) and a Stakeholder Engagement Plan has been prepared during the project design phase, both of which should be applied during the implementation phase.</p>

	<p>Risk 10: Vulnerable groups like recyclers and waste pickers may be excluded from decision making processes in dump sites where they currently supply their source of income and may also not be aware of existing grievance mechanisms.</p>	<p>The scoped Environmental and Social Impact Assessment (ESIA) for the municipal landfills that are part of the project activities will address this risk.</p> <p>A national communication strategy will be developed (Component 4, Outcome F.2, Activity 1)</p> <p>The Stakeholder Engagement Plan shall be followed during the project implementation and the grievance mechanism within be readily informed to all vulnerable groups associated to the project activities.</p> <p>It must be ensured that both formal and informal waste pickers that operate within the municipal landfills selected for the project have open communication channels where there is relevant information available to them periodically from the initial phases of the project and throughout and that they have the opportunity to voice their concerns and receive a response.</p>
	<p>Risk 11: Potential GHG emissions from treatment of PCB or HBCD containing waste.</p>	<p>The scoped Environmental and Social Impact Assessment (ESIA) for project activities associated to PCB and HBCD (Output C.2 and D.2) will include the evaluation of technologies that will be used for PCB and HBCD treatment/elimination in terms of their GHG emissions and potential chemical release, options will be compared and measures will be proposed to minimize GHG emissions and chemicals produced such that the alternative technologies must ensure compliance with Best Available Techniques/Best Environmental Practices (BAT/BEP) as per the Stockholm and Basel Conventions.</p>
	<p>Risk 12: Child Labour in power, health, construction and waste sectors covered by the project in contravention of principles and standards of ILO fundamental conventions.</p>	<p>This risk will be further assessed in the Strategic Environmental and Social Assessments (SESAs) and Environmental and Social Impact Assessments (ESIAs) that will be undertaken during project implementation, as described in the ESMF.</p>

Financial	Risk 13: Private stakeholders, mainly from construction and power sector, are reluctant to play an active role during project execution.	<p>During the PPG stage, the main concerns and interests of the stakeholders interested in the project, mainly power companies and Panamanian chamber of construction were compiled, allowing the formulation of activities aiming at the elimination of the identified set of barriers and emphasizing on the benefits of being part of the project.</p> <p>In addition, an effective communication strategy will be developed and implemented during project's execution to raise awareness among the stakeholders and the community in general aware of the project's scope, activities and benefits.</p>
	Risk 14: Impacts due to fluctuations in credit rate, market and currency that may affect project total budget.	UNDP monitors expenditure on a daily basis. Further UNDP HQ provides global oversight of project delivery minimizing the risk of operational risk due to currency risks.
Operational	Risk 15: Difficulties in obtaining the information required to develop the inventory of HBCD in buildings and construction sector. As well as the information of PCBs in sensitive sites and private sector.	<p>The project has ensured during its PPG stage, through the stakeholder engagement plan, an adequate awareness creation on the importance of these Inventories.</p> <p>A communication strategy will be developed during the implementation of the FSP, emphasizing on the benefits of the project to participating partners and will include briefings.</p> <p>Furthermore, the signing of agreements with related stakeholders that will participate in the demonstration projects is foreseen, which will incorporate measures to protect confidential information.</p>
	Risk 16: Limited capacity of national stakeholders to introduce BAT/BEP for hazardous waste treatment and disposal.	During the implementation of the FSP, awareness-raising, training and technical training programs will be developed and implemented, as well as capacity building in national authorities, public officials and other interested parties who are working on issues related to the management of chemical products and waste, to ensure the knowledge and experience needed to carry out their tasks properly.

	<p>Risk 17: Deficiencies in communication and relationship with stakeholders.</p>	<p>During PPG phase main concerns and interests of the stakeholders interested in the project were compiled, allowing the formulation of actions that allow eliminating these barriers and emphasizing on the benefits of being part of the project. Within the Stakeholder Engagement Plan these activities are planned to continue during the project implementation.</p> <p>Furthermore, an effective communication strategy will be developed to raise awareness among the stakeholders and the community in general aware of the project's activities.</p>
Organizational	<p>Risk 18: Limited capacity of the Ministry of Health and other key stakeholders due to insufficient trained staff on the implementation of proposed alternatives, may cause an inadequate tracking and monitoring of the agreed activities and Objective and Outcome indicators.</p>	<p>A training plan aimed at institutions with competence on POPs and mercury management will be developed and implemented under Component 1. This training plan seeks to strengthen the management and enforcement capacities at national, regional, and municipal level to meet requirements under national regulations and international chemicals and waste Conventions.</p> <p>Component 4, Outcome F. comprises a series of actions aimed at periodic monitoring and follow-up on the development of the project, including a comprehensive evaluation under the MTR, where possible deviations from the programed actions can be identified at an early stage.</p> <p>Besides, UNDP CO staff and the UNDP Panama RTA will do their utmost to inform and convince policymakers on the relevance of this FSP to put it on track.</p>
	<p>Risk 19: Limited technical and human capacity in the Ministry of Health to implement a comprehensive Monitoring and Evaluation Plan result in inefficient monitoring.</p>	<p>UNDP CO staff and UNDP Panama RTA will assist closely the FSP PMU and the MINSA in order to provide training and guidance on the different activities required for the effective fulfillment of the comprehensive Monitoring and Evaluation Plan.</p>
	<p>Risk 20: Limited technical and human resources capacity for contracts administration and acquisitions that could delay the timely and effective implementation of project activities.</p>	<p>Develop and implement a training plan for the staff in order to cover professional technical gaps ensuring a proper support to the procurement processes and build capacity in the Administrative and financial management unit (USGAF). In addition, promote the development of guidelines and procedures to avoid conflicts of interest.</p>

Political	<p>Risk 21: Lack of political will and Federal government's commitment of key public authorities (such as AAUD, ACP, ATP, etc.) which do not actively participate in the development and implementation of project activities.</p>	<p>In the situation that this institutional context would happen, technical personnel from Ministry of Health, UNDP CO staff and the UNDP Panama RTA will do their utmost to inform and convince policymakers on the relevance of this FSP, the reasons why it was developed and the positive impact it will have on human health and environment, aligned to Minamata and Stockholm Conventions.</p> <p>Under Component 1, the project will promote the creation of an inter-agency commission to improve Chemical Substances and Waste Management within the territory, which will be led by the Ministry of Health as a body for coordination and collaboration among governmental authorities. Furthermore, the institutionalization of specific technical working groups will be promoted under the abovementioned Commission, to incentive collaboration and coordinated work and involvement of different governmental entities in specific chemicals and waste management topics.</p>
	<p>Risk 22: Lack of interest at national and local level to actively participate in the development and implementation of project activities.</p>	<p>The PMU and the Project Steering Committee will provide continuous feedback and monitor the project results on a regular basis. Furthermore, consultations will be held with decision makers from other government organizations to communicate the relevance of their participation in the project.</p>
	<p>Risk 23: Change of government might result in new management and technical appointees within entities that are project partner, requiring additional efforts to ensure timely project implementation.</p>	<p>In the situation that this would happen, technical personnel from UNDP CO staff and the UNDP Panama RTA will do their utmost to inform and convince new decision makers on the importance of the project, the reasons why it was developed and the positive impact it will have on human health and the environment in Panama.</p>

Strategic	Risk 24: Limited capacity in the Ministry of Health and other key stakeholders that can generate conflicts, misinformation and misunderstandings of the overall objective of the project.	<p>During the implementation of the FSP, technical training programs will be developed and implemented, as well as capacity building in national authorities, public officials and other interested parties who are working on issues related to the management of chemicals and hazardous waste, to ensure the knowledge and experience needed to carry out their tasks properly.</p> <p>Furthermore, an effective communication strategy will be developed during the implementation of the FSP to raise awareness among the stakeholders and the community in general aware of the project's scope and activities.</p>
	Risk 25: Private companies fear that participation in the project might affect their image or brand.	<p>The project will technically assist private companies related mainly to PCB and HBCD identification and proper disposal in order to guarantee proper engagement of these key stakeholders and ensure the understanding of project benefits.</p> <p>Furthermore, an effective communication strategy will be developed during the implementation of the FSP to raise awareness among the stakeholders and the community in general aware of the project's activities.</p>

[1] PLANES, PROTOCOLOS Y GUIAS - COVIN19 | Ministerio de Salud de la Rep?blica de Panam?
(minsa.gob.pa)

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Roles and responsibilities of the project's governance mechanism:

Implementing Partner: The Implementing Partner for this project is the Ministry of Health (MINSa).

The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

The Implementing Partner is responsible for executing this project. Specific tasks include:

- Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.

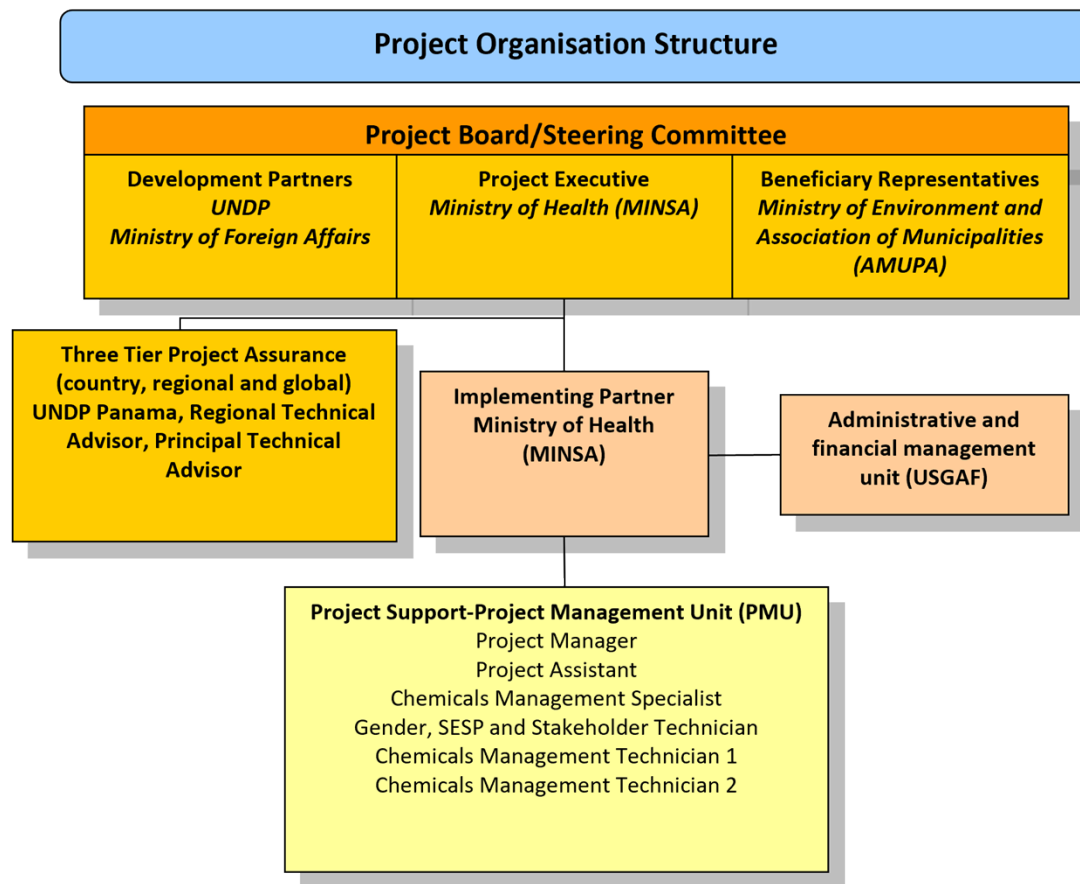
- ? Risk management as outlined in this Project Document;
- ? Procurement of goods and services, including human resources;
- ? Financial management, including overseeing financial expenditures against project budgets;
- ? Approving and signing the multiyear workplan;
- ? Approving and signing the combined delivery report at the end of the year; and,
- ? Signing the financial report or the funding authorization and certificate of expenditures.

Responsible Parties: Does not apply for this project.

Project stakeholders and target groups: All national stakeholders will be represented and actively participate in the implementation and supervision of the project activities and will be entitled to provide guidance to the project through their participation at the Advisory Committee. Key project stakeholders will be engaged in the project decision making processes through their participation as full members or observers in the Project Board (PB). Project consultants will be required to identify and involve the target groups and stakeholders relevant to their activity throughout their technical consultancy services.

