Part I: Project Information

GEF ID
10798

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
CBIT **No**
NGI **No**

Project Title
Reduction of unintentionally-produced persistent organic pollutants and mercury through an environmentally-sound approach on health care wastes management in the Philippines with a special focus on the pandemic

Countries
Philippines

Agency(ies)
UNIDO

Other Executing Partner(s)
Ergons Project Marketing Consultant

Executing Partner Type
Private Sector

GEF Focal Area
Chemicals and Waste

Sector
Technology Transfer/Innovative Low-Carbon Technologies

Taxonomy

Focal Areas, Chemicals and Waste, Open Burning, Best Available Technology / Best Environmental Practices, Sound Management of chemicals and waste, Persistent Organic Pollutants, Uninentional Persistent Organic Pollutants, Waste Management, Hazardous Waste Management, Mercury, Disposal, Influencing models, Demonstrate innovative approache, Convene multi-stakeholder alliances, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Beneficiaries, Stakeholders, Civil Society, Non-Governmental Organization, Private Sector, SMEs, Communications, Education, Awareness Raising, Behavior change, Strategic Communications, Type of Engagement, Consultation, Participation, Partnership, Information Dissemination, Gender Equality, Gender results areas, Capacity Development, Knowledge Generation and Exchange, Gender Mainstreaming, Gender-sensitive indicators, Sex-disaggregated indicators, Capacity, Knowledge and Research, Knowledge Exchange, Field Visit, Knowledge Generation, Course, Training, Workshop, Seminar

Rio Markers

Climate Change Mitigation

No Contribution 0

Climate Change Adaptation

No Contribution 0

Biodiversity

No Contribution 0

Land Degradation

No Contribution 0

Submission Date

6/10/2022

Expected Implementation Start

10/1/2022

Expected Completion Date

9/30/2027

Duration

60In Months

Agency Fee($)

463,600.00

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	4,880,000.00	71,843,454.00
		Total Project Cost($)	**4,880,000.00**	**71,843,454.00**

B. Project description summary

Project Objective

Protection of human health and the environment through the reduction of unintentionally-produced POPs and mercury in the healthcare waste sector promoting environmentally-sound approaches

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
1.a Unintentionally produced POPs release reduction in the healthcare waste sector	Technical Assistance	1.1 Policies and environmentally sound procedures developed and adopted for the minimization of health care wastes, focusing on wastes generated during the pandemic, and in support of MSMEs.	1.1.1 Strengthening of relevant national policies on healthcare wastes management with special focus on responses during pandemics 1.1.2 Inventory procedures and guidelines for the calculation of additional waste generated during pandemic, with special reference to the current COVID-19 pandemic established 1.1.3 Assessment of the lifecycle impact of PPEs and protective measures with reference to the consumption of material and generation of potentially contaminated wastes and POPs completed. 1.1.4: Analysis of the impact of different chemical disinfection procedures for waste and	GET	638,400.00	5,260,510.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
1.b Unintentionally produced POPs release reduction in the healthcare waste sector	Investment	1.2. Environmentally-sound technology for the collection, treatment and recycling of wastes generated during pandemic implemented.	1.2.1 Technologies and procedures upgraded to be BAT/BEP compliant 1.2.2 Low or zero-emission technologies for the pre-treatment of wastes generated during pandemic, implemented in a cluster of healthcare facilities and TSDs	GET	1,850,150.00	32,402,702.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
2a. Management of mercury, mercury-added products (MAPs) and mercury wastes in the healthcare sector according to the Minamata Convention on Mercury and the Philippine National Action Plan for MAPs phase-out	Technical Assistance	2.1 Improved synergies to support the phase-out of Mercury-added Product (MAPs) and environmentally-sound management of mercury and mercury wastes, especially in the healthcare sector	2.1.1 Harmonized policies and updated action plans on mercury, MAPs, and mercury wastes across concerned and mandated agencies developed 2.1.2 Inventory and monitoring systems for MAPs and mercury wastes, emissions, and releases institutionalized	GET	316,500.00	3,175,730.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2: Management of mercury, mercury-added products (MAPs) and mercury wastes in the healthcare sector according to the Minamata Convention on Mercury and the Philippine National Action Plan for MAPs phase-out	Investment	2.2 Demonstrated capacity to adopt best available technologies and best environmental practices for the environmentally sound management of mercury wastes from the healthcare sector	2.2.1 Capacity of mercury waste service providers upgraded to be BAT/BEP compliant 2.2.2 Environmentally sound management of MAPs and mercury stockpiles in the healthcare sector demonstrated	GET	1,190,700.00	22,455,726.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
3. Capacity building, awareness raising and knowledge management	Technical Assistance	3.1 Enhanced capacities to implement policies and workplans for the environmentally-sound management of infectious and hazardous wastes in the healthcare sector 3.2 Increased awareness and knowledge on infectious and hazardous wastes to promote a whole-of-nation approach towards health and environmental protection	3.1.1 Capacity building activities related to the environmentally-sound management of infectious and hazardous wastes in the healthcare sector for government authorities, staff of healthcare facilities and TSDs, and civil society organizations undertaken 3.1.2 Awareness raising and advocacy programs targeting the general public, community leaders, schools, enterprises, private sector players, and other stakeholders conducted 3.1.3 Knowledge management system established	GET	478,500.00	3,236,953.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
4. Monitoring and Evaluation	Technical Assistance	4.1 Project monitoring and evaluation based on lessons learnt ensured	4.1.1 Project monitoring implemented, including gender plans, environmental and social management plan (ESMP) and stakeholder engagement plan (SEP) 4.1.2 Independent midterm review and final evaluation undertaken	GET	175,750.00	1,887,840.00
				Sub Total ($)	**4,650,000.00**	**68,419,461.00**