UNDP: UNDP is accountable to the GEF for the implementation of this project. This includes oversight of project execution to ensure that the project is being carried out in accordance with agreed standards and provisions. UNDP is responsible for delivering GEF project cycle management services comprising project approval and start-up, project supervision and oversight, and project completion and evaluation. UNDP is also responsible for the Project Assurance role of the Project Board/Steering Committee.

Project organisation structure:



The Project Board (also called Project Steering Committee) is responsible for taking corrective action as needed to ensure the project achieves the desired results. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

In case consensus cannot be reached within the Board, the UNDP Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.

- Specific responsibilities of the Project Board include:

- ? Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- ? Address project issues as raised by the project manager;
- ? Provide guidance on new project risks, and agree on possible mitigation and management actions to address specific risks;
- ? Agree on project manager's tolerances as required, within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded;
- ? Advise on major and minor amendments to the project within the parameters set by UNDP-GEF;

- ? Ensure coordination between various donor and government-funded projects and programmes;
- ? Ensure coordination with various government agencies and their participation in project activities;
- ? Track and monitor co-financing for this project;
- ? Review the project progress, assess performance, and appraise the Annual Work Plan for the following year;
- ? Appraise the annual project implementation report, including the quality assessment rating report;
- ? Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- ? Review combined delivery reports prior to certification by the implementing partner;
- ? Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- ? Address project-level grievances;
- ? Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
- Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.
- Ensure highest levels of transparency and take all measures to avoid any real or perceived conflicts of interest.

The composition of the Project Board must include the following roles:

- a. Project Executive: Is an individual who represents ownership of the project and chairs the Project Board. The Executive is normally the national counterpart for nationally implemented projects. The Project Executive is: General Subdirector for Environmental Health.
- b. Beneficiary Representative(s): Individuals or groups representing the interests of those who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often civil society representative(s) can fulfil this role. The Beneficiary representative are: Ministry of Environment and Association of Municipalities (AMUPA)
- c. Development Partner(s): Individuals or groups representing the interests of the parties concerned that provide funding and/or technical expertise to the project. The Development Partner is the UNDP Resident Representative and the Ministry of Foreign Affairs (MIRE).
-
- d. Project Assurance: UNDP performs the quality assurance and supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed, and conflict of interest issues are monitored and addressed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. UNDP provides a three ? tier oversight services involving the UNDP Country Offices and UNDP at regional and headquarters levels. Project assurance is totally independent of project execution.

Project extensions: The UNDP Resident Representative and the UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and only if the following conditions are met: one extension only for a project for a maximum of six months; the project management

costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the UNDP Country Office oversight costs in excess of the CO's Agency fee specified in the DOA during the extension period must be covered by non-GEF resources.

Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Also related to institutional partnerships, there is a group of GEF-financed projects and other initiatives in Panama currently under implementation related to the development challenge that this project is also addressing, which could provide some additional support to strengthening this institutional partnership approach. Thanks to the involvement of the institutional partners in some of them, it seems of mutual benefit the achievement of the outcomes of this project. Specifically, this FSP will ensure coordination and count on the capacity built and knowledge gathered from the concurrent projects that are already in progress, as shown in the following table below:

Table 10. planned coordination with other relevant GEF-financed projects and other initiatives.

Project	Agency	Main relevance for this FSP
POPs - Stockholm Convention -		
Strengthening of National Initiatives and Enhancement of Regional Cooperation for the Environmentally Sound Management of POPs in Waste of Electronic or Electrical Equipment (WEEE) in Latin-American Countries.	GEF-UNIDO	The project reviews and strengthens national policies and regulations and produces guidelines on the management of specific waste that contains POPs. It also trains officials and builds capacities in Panama to improve the management of this kind of waste. Synergies with this project can allow for a strengthened incidence in national policy and capacities on management of specific waste containing POPs. This project can provide lessons learned regarding the management of POPs-containing products through their life cycle.
Diagnosis of POPs in marine litter and microplastics in the Central America subregion: strengthening of institutional capacities to support the generation of public policies and promote awareness-raising activities to reduce the risks to health and the environment	Basel Convention Regional Centre for the Central America and Mexico subregion in Panama (BCRC CAM Panama)/Stockholm Convention Regional Centre for Capacity-building and the Transfer of Technology, Panama (SCRC-Panama)	The objective of the project is to generate the baseline of quantification and characterization of POPs present in marine litter and microplastics from the Central American subregion for the development of actions to regulate and mitigate pollution and its impact on health and the environment, as well as raising awareness. This FSP can create synergies on POPs determination in different matrix, to improve POPs monitoring.

Mercury ?The Minamata Convention-		
Toxicovigilance system in the Ministry of Health	Pan American Health Organization (PAHO)	This project aims to build a system to monitor toxicovigilance in the country, including information of key pollutants, such as mercury. This FSP will build synergies to include POPs and mercury data in the system and to establish guidelines to systematize monitoring and vigilance of POPs and mercury.
Chemicals and Waste Management		
Comprehensive urban development program with tourist vocations	Inter-American Development Bank (IDB)	The project main objective is to contribute to the urban and socioeconomic development of towns with tourist vocation in Panama. One of the work areas of the project is the improvement of infrastructure and services in these towns, including waste management. Synergies with this project will allow to introduce BAT and BEP on POP and mercury waste management in towns where the IDB project will be strengthening capacities of local authorities and improving infrastructure and services for waste management.
Improvement of open waste dumps in Panama	Urban and Domiciliary Cleaning Authority of Panama (AAUD)	The Authority is currently working in the improvement of three open waste dumps in Boquete, Aguadulce and Penonomé districts. The project aims at improving basic infrastructure in these dumps to improve waste management, such as setting a fence, build a waste containing area and a leachate basin. The Authority plans to implement other 5 projects next year. The FSP will work with waste dumps that the Authority is improving, in order to introduce BAT and BEP to avoid open burning of waste.
Institutional strengthening for the control of transboundary movement and the improvement of environmentally sound management of plastic waste in the Central America subregion	Basel Convention Regional Centre for the Central America and Mexico subregion in Panama (BCRC CAM Panama)/Stockholm Convention Regional Centre for Capacity-building and the Transfer of Technology, Panama (SCRC-Panama)	The project will build capacities to strengthen the regulatory regime framework for the management of plastic waste. A national inventory with the identification of the sources of generation, type of plastic waste and the dangerous components present in plastics will be developed, accompanied by a national strategy for the sound management. The inventory prepared under the project can provide key information on plastic waste in areas of intervention of this FSP.

Reduce marine plastics and plastic pollution in Latin American and Caribbean cities through a circular economy approach	GEF-UNEP	The project will work with Colombia, Jamaica and Panama with the main target to reduce plastics. The project aims to work specifically with coastal cities (Panama City and Colon in Panama). It includes the promotion of policies and interventions with municipalities to reduce plastic, which goes in line with this FSP component to work with hotels and municipalities in coastal areas to promote plastic recycling. Knowledge and lessons learned can be exchanged.
The plastic route	Marea Verde (NGO)	The project works in building roads in Panama made of a recycled plastics and asphalt blend. Two pilots have been implemented. The proposed technology is one of the few current options for the recycling of plastics in Panama. The FSP will explore the inclusion of this kind of initiative when defining the options to recycle plastics from hotels.
Analytical Capacities		
Project on monitoring analytical capacities for water quality	Ministry of Environment of Panama	The project establishes a water quality monitoring network. This FSP can seek synergies with the water quality monitoring project as part of the objectives to set a monitoring programme for chemicals in Panama and provide specific targeted trainings to enhance POPs and mercury analytical capacities for water quality monitoring.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

This Project is aligned and consistency with the following National Priorities:

- National Implementation Plan (NIP) under Stockholm Convention on Persistent Organic Pollutants (POPs).
- Minamata Initial Assessment (MIA) under Minamata Convention.
- Basel Convention.
- Rotterdam Conventions.
- Strategic Approach to International Chemicals Management (SAICM).

This FSP by improving the sound management of hazardous chemicals in Panama will help the government to work towards the achievement of the Sustainable Development Goals (SDGs). The SDGs most relevant to this project are:

- SDG 3 ?Good Health and Well-being? by protecting local, regional and global populations from the health impact of hazardous chemicals.
- SDG 5 ?Gender Equality? by promoting gender perspective.
- SDG 6 ?Clean Water and Sanitation? by protecting water resources from contamination.
- SDG 9 ?Industry, Innovation and Infrastructure? by supporting industry in reducing its harmful releases.
- SDG 11 ?Sustainable Cities and Communities? by making cities and human settlements inclusive, safe, resilient, and sustainable.
- SDG 12 ?Responsible Consumption and Production? by phasing out products containing harmful substances.
- SDG 13 ?Climate Action? by reducing emissions in landfills.
- SDG 14 ?Life below water? by safeguarding marine life from exposure to hazardous chemicals and wastes.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

Knowledge management in the project will be carried out through the following elements:

- The POPs management information system (output A2) will provide access to up-to-date information, which in conjunction with the generation of technical capacity in the institutions will improve decision-making and facilitate coordination, as well as implementation of the National Implementation Plan (NIP 2018).
- Within Component 4, through its outputs F1 and F2, strategies and mechanisms will be developed for the dissemination of information and replication of the knowledge acquired during the execution of the project, including both the private sector, as well as NGOs, the academics sector and the population in general.
- Technical training plan in different activities with private sector will provide companies with information on economic activities with potential use of these substances identified in the NIP and the MIA. These trainings will enable the dissemination of information from a practical approach and according to the characteristics of each sector, improve decision-making in companies, protect workers from risks on POPs and mercury and support for the generation of replication projects.
- Likewise, the enabling of information within the MINSA website will allow the general population to have publicly available and up-to-date information on the management of POPs and mercury in Panama, as well as boosting citizen participation in relation to these issues.
- Lessons learned, gender challenges and good practices of the project will be documented and disseminated, together with the materials and guides developed to orientate the population in the management of POPs and mercury.

In addition to that, it should be noted that UNDP annually organizes meetings for Government Officers and Project Coordinators of all the UNDP-GEF funded Chemicals and Waste Projects in Latin America and the Caribbean. In these meetings, lessons learned, and best practices are shared among the countries which has created a coordination mechanism among all the projects in the region.

Finally, UNDP will ensure that relevant information and lessons learned will be collected as input for the Mid-term Review and Terminal Evaluation.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

The budgeted M&E plan has been summarized in the table below:

Table 11. budgeted M&E plan.

GEF M&E requirements	Indicative costs (US\$)	Time frame
Inception Workshop	US\$ 10,500 (3,500*3) (central and regional)	Within 60 days of CEO endorsement of this project.
Inception Report	None	Within 90 days of CEO endorsement of this project.
M&E of GEF core indicators and project results framework	None	Annually and at mid-point and closure.
GEF Project Implementation Report (PIR)	US\$ 2,500 (500 per year)	Annually typically between June-August
Monitoring of Environmental Social and Management Framework and Plan	US\$ 48,000	On-going.
Supervision missions/Field Visits	US\$ 10,000 (2,000 per year)	At least one per year, project coordinator and team
Independent Mid-term Review (MTR)	US\$ 30,000	June 2023

GEF M&E requirements	Indicative costs (US\$)	Time frame
Independent Terminal Evaluation (TE)	US\$ 35,000	Mach 2027
Quality Assurance (design, implementation, closure)	None	Project lifecycle
TOTAL indicative COST	\$ 136,000	

For additional details kindly refer to Chapter VI "Monitoring and Evaluation (M&E) Plan" of the UNDP Project Document.

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The Global environmental benefits (GEB) of the project at the CEO endorsement stage are the same as presented at the PIF stage. The project's GEBs include the following:

- 200 ton of equipment and materials containing PCB.
- 330 ton materials/residues containing HBCD (2.5 ton of HBCD).
- 350 kg of mercury.
- 6 gTEQ of unintentional POPs.
- 27,063.76 tCO₂ eq.

The project will bring direct and indirect socioeconomic benefits. The direct and immediate benefits are those related to the implementation of the project itself, including employment of project staff, operators, and others; The project will strength capabilities of the national and local authorities, health sector, municipalities, waste management companies, construction and power sectors companies, creating opportunities for the adoption of new practices and technologies with added value.

At the national and local levels, the implementation of the pilot projects will generate opportunities to improve the quality of life of workers in the health, waste management and construction sectors due to improvement in their working conditions due to the reduction of hazardous substances in their working environment; Also, they will demonstrate that the positive results of these pilot interventions would serve to improve and enforce current regulation for environmentally sound management of POPs and mercury. It is also expected that other LAC parties of the Stockholm and Minanata Conventions will follow and integrate these strategies in their efforts to phase out hazardous substances so the project benefits will extrapolate to other countries in the region. For this, a public awareness and communication strategy of the project results should result in direct gains for the citizens and the environment.

The project will also bring obvious indirect benefits. The removal of PCB sources (equipment, waste, and contaminated oil) from the environment, reduction of POPs emissions and sound management of mercury containing waste will prevent the contamination of the environment by these substances. This will translate into economic benefits in terms of reduced cases of illness and death due to POPs and mercury

exposure, reduced work hours lost represented by a reduction in cases of illness and death due to exposure to POPs and mercury, savings in health care costs due to adverse effects of POPs and mercury, savings in costs associated with avoided deaths, prevention or minimisation of POPs and mercury contamination in soil, air, water, air and biota, cost savings from management of POPs and mercury contamination of soil, water and biota.

In addition, the socioeconomic benefits to be delivered by the project at the national and local levels include:

- Support COVID-19 response and mitigation of future pandemics through the promotion of activities that minimize health risks while reducing pollution.
- Improved policy, regulatory, monitoring and analysis frameworks, to safeguard human health and the environment.
- Assist on improving healthcare waste management and disposal.
- Contribute to an increased national capacity for hazardous waste treatment and disposal aligned to international guidelines.
- A general increase in awareness about the environmental impacts of POPs, mercury and toxic chemicals.

Reduced health impact from the exposure to hazardous chemicals, in particular PCBs, HBCD, Unintentional Persistent Organic Pollutants (UPOPs) and mercury.

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification *

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate	High or Substantial		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

<p>QUESTION 2: What are the Potential Social and Environmental Risks?</p> <p><i>Note: Complete SESP Attachment 1 before responding to Question 2.</i></p>	<p>QUESTION 3: What is the level of significance of the potential social and environmental risks?</p> <p><i>Note: Respond to Questions 4 and 5 below before proceeding to Question 5</i></p>			<p>QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High</p>
<p><i>Risk Description</i> <i>(broken down by event, cause, impact)</i></p>	<p><i>Impact and Likelihood</i> <i>(1-5)</i></p>	<p><i>Significance</i> <i>(Low, Moderate Substantial, High)</i></p>	<p><i>Comments</i> <i>(optional)</i></p>	<p><i>Description of assessment and management measures for risks rated as Moderate, Substantial or High</i></p>

<p>Risk 1: Current discrimination, violence and/or harassment against women in the electricity, construction, health care, and/or waste management sectors may be continued and hinder equal access to opportunities for women's participation as well as attention to gender specific needs for occupational health of women per sector.</p> <p>Related to:</p> <p>Gender Equality and Women's Empowerment.</p> <p>P.10 reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?</p> <p>P.12 exacerbation of risks of gender-based violence?</p> <p>Standard 7: Labour and Working Conditions.</p> <p>7.5. Discriminatory working conditions and/or lack of equal opportunity?</p> <p>7.6. Occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including</p>	<p>I=3</p> <p>L=3</p>	<p>Moderate</p>	<p>There is more presence of men than women in the electricity, construction, and waste management sectors, while there is a greater presence of women in the health care sector.</p> <p>The percentage of women and men participation in each sector allows for predictability of discrimination patterns and likelihood per sector.</p> <p>However, they are sector specific and can be mitigated through measures included in the gender action plan designed for the project.</p>	<p>A gender analysis and gender action plan were developed during the PPG phase, and it should be enforced during project implementation in order to ensure that gender considerations are integrated into all project activities.</p> <p>An occupational health surveillance programme will be implemented as part of the plan to assess and record the levels of affectation and risks involved for men and women in the handling of POPs, chemical substances, and wastes.</p> <p>This risk will be further assessed in the Strategic Environmental and Social Assessments (SESAs) and Environmental and Social Impact Assessments (ESIAs) that will be undertaken during project implementation, as described in the ESMF.</p>
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<p>Risk 2. Improper handling during phase out interim storage, transport, and disposal of mercury containing equipment (from the health sector), PCB containing equipment (from the electricity sector), and HBCD containing stockpiles and waste (from the construction sector) may lead to accidental release causing adverse impacts on the environment, community health, and safety.</p> <p>Related to:</p> <p>Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management.</p> <p>1.1 adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?</p> <p>1.2 activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?</p>	<p>I=4</p> <p>L=3</p>	<p>Substantial</p>	<p>Impacts of Hg, PCB and HBCD releases would be extensive due to the hazardous properties of these substances and, although it is not foreseen, a risk exist that a project site will be within or adjacent to a cultural heritage importance, leading to damage to the site.</p> <p>The likelihood of this risk is moderately likely considering that the project</p> <p>will work with participants and companies that follow international protocols to manage residues and are specialists in their sector.</p> <p>The project will provide technical assistance for the handling of these substances which will minimize the chances of accidental release.</p>	<p>In line with the ESMF, a Strategic Environmental and Social Assessment (SESA) will be developed during project implementation as a management measure to address this risk for Output C1 (Activity 3) and Output D1 (Activity 4).</p> <p>In addition, Environmental and Social Impact Assessment (ESIA) will be conducted for the specific project sites associated to Outputs B1, C2, D2, E1, and E2.</p>
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<p>Risk 3. Incorrect handling, transport or disposal of POPs, mercury and hazardous waste may lead to accidental release in areas with presence of indigenous people.</p> <p>Related to:</p> <p>Standard 6: Indigenous Peoples.</p> <p>6.1 areas where indigenous peoples are present (including project area of influence)?</p> <p>6. 3 impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?</p>	<p>I=4</p> <p>L=2</p>	<p>Moderate</p>	<p>Impact would be extensive due to the hazardous characteristics of these substances. The likelihood of this risk is low likelihood as project activities regarding POPs, Hg and hazardous waste management will not be held in indigenous territories nor under their jurisdiction.</p> <p>There is very low prevalence of PCB containing equipment in these rural areas (if any), and the companies that operate in the country follow strict international protocols for PCB disposal management. Additionally, already selected landfills and healthcare establishments are not located in indigenous territories and for those landfills pending of selection, those with high population density (urban centers) will be prioritized.</p>	<p>This risk will be further assessed in the Strategic Environmental and Social Assessments (SESAs) and Environmental and Social Impact Assessments (ESIAs) that will be undertaken during project implementation, as described in the ESMF.</p>
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<p>Risk 4. Occupational health and safety impacts due to exposure to chemical hazards of workers and vulnerable groups involved within the scope of the project (health, construction, power, waste).</p> <p>Related to:</p> <p>Standard 7: Labour and Working Conditions</p> <p>7.1 working conditions that do not meet national labour laws and international commitments?</p> <p>7.6 occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?</p>	<p>I=4</p> <p>L=3</p>	<p>Substantial</p>	<p>Workers could be exposed to chemicals and risks from accidents during the implementation of the pilot projects which may cause an extensive impact to their health, but this exposure would be site specific and can be mitigated by implementing appropriate safety measures which make it moderately likely.</p>	<p>The project will assess these risks as part of the ESIA that will be undertaken for pilots (Output B1, Output E1 and E2) and disposal activities (Output C2, Output D2) and ensure that as part of the ESMP, an Occupational Health and Safety Plan; Labour Assessment and Management Plan; and/or any other plan required for SES compliance are in place prior to commencement of the works, as described in the ESMF.</p> <p>Protocols and standard operating procedures on the sound management of hazardous chemicals and wastes will be enforced by the implementing agency to minimize the risk of exposure and increase safety.</p> <p>Management measures include:</p> <p>A national training programme to increase capacities for the comprehensive management of POPs and mercury</p> <p>implementation of BAT/BEP for sound handling, transporting, and final disposition of hazardous wastes.</p> <p>Monitoring, evaluation, and dissemination of project results.</p> <p>Awareness-raising and training for continuous improvement opportunities both in training needs as well as in maintaining BAT/BEP.</p>
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<p>Risk 5: Potential transboundary and global environmental risks due to accidental release of PCBs or mercury containing waste during handling, storage, and shipment to other countries for final treatment and disposal.</p> <p>Related to:</p> <p>Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management.</p> <p>1.14 adverse transboundary or global environmental concerns?</p> <p>Standard 8: Pollution Prevention and Resource Efficiency.</p> <p>8.1 the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?</p> <p>8.2 the generation of waste (both hazardous and non-hazardous)?</p> <p>8.3 the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?</p> <p>8.4 the use of chemicals or</p>	<p>I=4</p> <p>L=2</p>	<p>Moderate</p>	<p>Accidental release of PCB or Mercury into the environment may have a significant adverse impact due to their hazardous properties, but likelihood is low, as the companies carrying it out (collection, transport, storage and final disposal) will operate in accordance to international best practices and the Basel Convention guidelines (detailed in Project Component 2, Output C.2 and Output E.2)</p>	<p>The Environmental and Social Impact Assessment (ESIA) associated to PCB and Mercury sound management activities (Output C.2 and E.2) will include the evaluation of technologies to be used for their treatment/elimination, in terms of</p> <p>potential chemical release. Options will be compared, and measures proposed to minimize this risk such that the alternative technologies must ensure compliance with Best Available Techniques/Best Environmental Practices (BAT/BEP) as per the Stockholm, Minamata, and Basel Conventions.</p>
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<p>Risk 6: Potential risk of physical and economic displacement of waste pickers present in dump sites (?pepenadores?) due to the implementation of BAT/BEP in municipal dumps and waste sector.</p> <p>Related to:</p> <p>Standard 5: Displacement and Resettlement.</p> <p>5.1 temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?</p> <p>5.2 economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions ? even in the absence of physical relocation)?</p>	<p>I=4</p> <p>L=3</p>	<p>Substantial</p>	<p>The introduction of new waste management policies, procedures, and technologies may affect recyclers present in selected municipal dumpsites. Displacement impacts would be extensive. However, this risk likelihood is considered to be moderately likely considering that this group has been taken into account from the initial stages of consultation and project design, as well as in the Stakeholder Engagement Plan. Furthermore, this group will participate in project activities.</p>	<p>A scoped Environmental and Social Impact Assessment (ESIA) will be developed during the project implementation for each of the selected sites to analyze the potential risks and impacts associated to physical and economic displacement; and if it is confirmed that there will be displacement, a Livelihood Action Plan must be developed in accordance to UNDP SES LAP template and Standard 5. Necessary measures to address this risk will be part of the ESMP.</p> <p>The comprehensive Stakeholders Engagement plan that has been prepared during PPG phase, which includes waste pickers as sensitive actors, must be followed.</p> <p>The development of a solid waste management plan in participating municipalities will take the local informal waste pickers into consideration in order to regularize and improve their working conditions within the scope of the project activities.</p>
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<p>Risk 7: Accidental releases of hazardous waste and substances in project sites due to earthquakes, subsidence, landslides, erosion, flooding or extreme climate conditions.</p> <p>Related to:</p> <p>Standard 2: Climate Change and Disaster Risks.</p> <p>2.1 areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunami or volcanic eruptions?</p> <p>2.2 outputs and outcomes sensitive or vulnerable to potential impacts of climate change or disasters?</p> <p>For example, through increased precipitation, drought, temperature, salinity, extreme events, earthquakes</p>	<p>I=3</p> <p>L=3</p>	<p>Moderate</p>	<p>Panama is not characterized by high level seismic activity. Natural disasters or extreme weather conditions are related to heavy rainstorms</p> <p>which can cause temporally flooding on selected project sites.</p> <p>Additionally, in Panama there is a well-defined rain pattern that goes from April to December with peaks in May and October, which allows a greater forecast of potential extreme conditions for the application of risk mitigation measures to minimize the impact.</p>	<p>As part of the scoped Environmental and Social Impact Assessment (ESIA) that will be conducted for the specific project sites/activities, this risk will be assessed and mitigation measures will be developed and included in the ESMP for each pilot, which will likely include a disaster risk management plan to be applied during implementation.</p>
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<p>Risk 8: Exposure to COVID-19 and water borne diseases (such as Dengue) to the project team, partners, and community due to project activities or improper waste management.</p> <p>Related to:</p> <p>Standard 3: Community Health, Safety and Security.</p> <p>3.4 risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?</p>	<p>I=3</p> <p>L=3</p>	<p>Moderate</p>	<p>Project activities include work in hospitals and health centres, where there could be higher exposure to COVID-19. The project team will be traveling around the country, which could increase exposure or transmission. However, mass vaccination campaigns are promoted by the government, and free shots are readily available. During PPG phase, likelihood is moderate, but it is expected that an important percentage of the population will have 1st and 2nd doses of the vaccines by the time of the project implementation. A reassessment will be made during project implementation, and it would be expected for likelihood to reduce.</p>	<p>As a means to reduce exposure and transmission of COVID 19 or other water borne diseases, the national plans, protocols, and guidelines published by the Ministry of Health for prevention and transmission mitigation (such as of COVID-19[1]) must be followed. Sanitary guidelines available and cleaning & disinfection protocols will be considered during the implementation of the project.</p>
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<p>Risk 9: Lack of knowledge and awareness on the sound management of hazardous waste among government institutions may lead to levels of engagement in project activities that are not in accordance to their competencies and responsibilities.</p> <p>Related to:</p> <p>Human Rights Principle.</p> <p>P.2 Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?</p>	<p>I=4</p> <p>L=2</p>	<p>Moderate</p>	<p>It is considered extensive because its impact could be nationwide and reversible but considering that relevant elements are addressed in project component 1 as well as in the stakeholder engagement plan, likelihood of occurrence within the project activities is low.</p>	<p>Competence and responsibilities are to be formalized through the signing of agreements between MINSA and local authorities to establish legal and institutional capacities. The following mitigation actions will be implemented:</p> <p>Development of a national training programme for sound management of POPs and Mercury (Project Output A.2, Activity 2) and awareness raising through a national communication campaign (Component 4, Output F.2, Activity 1).</p> <p>An Environmental and Social Management Framework (ESMF) and a Stakeholder Engagement Plan has been prepared during the project design phase, both of which should be applied during the implementation phase.</p>
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<p>Risk 10: Vulnerable groups like recyclers and waste pickers may be excluded from decision making processes in dump sites where they currently supply their source of income and may also not be aware of existing grievance mechanisms.</p> <p>Related to:</p> <p>Human Rights & Accountability</p> <p>P.3 Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?</p> <p>P.13 exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them?</p> <p>P.14 grievances or objections from potentially affected stakeholders?</p>	<p>I=4</p> <p>L=2</p>	<p>Moderate</p>	<p>The impact of ignoring vulnerable groups that may be affected by project activities would be extensive as their human rights may be affected.</p> <p>However, the likelihood of them being ignored is low, considering that this sector has been included from the beginning of the consultation and design process and they have been included in the Stakeholder Engagement Plan to be followed during implementation. Furthermore they are considered a relevant stakeholder of the project and direct beneficiaries.</p>	<p>The scoped Environmental and Social Impact Assessment (ESIA) for the municipal landfills that are part of the project activities will address this risk.</p> <p>A national communication strategy will be developed (Component 4, Outcome F.2, Activity 1)</p> <p>The Stakeholder Engagement Plan shall be followed during the project implementation and the grievance mechanism within be readily informed to all vulnerable groups associated to the project activities.</p> <p>It must be ensured that both formal and informal waste pickers that operate within the municipal landfills selected for the project have open communication channels where there is relevant information available to them periodically from the initial phases of the project and throughout and that they have the opportunity to voice their concerns and receive a response.</p>
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<p>Risk 11: Potential GHG emissions from treatment of PCB or HBCD containing waste.</p> <p>Related to:</p> <p>Standard 2: Climate Change and Disaster Risks</p> <p>2.4 increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?</p>	<p>I=3</p> <p>L=3</p>	<p>Moderate</p>	<p>It is estimated that 200 tons of PCBs contaminated oils and materials will need to be disposed of as part of the project activities. The disposal method will be decided after conducting a feasibility study with the option of export. Incineration is one of the key methods used for destruction of PCB and may lead to GHG and other air emissions.</p> <p>In addition, it is estimated that 30 ton of EPS waste with HBCD will need to be disposed as part of the project activities. The disposal method will be decided after assessing implementation at national level of worldwide best available technologies.</p>	<p>The scoped Environmental and Social Impact Assessment (ESIA) for project activities associated to PCB and HBCD (Output C.2 and D.2) will include the evaluation of technologies that will be used for PCB and HBCD treatment/elimination in terms of their GHG emissions and potential chemical release, options will be compared and measures will be proposed to minimize GHG emissions and chemicals produced such that the alternative technologies must ensure compliance with Best Available Techniques/Best Environmental Practices (BAT/BEP) as per the Stockholm and Basel Conventions.</p>
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<p>Risk 12: Child Labour in power, health, construction and waste sectors covered by the project in contravention of principles and standards of ILO fundamental conventions.</p> <p>Standard 7: Labour and Working Conditions</p> <p>7.3 use of child labour?</p>	<p>I=4</p> <p>L=2</p>	<p>Moderate</p>	<p>Child labour is prohibited in Panama, and it is not bound to be found in the electrical or health sector. Child engagement in HBCD waste management is not expected, either. They may engage in recycling activities in dumps, but there has been no child labour evidenced in the project sites selected. While the impact is considered to be extensive since human rights would be affected, the likelihood is considered to be low since the project will work with legally constituted companies that meet Panamanian labor standards, and landfills jurisdiction and control of the local authorities of Panamanian government.</p>	<p>This risk will be further assessed in the Strategic Environmental and Social Assessments (SESAs) and Environmental and Social Impact Assessments (ESIAs) that will be undertaken during project implementation, as described in the ESMF.</p>
	QUESTION 4: What is the overall project risk categorization?			
		Low Risk	?	
		Moderate Risk	?	