Project Management Cost (PMC)		
GET	230,000.00	3,423,993.00
Sub Total($)	**230,000.00**	**3,423,993.00**
Total Project Cost($)	**4,880,000.00**	**71,843,454.00**

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	Department of Environment and Natural Resources - Environmental Management Bureau	Grant	Investment mobilized	3,631,999.00
Recipient Country Government	Department of Environment and Natural Resources - Environmental Management Bureau	In-kind	Recurrent expenditures	1,716,400.00
Recipient Country Government	Department of Health	Grant	Recurrent expenditures	1,571,410.00
Recipient Country Government	Department of Health	Equity	Investment mobilized	356,000.00
Recipient Country Government	Department of Health	In-kind	Recurrent expenditures	8,869,372.00
Recipient Country Government	Department of Environment and Natural Resources - Foreign-assisted and Special Projects Service	In-kind	Recurrent expenditures	129,977.00
Recipient Country Government	Development Bank of the Philippines	Loans	Investment mobilized	25,000,000.00
Beneficiaries	City of Ilagan	Equity	Investment mobilized	614,621.00
Beneficiaries	City of Ilagan	In-kind	Recurrent expenditures	113,420.00
Beneficiaries	Cagayan Valley Medical Center	Equity	Investment mobilized	265,000.00
Beneficiaries	Cagayan Valley Medical Center	In-kind	Recurrent expenditures	118,519.00

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Beneficiaries	Eastern Visayas Medical Center	Grant	Investment mobilized	1,407,410.00
Beneficiaries	Eastern Visayas Medical Center	In-kind	Recurrent expenditures	1,226,568.00
Beneficiaries	Quirino Memorial Medical Center	Equity	Investment mobilized	4,607,528.00
Beneficiaries	Quirino Memorial Medical Center	In-kind	Recurrent expenditures	5,713,277.00
Private Sector	Nomura Kohsan	In-kind	Recurrent expenditures	64,000.00
Private Sector	Metro Clark Waste Management Corporation	Equity	Investment mobilized	2,071,007.00
Private Sector	Metro Clark Waste Management Corporation	In-kind	Recurrent expenditures	3,454,857.00
Private Sector	Integrated Waste Management Inc.	Grant	Investment mobilized	1,051,597.00
Private Sector	Integrated Waste Management Inc.	Equity	Investment mobilized	5,734,588.00
Private Sector	Integrated Waste Management Inc	In-kind	Recurrent expenditures	493,408.00
Private Sector	ENVIROCARE	Equity	Investment mobilized	744,426.00
Private Sector	ENVIROCARE	In-kind	Recurrent expenditures	1,698,769.00
Private Sector	Pollution Abatement Systems Specialist Inc.	Equity	Investment mobilized	598,801.00
Private Sector	ERGONS	In-kind	Recurrent expenditures	300,500.00

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Donor Agency	Ministry of Environment-Japan	Grant	Recurrent expenditures	90,000.00
GEF Agency	UNIDO	Grant	Investment mobilized	100,000.00
GEF Agency	UNIDO	In-kind	Recurrent expenditures	100,000.00
			Total Co-Financing($)	**71,843,454.00**