	<i>Substantial Risk</i>	XX			
	<i>High Risk</i>	?			
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)				
	Question only required for Moderate, Substantial and High Risk projects				
	<i><u>Is assessment required?</u></i> <i><u>(check if ?yes?)</u></i>	X		<i>Status?</i> <i>(completed, planned)</i>	
	<i>if yes, indicate overall type and status</i>		x	Targeted assessment(s)	Completed during PPG stakeholder analysis and gender analysis
			x	ESIA (Environmental and Social Impact Assessment)	Planned (during implementation)
			x	SESA (Strategic Environmental and Social Assessment)	Planned (during implementation)
	<i>Are management plans required? (check if ?yes)</i>	X			
	<i>If yes, indicate overall type</i>		x	Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste Management Plan, others)	Completed during PPG (Stakeholder Engagement Plan, Gender Action Plan)
			x	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	Planned (during implementation)

		x	ESMF (Environmental and Social Management Framework)	Completed during PPG
<i>Based on identified risks, which Principles/Project- level Standards triggered?</i>		Comments (not required)		
<i>Overarching Principle: Leave No One Behind</i>				
<i>Human Rights</i>	X			
<i>Gender Equality and Women's Empowerment</i>	X			
<i>Accountability</i>	X			
<i>1. Biodiversity Conservation and Sustainable Natural Resource Management</i>	X			
<i>2. Climate Change and Disaster Risks</i>	X			
<i>3. Community Health, Safety and Security</i>	X			
<i>4. Cultural Heritage</i>	X			
<i>5. Displacement and Resettlement</i>	X			
<i>6. Indigenous Peoples</i>	X			
<i>7. Labour and Working Conditions</i>	X			
<i>8. Pollution Prevention and Resource Efficiency</i>	X			

[1] PLANES, PROTOCOLOS Y GUIAS - COVIN19 | Ministerio de Salud de la Rep?blica de Panam?
(minsa.gob.pa)

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
PIMS 6527 - GEF ID 10721 - Panama - Annex 9 -ESMF	CEO Endorsement ESS	
PIMS 6527 - GEF ID 10721 - Panama - Annex 5 - SESP	CEO Endorsement ESS	
PIMS 6527 - Panama - PIF - ESM hazardous wastes containing POPs Hg - pre-SESP 20200924	Project PIF ESS	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

The Project Results Framework can be found in Chapter V *Project Results Framework* in the UNDP Project Document.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Part I: Project Information		Response	Response at the PPG Stage	Refere nce in ProDo c
GEF ID	10721			
Project Title	Environm entally sound managem ent of hazardous wastes containing POPs and Mercury			
Date of Screening	14 November 2020			
STAP member Screener	Jamidu Katima			
STAP secretariat screener	Sunday Leonard			
STAP Overall Assessment	<i>Minor issues to be considere d during project design</i>			

		<p>The project aims to manage waste containing POPs and mercury in Panama using environmentally sound options. It will strengthen policy and regulatory frameworks and implement pilot projects.</p> <p>STAP recommends the following:</p>		
		<p>Given that the project intends to prevent, reduce, and eliminate POPs and mercury, the proposal needs to be clearer on activities to avoid the upstream generation of targeted wastes. While it is useful to manage generated waste, effective interventions must be in place to prevent waste generation in the first place for sustainability.</p>	<p>Indeed, the activities designed in the proposal incorporate interventions both for the prevention/avoidance of waste generation upstream and in the treatment and disposal of generated waste.</p>	<p>Please refer to Section IV "Results and Partnerships" of the PRODOC, subsection "Expected Results"</p>
		<p>The project intends to implement the environmentally sound management of POPs and mercury-containing wastes. We encourage the project proponents to consult the Basel Convention Environmentally sound management (ESM) toolkit (http://www.basel.int/Implementation/CountryLedInitiative/EnvironmentallySoundManagement/ESMToolkit/Overview/tabid/5839/Default.aspx), which provides guidance on environmentally sound management of hazardous and other wastes.</p>	<p>These guidelines were considered during the design of the proposal and will also be considered during project implementation. The detail of the activities in related outputs include the reference to these international guidelines.</p>	<p>Please refer to Section IV "Results and Partnerships" of the PRODOC, subsection "Expected Results"</p>

		<p>A problem tree analysis and theory of change (ToC) diagram were presented in an annex. The ToC, however, lacks some relevant components. The current ToC is a diagrammatic representation of the project objective, components, and outputs. The underlying assumptions, pathways, alternative plans, and medium- and long-term impacts needed for a complete ToC were missing. We refer the project proponents to STAP's theory of change (https://stapgef.org/theory-change-primer) for more information on developing ToCs.</p>	<p>During PPG phase a deeper analysis was able to be carried out for the ToC elaboration. For this purpose, key stakeholders of the project were involved through virtual Technical Roundtables and Bilateral Meetings enabling understanding the development challenge and the barriers to address in the country for wastes containing POPs and mercury.</p>	<p>Please refer to:</p> <ul style="list-style-type: none"> - Section II "Development Challenge" and Section III "Strategy" of the PROD OC. - Annex 8 "Stakeholders Engagement Plan", sub section: Summary of previous stakeholders engagement activities.
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		<p>It is commendable that the project recognized the achievable climate co-benefits. The core indicator section indicates that 6765.94 metric tons of CO2e will be mitigated. However, the section on Global Environmental Benefits (page 41 of the PIF) states that 27,063.76 metric tons of CO2e would be achieved. We understand that the 6765.94 metric tons of CO2e emission reduction is expected per year; hence 27,063.76 metric tons of CO2e of emission reduction is expected in the project's 5-year period (that is, recognizing that emissions reduction will only start in the second year of the project). The value of core indicator 6 should be corrected accordingly to 27,063.76 metric tons of CO2e.</p>	<p>The value of core indicator has been updated properly to 27,063.76 metric tons of CO2 of emission reduction in PRODOC and related Annexes.</p>	<p>Pleaser refer to: - Section V "Project Results Framework" of the PRODOC.</p>
		<p>As noted on page 26, the proposed intervention may benefit local and international waters. We encourage that all of these benefits should be captured to highlight the return on investment from this project.</p>	<p>The proposal captured the benefits that project implementation will encompass.</p>	<p>Please refert to Section III "Strategy", sub section "Project Coherence with National Strategies, Priorities and Development Objectives"</p>