Describe how any "Investment Mobilized" was identified

Investment mobilized is sourced out mainly from the Sustainable Waste-management for Enhanced Environmental Protection ?SWEEP? loan program of the Development Bank of the Philippines. The loan framework intends to address the challenges posed by the lack of facilities for the environmentally sound disposal of hazardous wastes and maybe accessed by local government units and treatment, storage and disposal facilities (TSD). Participating LGUs and TSD facilities will also mobilize investments to upgrade their equipment and infrastructures primarily addressing healthcare wastes. Partner hospitals have also committed equity investments providing baseline funding in the form of facilities and infrastructures. As a government priority, DENR and DOH have also provided allocation in the respective Department's budget to directly address the needs for sound healthcare wastes management. DENR will be providing PhP 186,000,000 direct grant to fund temporary storage facilities to LGUs without access to proper disposal facilities. DOH will continue to support government run hospitals in funding pre-treatment facilities within hospital premises and provide funding for healthcare waste disposal, as applicable. All these investments have been mobilized and will serve as strong baseline to the GEF incremental grant.

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($)
UNIDO	GET	Philippines	Chemicals and Waste	POPs	2,930,675	278,414.13	3,209,089.13
UNIDO	GET	Philippines	Chemicals and Waste	Mercury	1,949,325	185,185.87	2,134,510.87
				Total Grant Resources($)	**4,880,000.00**	**463,600.00**	**5,343,600.00**

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 ($)

150,000

PPG Agency Fee ($)

14,250

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)	Total($)
UNIDO	GET	Philippines	Chemicals and Waste	POPs	82,500	7,837.5	**90,337.50**
UNIDO	GET	Philippines	Chemicals and Waste	Mercury	67,500	6,412.5	**73,912.50**
				Total Project Costs($)	**150,000.00**	**14,250.00**	**164,250.00**

Core Indicators

Indicator 9 Chemicals of global concern and their waste reduced

Metric Tons (Expected at PIF)	Metric Tons (Expected at CEO Endorsement)	Metric Tons (Achieved at MTR)	Metric Tons (Achieved at TE)
10.43	10.43	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)

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)
10.43	10.43		

Indicator 9.3 Hydrochloroflurocarbons (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)

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 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)
14,834.00	13,638.00		

Indicator 9.7 Highly Hazardous Pesticides eliminated

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

Indicator 9.8 Avoided residual plastic waste

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

Indicator 10 Persistent organic pollutants to air reduced

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)
422.60	471.00		

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)
1	1		

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	480	480		
Male	320	320		
Total	800	800	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

Part II. Project Justification

1a. Project Description

?**Describe any changes in alignment with the project design with the original PIF.**

The project structure presented in this document is consistent with that presented in the PIF. The project framework is essentially the same with the main components on reduction of unintentionally-produced POPs releases and management of mercury, mercury added products and mercury wastes in the healthcare sector sharing the main budget allocations

Due to the detailed assessment made during the PPG phase, however, some changes have been incorporated in the present document compared to the original PIF. The budgets for the components have been refined and redistributed to a limited extent but these did not impact the total GEF grant. Some outputs have been reworded and further elaborated.

An overview of the changes from the PIF structure versus the CEO Endorsement is given in the table below:

Component/Activity/ Section	Original PIF	Adjusted in CEO Endorsement	Justification

Component 1: Unintentionally produced POPs release reduction in the healthcare waste sector	Output 3.1.2 Technical assistance to help MSMEs in the healthcare sector, including waste Treatment, Storage and Disposal (TSD) facilities and manufacturers of PPEs and other non-mercury-containing medical devices, to access green financing schemes to facilitate the transition to mercury freeproducts in the healthcare sector.	Moved under Component 1 from Component 3, now Output 1.1.6 Technical assistance to help Treatment, Storage and Disposal (TSD) facilities and manufacturers of PPEs, to access green financing schemes.	Output 1.1.6 is more related to technical assistance and POPs release reduction than to capacity building and awareness raising. TSD facilities requested more targeted support on preparation of loan packages. Green financing scheme is available for TSD facilities and PPE manufacturers based on loan guidelines from the Development Bank of the Philippines.
	Output 1.2.1 Capacity of waste service providers upgraded in terms of availability of technologies and BAT/BEP compliance	Wording revised. Current Output 1.2.1 Technologies and procedures upgraded to be BAT/BEP compliant.	Wording changed to better reflect the activities envisaged under this output.