		<p>The IEO Terminal Evaluation of Chemicals and Waste projects¹ revealed that there is limited evidence that GEF's chemical and waste projects successfully put in place sustainable strategies and financial mechanisms for scaling up. The proposal did not provide needed information on how the project's sustainability will be ensured, including the financial mechanisms. With the lack of details, this project could fall into the same trap identified by the IEO. STAP recommends that more thought should be given to the sustainability and durability of the project. We encourage the project proponents to review STAP's paper on achieving enduring outcomes from GEF investments (https://stapgef.org/achieving-enduring-outcomes-gef-investment) and innovation and the GEF (https://stapgef.org/innovation-and-gef).</p>	<p>The proposal considers in the design of the activities two key aspects in order to promote and ensure scaling up and replication for project outputs sustainability and durability: * Lessons learned from each demonstration and pilot activities in municipalities</p>	<p>Please refer to Section IV "Results and Partnerships" of the PRODOC, subsection "Expected Results" and subsection "Innovation, Sustainability, and Potential for</p>
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		<p>Scaling up and replication are critical to the sustainability and durability of project outputs. According to the PIF, demonstration and pilot activities would be implemented. How would the project ensure that these pilots will be replicated elsewhere in the country? The proposal states that "the design of the project is such that the results of these projects can be replicated in other landfills and hospitals or health centers in the rest of the country to multiply the experiences gained and implement success stories." But there is no information on how this will be achieved. We recommend that a more detailed analysis of scaling-up and replication should be provided. Useful resources in this regard may include:</p> <ul style="list-style-type: none"> o WHO,2010. https://www.who.int/immunization/hpv/deliver/nine_steps_for_developing_a_scalingup_strategy_who_2010.pdf o GIZ(2011).https://www.shareweb.ch/site/Learning-and-Networking/sdc_km_tools/Documents/GIZ-Scaling-up-in-development-cooperation.pdf o STAP2020.https://stapgef.org/multi-stakeholder-dialogue o STAP2019.https://stapgef.org/achieving-enduring-outcomes-gef-investment 	<p>es will be captured and documented enabling a proper strategy for dissemination at national level. Lessons learned from demonstration projects will mainly provide inputs for technical and financial feasibility.</p> <p>* The creation of an Inter Agency on Chemicals Management where Technicals Working Groups involving Key Institutional Partners are established. This aims to promote coordination among competent authorities in POPs and mercury LCM enabling setting the institutional and legal basis for outputs sustainability</p>	Scaling Up"
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		<p>The proposal also presents a preliminary analysis of the potential risks to the project's success; however, the risks are not rated in terms of their potential impacts. STAP recommends that this should be done.</p>	<p>A comprehensive and thorough risk analysis was carried out at the PPG stage, considering all the risk categories following the ?UNDP Enterprise Risk Management (ERM) Policy?.</p>	<p>Please refer to: Section IV "Results and Partnership", sub-section ?Risks?, of the ProDoc . Annex 4: Monitoring Plan Annex 5: SESP Annex 6: UNDP Risk Atlas Register</p>
		<p>Climate risk: an environmental and social safeguards screening template was included as an annex. Although the safeguard template's response indicates that the project's potential outcomes will be sensitive or vulnerable to climate change, a climate risk assessment was not prepared. This project will involve several landfill sites, interventions in locations around coastal areas, and address chemicals (mercury and POPs) the release and emissions of which can be influenced by the changing climatic conditions such as temperature, rainfall, and extreme weather. Furthermore, Panama is considered a highly vulnerable country to climate change impacts. Panama experiences a number of extreme weather events, including intense and protracted rainfalls, windstorms, floods, droughts, wildfires, earthquakes, landslides, tropical cyclones, tsunamis, and ENSO/El Ni?o-La Ni?a events (https://climateknowledgeportal.worldbank.org/country/panama). Climate risk screening is, therefore, essential for this project. It is recommended that the project proponents carry out a detailed climate risk assessment following STAP's guidance on climate risk screening, available at: o https://stapgef.org/sites/default/files/documents/GEF%20AGENCY%20RETREAT%20Mar-Apr%202020.pdf o https://stapgef.org/stap-guidance-climate-risk-screening</p>		
Part I: Project Information	What STAP looks for	Response	Response at the PPG Stage	Reference in documents
B. Indicative Project Description Summary				

Project Objective	Is the objective clearly defined, and consistently related to the problem diagnosis?	Yes		
Project components	A brief description of the planned activities. Do these support the project's objectives?	Yes		
Outcomes	A description of the expected short-term and medium-term effects of an intervention. Do the planned outcomes encompass important global environmental benefits/adaptation benefits?	<p>Yes ? The project will deliver:</p> <ul style="list-style-type: none"> ? 200 t equipment and materials containing PCB ? ? 330 t materials/residues containing HBCD, corresponding to 2.5 t HBCD. ? 350 kg of mercury ? 6 g TEQ unintentional POPs ? ? 27,063.76 t CO eq. 		

	Are the global environmental benefits/a daptation benefits likely to be generated ?	Yes		
Outputs	<p>A description of the products and services which are expected to result from the project.</p> <p>Is the sum of the outputs likely to contribute to the outcomes?</p>	Yes		

Part II: Project justification	A simple narrative explaining the project's logic, i.e. a theory of change.	Yes. Theory of change need to be improved. See STAP overall assessment.	During PPG phase a deeper analysis was able to carried out for the ToC elaboration. For this purpose, key stakeholders of the project were involved through virtual Technical Roundtables and Bilateral Meetings enabling understanding the development challenge and the barriers to address in the country for wastes containing POPs and mercury.	Please refer to: - Section II "Development Challenge" and Section III "Strategy" of the PROD OC. - Annex 8 "Stakeholders Engagement Plan", sub section: Summary of previous stakeholders engagement activities.
1. Project description. Briefly describe:				
1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)	Is the problem statement well-defined?	Yes		

	Are the barriers and threats well described, and substantiated by data and references ?	Yes, and data is provided		
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	For multiple focal area projects: does the problem statement and analysis identify the drivers of environmental degradation which need to be addressed through multiple focal areas; and is the objective well-defined, and can it only be supported by integrating two, or more focal areas objectives or programs?	Although the project is presented as a single focal area project, it mentions that the project will minimize emission of CO2 in the tune of 33,829.71 t CO2 eq./year, which is significant additional benefit from the project.		
2) the baseline scenario or any associated baseline projects	Is the baseline identified clearly?	Yes		
	Does it provide a feasible basis for quantifying the project's benefits?	Yes		

	Is the baseline sufficiently robust to support the incremental (additional cost) reasoning for the project?	Yes		
	For multiple focal area projects: are the multiple baseline analyses presented (supported by data and references), and the multiple benefits specified, including the proposed indicators;	NA		
	are the lessons learned from similar or related past GEF and non-GEF interventions described; and	Yes		
	how did these lessons inform the design of this project?			

3) the proposed alternative scenario with a brief description of expected outcomes and components of the project	What is the theory of change?	Environmentally sound management of waste containing POPs and mercury		
	What is the sequence of events (required or expected) that will lead to the desired outcomes?	? Strengthening legal and institutional capacities for sound management of POPs and Mercury ? Prevention and reduction of POPs emission. ? Prevention and Minimization of Mercury Emissions.		

	<p>What is the set of linked activities, outputs, and outcomes to address the project's objectives?</p>	<ul style="list-style-type: none"> ? Strengthened legal and regulatory framework for sound management and elimination of POPs and Mercury ? Strengthened institutional coordination for sound management of POPs and Mercury ? A programme to decrease incidence of waste burning of dump sites/landfills and of hospital's waste disposal ? Two pilot projects on PCCD/Fs reduction emission through BAT/BEP in a dump site combined ? A plan to eliminate PCB contaminated equipment ? Two hundred (200) t of PCB equipment and waste from sensitive sites removed ? A plan for reduction of use of Expanded Polystyrene (with prevention as basic concept) as building material for reduction of HBCD ? Two Pilots project on final disposal of 30 t of EPS waste with HBCD in production and construction enterprises ? Five pilot projects for replacement of mercury containing equipment/products and establishment of a management and temporary storage system of mercury waste, in large hospitals and small priority health centres. ? Two pilot projects (2) in hospitals for reduction of emission of mercury through prevention and application of BAT/BEP for management and disposal of waste. 		
	<p>Are the mechanisms of change plausible, and is there a well-informed identification of the underlying assumptions?</p>	<p>Yes</p>		

	Is there a recognition of what adaptations may be required during project implementation to respond to changing conditions in pursuit of the targeted outcomes?	None		
5) incremental/ additional cost reasoning and expected contributions from the baseline, the GEF trust fund, LDCF, SCCF, and co-financing	GEF trust fund: will the proposed incremental activities lead to the delivery of global environmental benefits?	Yes		
	LDCF/SCCF: will the proposed incremental activities lead to adaptation which reduces vulnerability, builds adaptive capacity, and increases resilience to climate change?			

6) global environmental benefits (GEF trust fund) and/or adaptation benefits (LDCF/SCCF)	Are the benefits truly global environmental benefits, and are they measurable?	See overall assessment for comments on GEBs	The value of core indicator has been updated properly to 27,063.76 metric tons of CO2 of emission reduction in PRODOC and related Annexes.	Pleaser refer to: - Section V "Project Results Framework" of the PRODOC.
	Is the scale of projected benefits both plausible and compelling in relation to the proposed investment?	Yes		
	Are the global environmental benefits explicitly defined?	Yes		

	Are indicators, or methodologies, provided to demonstrate how the global environmental benefits will be measured and monitored during project implementation?	Yes		
	What activities will be implemented to increase the project's resilience to climate change?			
7) innovative, sustainability and potential for scaling-up	Is the project innovative, for example, in its design, method of financing, technology, business model, policy, monitoring and evaluation, or learning?	This needs further elaboration		

	Is there a clearly-articulated vision of how the innovation will be scaled-up, for example, over time, across geographies, among institutional actors?	The PIF states that "The design of the project is such that the results of these projects can be replicated in other landfills and hospitals or health centers in the rest of the country to multiply the experiences gained and implement success stories". This is not clear on how?		
	Will incremental adaptation be required, or more fundamental transformational change to achieve long term sustainability?	No		
1b. Project Map and Coordinates. Please provide geo-referenced information and map where the project interventions will take place.		Not provided	During PPG phase, pilot sites were project interventions will take place were defined.	Please refer to: Annex 2 "Project Map and Geospatial coordinates"
2. Stakeholders . Select the stakeholders	Have all the key relevant stakeholders	Yes		

<p>that have participated in consultations during the project identification phase: Indigenous people and local communities ; Civil society organizations; Private sector entities.If none of the above, please explain why. In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.</p>	<p>rs been identified to cover the complexity of the problem, and project implementation barriers?</p>			
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	<p>What are the stakeholders? roles, and how will their combined roles contribute to robust project design, to achieving global environmental outcomes, and to lessons learned and knowledge?</p>	Yes		
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<p>3. Gender Equality and Women's Empowerment. Please briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis). Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes/no/tbd. If possible, indicate in which results area(s) the project is expected to contribute to gender equality: access to and control over resources; participation and decision-making; and/or economic benefits or services. Will the project's results framework or logical framework include gender-sensitive</p>	<p>Have gender differentiated risks and opportunities been identified, and were preliminary response measures described that would address these differences?</p>	<p>Yes A gender analysis and action plan will be prepared during PPG.</p>	<p>During PPG phase, the related Gender Analysis and Action Plan was elaborated.</p>	<p>Please refer to Annex 10 "Gender Analysis and Action Plan"</p>
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	Do gender considerations hinder full participation of an important stakeholder group (or groups)? If so, how will these obstacles be addressed?	No		
5. 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	Are the identified risks valid and comprehensive? Are the risks specifically for things outside the project's control? For climate risk, and climate resilience measures: Are there social and environmental risks which could affect the project?	Yes. However, the risks are not ranked. Climate risk is not considered.	A comprehensive and thorough risk analysis was carried out at the PPG stage, considering all the risk categories following the UNDP Enterprise Risk Management (ERM) Policy?.	Please refer to: Section IV "Results and Partnership", subsection "Risks", of the ProDoc. Annex 4: Monitoring Plan Annex 5: SESP Annex 6: UNDP Risk Atlas Register

	How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?				r''
	Has the sensitivity to climate change, and its impacts, been assessed?				
	Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with?				

	What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?			
6. Coordination. Outline the coordination with other relevant GEF-financed and other related initiatives	Are the project proponents tapping into relevant knowledge and learning generated by other projects, including GEF projects?	Yes		
	Is there adequate recognition of previous projects and the learning derived from them?	Yes		

	Have specific lessons learned from previous projects been cited?	The PIF states that the lessons learnt from past will be used without stating how.	The consideration of specific lessons learned from previous projects were introduced in the detail of activities in order to be integrated during project activities execution. In particular PCB management related activities introduce the knowledge of previous and on going initiatives in latin america.	Please refer to Section IV "Results and Partnerships", sub-section "Expected results" .
	How have these lessons informed the project's formulation?	Not stated	Lessons learned from current and past initiatives informed the project's formulation in the design of activities to be implemented by this FSP.	Please refer to Section IV "Results and Partnerships", sub-section "Expected results" .

	Is there an adequate mechanism to feed the lessons learned from earlier projects into this project, and to share lessons learned from it into future projects?	Not stated		<p>The related mechanisms considered to feed the lessons learned are the following: -</p> <ul style="list-style-type: none"> - Inter-Governmental Network for Chemicals and Waste Management under the Forum of Ministers of Environment of Latin American and the Caribbean?; - Central American Commission for Environment and Development (CCADD) in the Central American Integration System (SICA); <p>yearly basis UNDP face-to face exchange and any other opportunity explored during project implementation.</p>	Please refer to Section IV "Results and Partnerships", sub-section "South-South Cooperation"
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<p>8. Knowledge management . Outline the ?Knowledge Management Approach? for the project, and how it will contribute to the project?s overall impact, including plans to learn from relevant projects, initiatives and evaluations.</p>	<p>What overall approach will be taken, and what knowledge management indicators and metrics will be used?</p>	<p>* The POPs management information system will be developed * Strategy for dissemination will be developed</p>		
	<p>What plans are proposed for sharing, disseminating and scaling-up results, lessons and experience?</p>	<p>The specific Knowledge Management Strategy will be developed during the PPG phase.</p>	<p>During PPG phase, further detail on the Knowledge Management Strategy was developed according to the scope of this FSP.</p>	<p>Please refer to Section IV "Results and Partnership", Output F.2: Lessons learned, and best practices extracted and disseminated at the national, regional, and global level.</p>

STAP advisory response	Brief explanatio n of advisory response and action proposed			
1. Concur	STAP acknowle dges that on scientific or technical grounds the concept has merit. The proponent is invited to approach STAP for advice at any time during the developm ent of the project brief prior to submissio n for CEO endorsem ent.			

	<p>* In cases where the STAP acknowledges the project has merit on scientific and technical grounds, the STAP will recognize this in the screen by stating that</p> <p><i>?STAP is satisfied with the scientific and technical quality of the proposal and encourages the proponent to develop it with same rigor. At any time during the development of the project, the proponent is invited to approach STAP to consult on the design.?</i></p>			
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<p>2. Minor issues to be considered during project design</p>	<p>STAP has identified specific scientific /technical suggestions or opportunities that should be discussed with the project proponent as early as possible during development of the project brief. The proponent may wish to:</p>			
	<p>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised;</p>			

	(ii) Set a review point at an early stage during project development, and possibly agreeing to terms of reference for an independent expert to be appointed to conduct this review.			
	The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.			

<p>3. Major issues to be considered during project design</p>	<p>STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical methodological issues, barriers, or omissions in the project concept. If STAP provides this advisory response, a full explanation would also be provided. The proponent is strongly encouraged to:</p>			
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	<p>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised; (ii) Set a review point at an early stage during project development including an independent expert as required. The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.</p>			
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ANNEX C: Status of Utilization of Project Preparation Grant (PPG).
(Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: 100,000	
<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (\$100,000)</i>

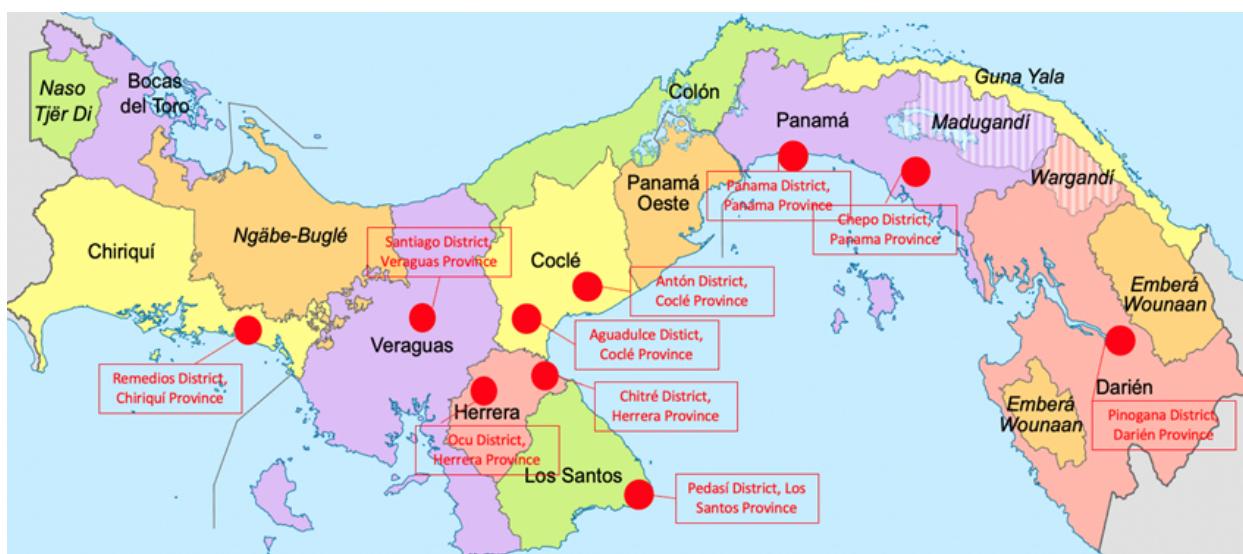
	<i>Budgeted Amount</i>	<i>Amount Spent Todate</i>	<i>Amount Committed</i>
Environmentally sound management of hazardous wastes containing POPs and mercury.	100,000	41,677.58	58,322.42
Total	100,000	41,677.58	58,322.42

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

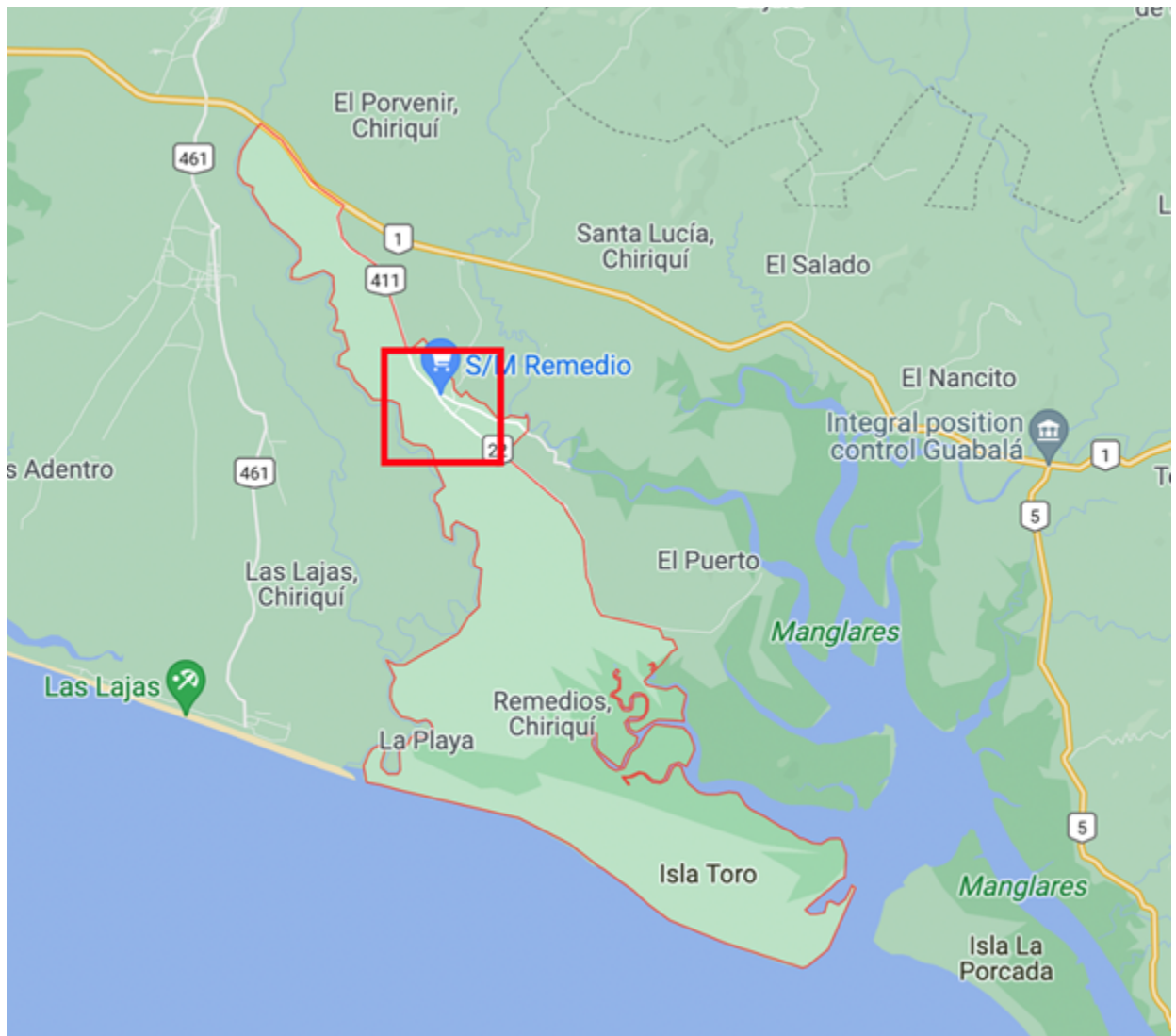
This FSP will strengthen and improve waste management practices in 10 landfills and 10 hospitals/healthcare centers in Panama. For that purpose, 10 pilot hospitals/healthcare centers and 8 pilot landfills have been pre-identified for interventions. They are distributed in 10 districts, in 7 provinces of Panama, as follows:

Map 1: Provinces and districts for interventions in Panama



Specific district maps and coordinates of pilot landfills and hospitals/healthcare centers already pre-identified are as follows:

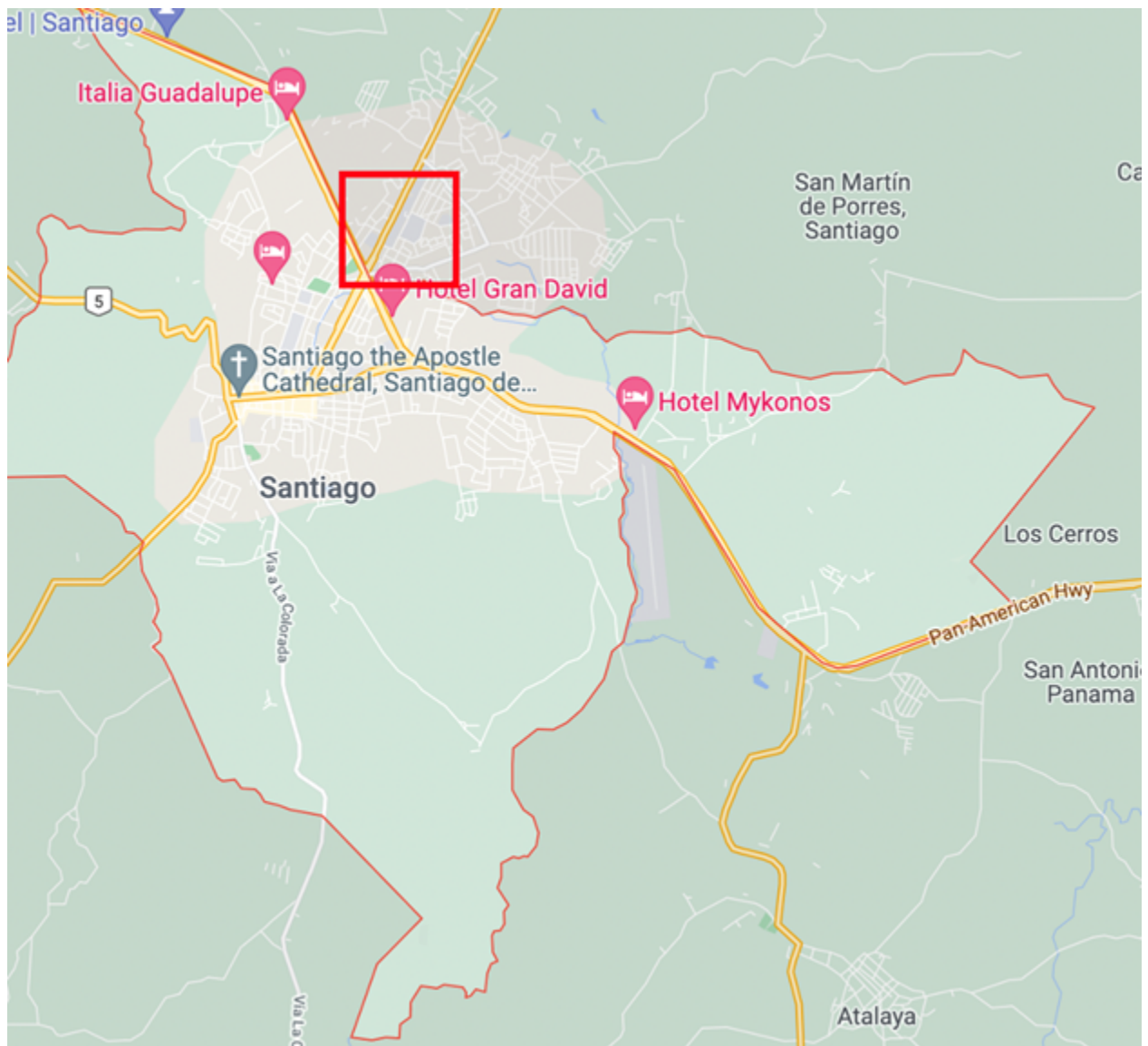
Map 2: Remedios District (Chiriquí Province)