	Previous Output 1.2.2: Technologies for the low cost, small scale non combustion pre-treatment of wastes generated during pandemic, suitable for small scale and remote hospitals, implemented in a cluster of health care facilities, demonstrated.	Wording changed. Current Output 1.2.2 Output 1.2.2 Low or zero emission technologies for the pre-treatment and disposal of wastes generated during pandemic, implemented in a cluster of health care facilities and TSDs	Wording changed to better reflect the activities envisaged under this output.
Component 3: Capacity building and awareness raising	Output 3.1.2 Technical assistance to help MSMEs in the healthcare sector, including waste Treatment, Storage and Disposal (TSD) facilities and manufacturers of PPEs and other non-mercury-containing medical devices to access green financing schemes to facilitate the transition to mercury freeproducts in the healthcare sector	Moved to section 1, as new output 1.1.6 (see above)	See above (Output 1.1.6)

Component Budget			Limited redistribution of the GEF grant within the 4 project components to better align with the scope of Outputs and Activities as well as with confirmed co-finance.

A. THE GLOBAL ENVIORNMENTAL AND/OR ADAPTATION PROBLEMS, ROOT CAUSES AND BARRIERS THAT NEED TO BE ADDRESSED

1. Health care waste (HCW) refers to all wastes generated as a result of any of the following activities such as: diagnosis, treatment or immunization of human being and research pertaining to these activities, research using laboratory animals for the improvement of human health, production or testing of biological and other activities performed in all health care facilities . HCW includes broad range of materials, from used needles and syringes to soiled dressing, body parts, diagnostic samples, blood, chemicals, pharmaceuticals, medical devices and radioactive materials.

2. Of the total amount of waste generated by health-care activities, about 85% is general, non-hazardous waste comparable to domestic waste. The remaining 15% is considered hazardous material that may be infectious, chemical or radioactive (WHO, 2018). Open burning of healthcare wastes, under certain conditions, result in the emission of dioxins and furans and particulate matter. As such, improper or poor management of these wastes may potentially expose health care waste management workers and personnel, patients and the community to health risks. It may also threaten the quality of the environment through environmental contamination.

3. At a global level, the mercury emission generated through unsound management of mercury containing health care waste is significant. In 2015, global level emissions from unsound management of mercury-added products (MAP) comprised about 7% of the total global Hg emission (around 155 t). Emission in the Philippines generated by MAP are estimated to be around 40 t /y. Around 25% of this emission is caused due to unsound management of mercury containing health care waste.

4. The healthcare sector is growing at a very rapid pace which, in turn, has led to a tremendous increase in the quantity of medical waste generated. The quantity of healthcare waste produced in a typical developing country depends on a wide range of factors and may range from 0.5 to 2.5 kg per bed per day (Zafar, 2018). The increasing amount of medical wastes poses a significant public and environmental challenges globally. The healthcare waste management sector is further impacted by the following root causes: (i) insufficient waste management infrastructures; (ii) improper disposal methods and; (iii) weak policies addressing medical waste management. Practically, the healthcare waste management sector in least developed and some developing countries is already stressed and the situation was exacerbated by the COVID-19 health crises.

5. On 11 March 2020, the World Health Organization (WHO) declared COVID-19 a pandemic, pointing to the over 118,000 cases of the coronavirus illness in over 110 countries and territories

around the world and the sustained risk of further global spread. Around 2 years later, there have been 399, 600, 607 confirmed cases of COVID-19, including 5, 757, 562 deaths, reported to WHO. The COVID-19 pandemic is, therefore, the worst pandemic affecting mankind in recent years, after the 1918 Spanish flu.

6. Global data also shows that the COVID-19 pandemic has led to a significant increase of infections in a relatively short time, which requires a dramatic rise in demand of resources, from human (e.g. medical personnel, waste handlers, etc.) to material resources (e.g. healthcare facilities, medical supplies such as face masks and other personal protective equipment, hand hygiene, etc.), to effectively control the spread of the virus infections and its economic impact . With the high rate of infections worldwide and economic standstill in developed countries and China, the scarcity of supply of essential and critical products and resources such as those mentioned above has been experienced. This situation has also demonstrated that countries are not prepared and have varying capacities to respond to such pandemics.

7. The pandemic has led to the tremendous increase in demand for medical supplies such as COVID-19 diagnostic testing equipment and consumables, PPE for medical personnel of healthcare facilities (HCFs), testing centers/laboratories, MW disposal services, and even PPE used for patients and the general population. Therefore, there is a need to strengthen the local capacities and infrastructure in countries on the supply of these materials to ensure readiness for challenges, such as limited supply, transport and increase in prices, during pandemic events.