•Pilot Healthcare center in Remedios District: Centro de Salud MINSA de Remedios
Coordinates: 8°13'45.12"N; 81°50'0.21"O

•Pilot landfill in Remedios District: Remedios landfill
Coordinates: 8°13'55.72"N; 81°49'52.68"O

Map 3: Santiago District (Veraguas Province)



- Pilot Healthcare center in Santiago District: Centro de Salud Canto del Llano
- Coordinates: 8° 7'6.56"N, 80°57'56.19"O

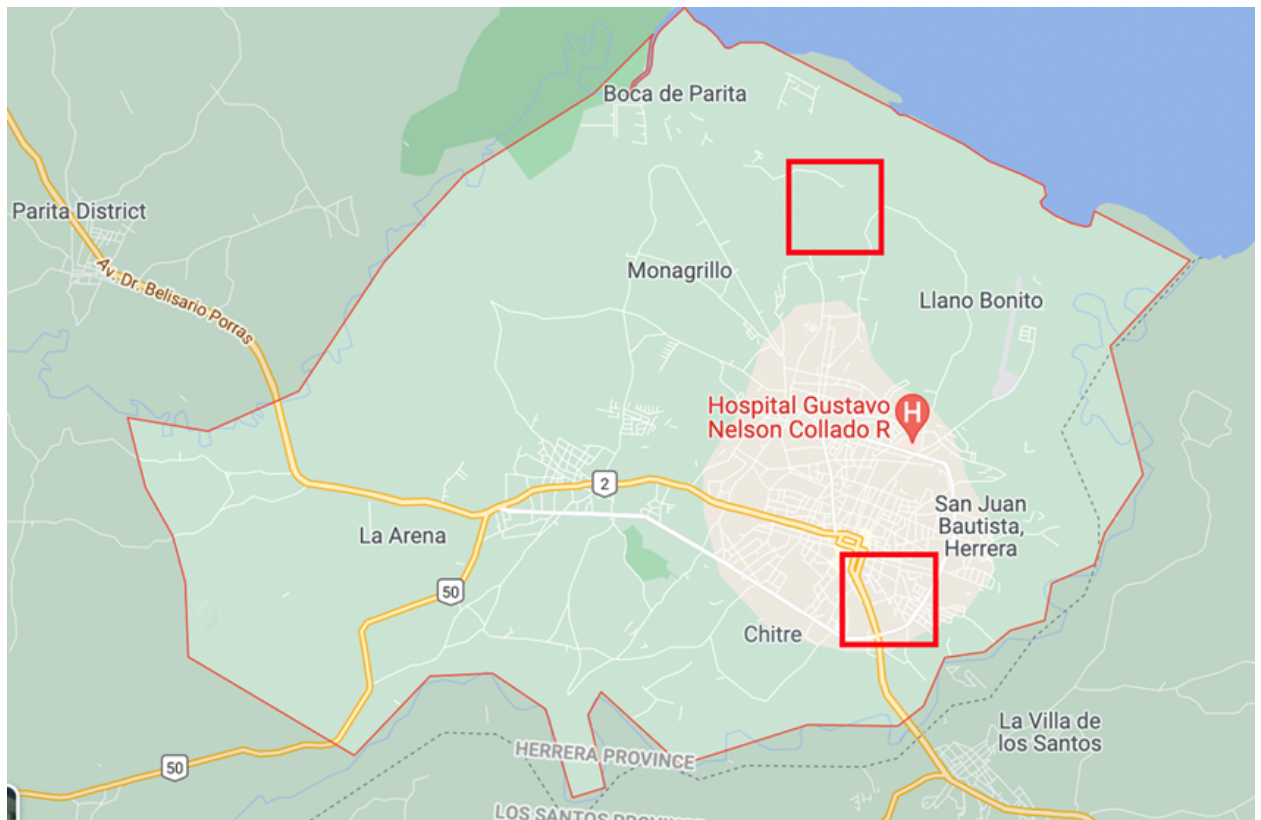
Map 4: Ocú District (Herrera Province)



- Pilot Healthcare center in Ocu District: Hospital Sergio Nuñez
- Coordinates: 7°56'31.52"N; 80°46'34.09"O

- Pilot landfill in Ocu District: Ocu landfill
- Coordinates: 7°58'25.05"N; 80°47'29.52"O

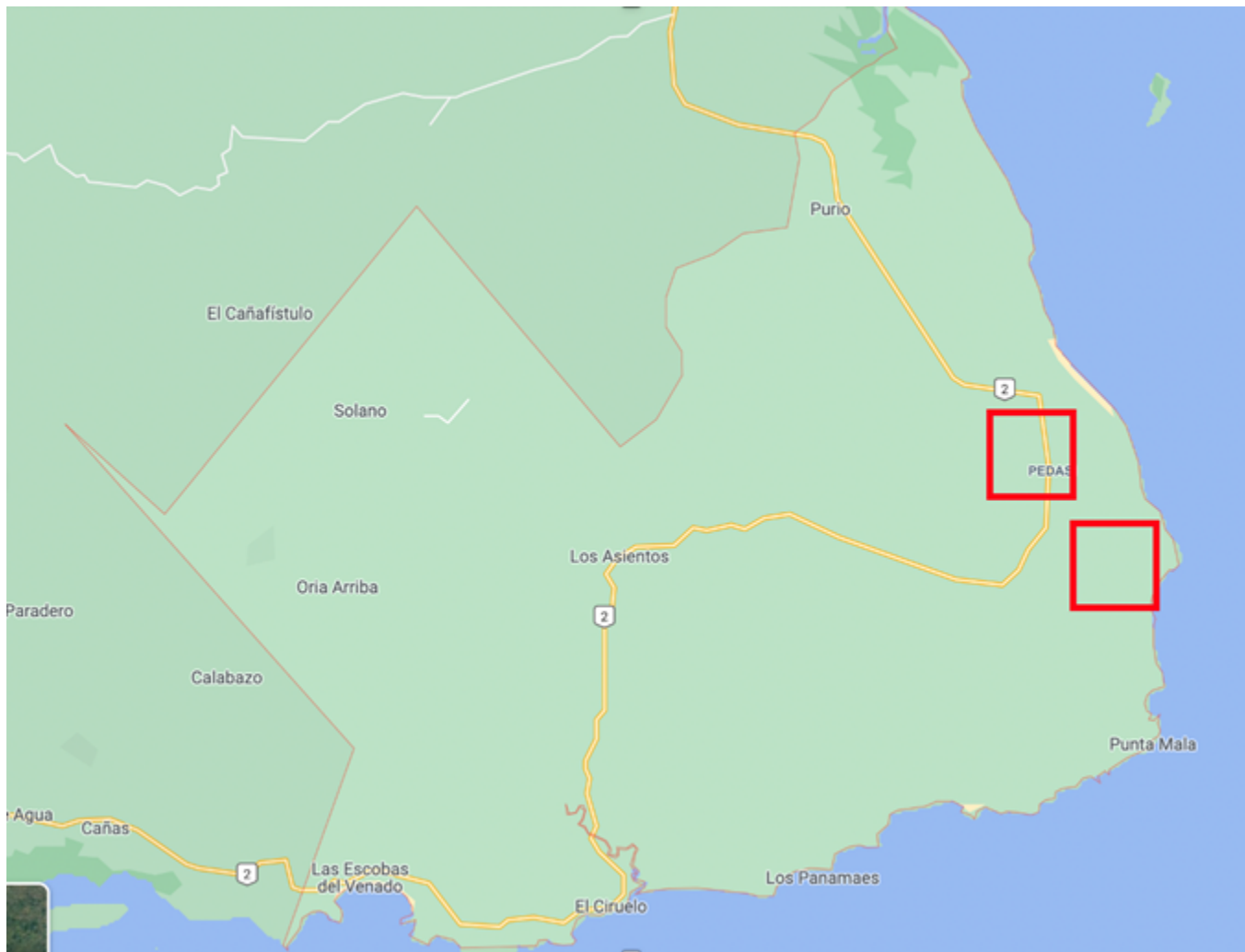
Map 5: Chiriquí District (Herrera Province)



- Pilot Healthcare center in Chitr? District: Hospital Cecilio Castellero
- Coordinates: 7°57'27.65"N; 80°25'36.97"O

- Pilot landfill in Chitr? District: Chitr? Landfill
- Coordinates: 7°59'27.49"N; 80°25'22.53"O

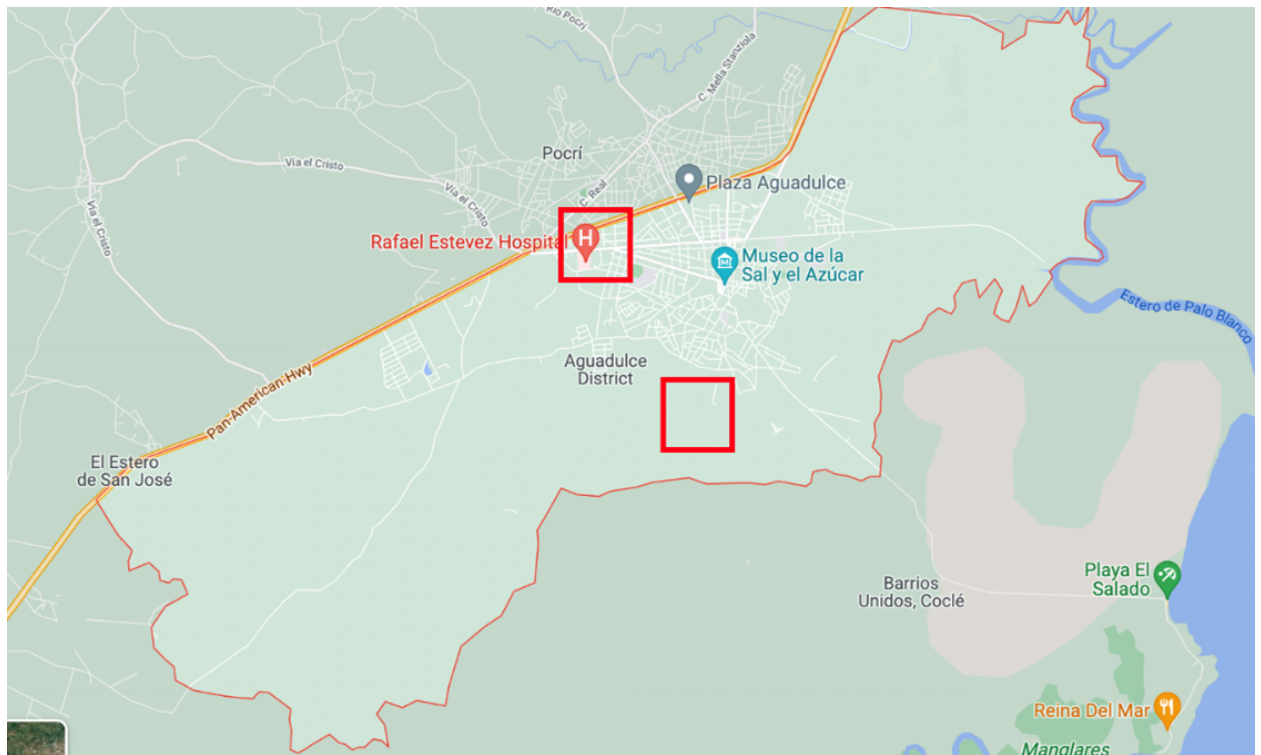
Map 6: Pedasí District (Los Santos Province)



- Pilot Healthcare center in Pedas? District: MINSA CAPSI Pedas?
- Coordinates: 7°32'36.53"N; 80° 1'41.33"O

- Pilot landfill in Pedas? District: Pedas? landfill
- Coordinates: 7°31'8.35"N; 80° 0'31.75"O

Map 7: Aguadulce District (Coclé Province)



- Pilot Healthcare center in Aguadulce District: Hospital Regional Rafael Estevez (CSS)
- Coordinates: 8°14'38.26"N; 80°33'27.03"O

- Pilot landfill in Aguadulce District: Aguadulce landfill
- Coordinates: 8°12'58.66"N; 80°32'25.32"O

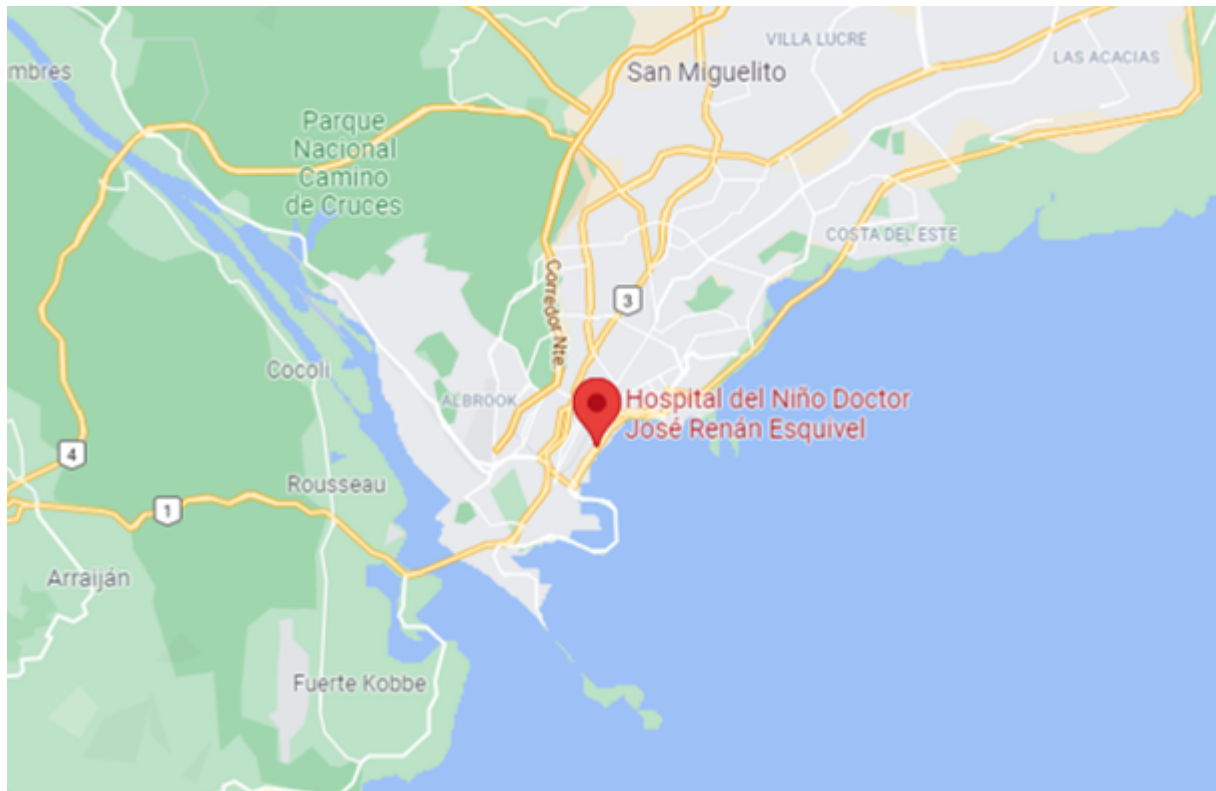
Map 8: Antón District (Coclé Province)



- Pilot Healthcare center in Antón District: Centro de Salud de Antón
- Coordinates: 8°23'44.88"N; 80°15'54.25"O

- Pilot landfill in Antón District: El Jobo landfill
- Coordinates: 8°24'15.51"N; 80°16'32.26"O

Map 9: Panamá District (Panama Province)



-
- Pilot Healthcare center in Panama District: Hospital del Niño
- Coordinates: 8°58'7.33"N; 79°31'55.78"O

Map 10: Chepo District (Panama Province)



- Pilot Healthcare center in Chepo District: Hospital Regional de Chepo (CSS)
- Coordinates: 9° 9'38.28"N; 79° 5'46.39"O

- Pilot landfill in Chepo District: Chepo landfill
- Coordinates: 9° 9'3.09"N; 79° 6'35.03"O

Map 11: Pinogana District (Darién Province)



- Pilot Healthcare center in Pinogana District: Hospital de Metetí?
- Coordinates: 8°33'35.60"N; 78° 1'14.49"O

- Pilot landfill in Pinogana District: Pinogana-Metet? Landfill
- Coordinates: 8°33'27.63"N; 78° 0'8.13"O

ANNEX E: Project Budget Table

Please attach a project budget table.

Expenditure Category	Detailed Description	Component (USDeq.)									Total (US Deq.)	Responsible Entity
		Component 1	Component 2			Component 3	Component 4	Sub-Total	M & E	PM C		(Executing Entity receiving funds from the GEF Agency)[1]
			Sub-component 2	Sub-component 3	Sub-component 4							
Equipment	Standard office equipment.							-		15,000	15,000	Ministry of Health (MINSA)
Equipment	Replacement of mercury added products in health establishments					43,000		43,000			43,000	Ministry of Health (MINSA)
Equipment	Training material to support activities under Output A2.	13,500						13,500			13,500	Ministry of Health (MINSA)

Equip ment	Standard IT equipment.							-		19, 000	19,0 00	Minist ry of Health (MIN SA)
Grants	To support the implement ation of activities under Output B1 through a CSO. UNDP policies on Low-Value Grant will be followed.		150,0 00	-	-			150, 000			150, 000	Minist ry of Health (MIN SA)
Contra ctual service s- Individ ual	1 Chemicals Manageme nt Specialist for overall coordinatio n of Componen ts 2 and 3 at 36,000/y, 5.5 years + 1 Chemicals Manageme nt Technician for overall coordinatio n of 10 pilot districts+h ospitals 29,000/y, 4 years					314,0 00		314, 000			314, 000	Minist ry of Health (MIN SA)

Contractual services- Individual	1 local individual Gender, SES and Stakeholder technician \$29,250/y, 4 years (41.026% allocation)							-	48,000		48,000	Ministry of Health (MINSA)
Contractual services- Individual	1 local individual Gender, SES and Stakeholder technician \$29,250/y, 4 years (58.9743% allocation) + 1 local individual for project assistance (day-to-day project implementation) 18,000/y, 5.5 years (24.2424% allocation)	93,000						93,000			93,000	Ministry of Health (MINSA)
Contractual services- Individual	One local individual for project assistance (day-to-day project implementation) 18,000/y - 5.5 years (25.253% allocation).						25,000	25,000			25,000	Ministry of Health (MINSA)

Contra ctual service s- Individ ual	One local individual for project assistance (day-to- day project implement ation) 18,000/y - 5.5 years (50.505% allocation).							-		50, 000	50,0 00	Minist ry of Health (MIN SA)
Contra ctual service s- Individ ual	One local Individual Project Manager 48,000/y 5.5 years + Chemicals Manageme nt Technician for overall coordinatio n of 10 pilot 29,000/y 4 years (districts+ hospitals)		204,0 00	88,00 0	88,00 0			380, 000			380, 000	Minist ry of Health (MIN SA)

Contractual services- Company	Contractual services for the design and implementation of the National Communication Strategy (social media, publications, scientific papers, articles, lessons learned etc.), with a gender perspective based on recommendations and proposed activities detailed in Annex F ?Stakeholder Engagement Plan? for the duration of the project (5 years).						40,000	40,000			40,000	Ministry of Health (MINSA)
Contractual services- Company	Contractual services to support implementation of Outputs B1, B2, C2, D1, D2, which includes the elimination of PCB from sensitive sites.		132,000	150,000	105,000			387,000			387,000	Ministry of Health (MINSA)

Contractual service s- Company	Contractual services to support monitoring and analytical development activities.	63,000						63,000			63,000	Ministry of Health (MINSA)
Contractual service s- Company	Contractual services to support the adequation of temporary storage sites of mercury-containing waste.					244,000		244,000			244,000	Ministry of Health (MINSA)
International Consultants	1 International Specialist on Hg Management at \$20,000 + 1 International Specialist on POPs and waste management at \$25,000 (Detail Annex 7)					45,000		45,000			45,000	Ministry of Health (MINSA)

International Consultants	1 international specialist on PCB management at \$30,000 + 1 international specialist on HBCD management at \$25,000. (Detail Annex 7)		-	30,000	25,000			55,000			55,000	Ministry of Health (MINSA)
International Consultants	1 International specialist on POPs and Hg management at \$14,000 + 1 international specialist on POPs and Hg Analysis at \$14,000. (Detail Annex 7)	28,000						28,000			28,000	Ministry of Health (MINSA)
International Consultants	MTR consultant at \$20,000 and TE consultant at \$25,000							-	45,000		45,000	Ministry of Health (MINSA)

Local Consultants	1 Institutional and legal local consultant at \$17,500 + 1 Analytical capacities and chemicals monitoring local consultant at \$17,500 (Detail Annex 7)	35,000						35,000			35,000	Ministry of Health (MINSA)
Local Consultants	1 National consultant at \$41,000 to prepare diagnosis for pilot projects + 1 national consultant at \$41,000 on PCB and HBCD.		41,000	20,500	20,500			82,000			82,000	Ministry of Health (MINSA)
Local Consultants	1 National consultant at \$45,000 to prepare diagnosis healthcare waste (incl. Hg) pilot projects + 1 National consultant at \$40,000 for developing healthcare establishments management plans.					85,000		85,000			85,000	Ministry of Health (MINSA)

Local Consultants	MTR local consultant at \$10,000 and TE local consultant at \$10,000; PIR translation at 500 USD/Y, 5 years.							-	22,500		22,500	Ministry of Health (MINSA)
Training, Workshops, Meetings	Inception Workshop (see M&E Table)							-	10,500		10,500	Ministry of Health (MINSA)
Training, Workshops, Meetings	Training activities to strengthen knowledge and capacities in public entities and national laboratories.	31,500						31,500			31,500	Ministry of Health (MINSA)
Training, Workshops, Meetings	Training and Workshops on BAT and BEP for mercury-waste management in hospitals.					76,000		76,000			76,000	Ministry of Health (MINSA)

Trainin g, Works hops, Meetin gs	Training and Workshop s on BAT and BEP in landfills, hospitals, PCB manageme nt and HBCD in constructio n manageme nt.		25,00 0	19,00 0	25,00 0			69,0 00			69,0 00	Minist ry of Health (MIN SA)
Trainin g, Works hops, Meetin gs	Training workshops , seminars and meetings for inception workshop, annual presentatio ns with steering committee and follow-up with Stakeholde rs (as per Stakeholde r Engageme nt Plan).						24,00 0	24,0 00			24,0 00	Minist ry of Health (MIN SA)
Travel	At least 1 supervisio n missions/fi eld visits (see M&E Table)							-	10, 000		10,0 00	Minist ry of Health (MIN SA)
Travel	Travel for implement ation and oversight of the 10 Pilot districts		45,00 0	-	-			45,0 00			45,0 00	Minist ry of Health (MIN SA)

Travel	Travel for implementation and oversight of the pilot hospitals.					46,000		46,000			46,000	Ministry of Health (MINSA)
Travel	Travel to support national knowledge and developments of Component 1. (and 4)	28,000						28,000			28,000	Ministry of Health (MINSA)
Office Supplies	Basic office supplies for duration of project period.							-		15,000	15,000	Ministry of Health (MINSA)
Other Operating Costs	Mandatory Audit Services (USD\$3,000 per year for 5 years).							-		15,000	15,000	Ministry of Health (MINSA)
Other Operating Costs	Printing and production costs.	8,000						8,000			8,000	Ministry of Health (MINSA)
Other Operating Costs	Printing of material on mercury management.					17,000		17,000			17,000	Ministry of Health (MINSA)
Other Operating Costs	Printing of material on UPOPs, PCB and HBCD management.		4,000	4,000	4,000			12,000			12,000	Ministry of Health (MINSA)
Other Operating Costs	Standard project communication strategy.							-		16,000	16,000	Ministry of Health (MINSA)

Other Operating Costs	Training and dissemination materials; Knowledge Management Report.						25,000	25,000			25,000	Ministry of Health (MINSA)
Grand Total		300,000	601,000	311,500	267,500	870,000	114,000	2,464,000	136,000	130,000	2,730,000	

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

N/A

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencies is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

N/A

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

N/A