8. The global COVID-19 outbreak placed an immense strain on societies and economies around the world, including the Philippines. Healthcare systems in the country, unprepared to face a health crisis of this scale and magnitude, were put under pressure, facing shortages of facilities, manpower, medical equipment and supplies of PPE, and challenges with the management of excessive medical wastes. The pandemic has caused a significant ramp-up of the generation of infectious wastes associated with single-use PPE (face masks, gloves, gowns), both from households and hospitals, increased usage of medical devices containing mercury and a massive increase on the use of chlorine based chemicals for disinfection.

9. The COVID-19 pandemic has also accelerated the replacement of mercury containing medical thermometers with the faster and user friendly electronic devices as a routine mean of temperature check in public places, not limited to hospitals. This has however generated quite a significant amount of discarded mercury devices which are very often improperly stored.

10. This global crisis has also resulted to response measures that have caused disruptions across economic and social sectors, causing urgent issues around food security and safety, nutrition, and income-generation; and endangering employment and livelihood. The long-term socio-economic impacts are expected to be immense and far-reaching.

11. The management of healthcare wastes in the country was already under stress before the outbreak of the COVID-19 pandemic. The Philippines has to address a number of root causes and barriers to ensure that health care wastes is managed in an environmental, social and economic sustainable manner. The major root cause identified in the management of healthcare waste sector in the

Philippines include: (i) Local Government Units (LGUs) tasked to manage waste management, in general, are not capable to handle medical and hazardous wastes; (ii) Lack of service providers for the management of D407 (Hg wastes) and; (iii) Incoherent policies on healthcare waste management, in general. The following barriers have been identified and needs to be addressed by the project:

Classification	Barriers Identified
Institutional and regulatory	? Lack of coordination and collaboration among relevant governmental institutions/entities ? Undocumented storage and disposal of MAPs ? Non-reporting of treatment and disposal of infectious wastes by generators
Technology and practice	? BAT/BEP for ESM of hazardous health care waste not applied ? Lack of technical guidance for the application of BAT/BEP
Capacity and awareness	? Low awareness on the negative impacts and risks of unsound management of hazardous health care wastes ? Capacity and knowledge for ESM of health care wastes is low among service providers
Financial	? Limited access to green financing for healthcare and hazardous wastes management, in general

12. The proposed project aims to set-up an environmentally-sound healthcare waste management system in the country to address the current pandemic and to ensure that measures are in place to address challenges of the same nature in the future. The increased protection of the environment from emissions of substances of global concern like POPs and mercury will contribute to the improvement of human health at national and global level.

B. THE BASELINE SCENARIO AND THE ASSOCIATED BASELINE PROGRAMS

Current situation of healthcare wastes generation and management in the Philippines

13. Healthcare facilities in the Philippines include the following: Animal bite clinics, Barangay Health Stations, Birthing Homes, City Health Offices, COVID-19 testing Laboratories, DepEd clinics, Dialysis clinics, Drug abuse treatment and rehabilitation centers, drug testing laboratories, General Clinic/Laboratory, Hospitals, Infirmary, Municipal Health Offices, and Rural Health Units. COVID-19 quarantine and isolation centers are not classified among these facilities.

14. In 2018, the registered total bed capacity in the Philippines was 107,508. As of April 2020, the registered number of hospital bed is 876,000 with an average of 5.2 hospital beds per 10,000 population. The National Capital Region and Region 4B registered the highest (13.5) and lowest (1) ratio respectively. The prescribed proportion of hospital beds, according to the WHO, is one per 1,000 population.

15. The hospitals in the Philippines are classified based on ownership (government, private); scope of service (general, specialty) and functional capacities or service capabilities. These are Level 1, Level 2 and Level 3 with 25 ? 75, 100 -200 and 200 ? 500 bed capacities respectively.

16. The Department of Health (DOH) supervises and controls the management and operations of 66 hospitals located in all administrative regions in the country. Among the DOH hospitals, 38 are in Luzon, 12 in Visayas, and 16 in Mindanao. Majority (56%) of these facilities are Level 3 Hospitals. In 2020, the total licensed beds of these hospitals are 22,773 while implementing beds amount to 27,019. Based on the service capability and capacity of DOH hospitals, there are 38, 21, and 8 Level 3, Level 2 and Level 1/Custodial Psychiatric Care respectively. Throughout the country, there are 790 private hospitals and 434 hospitals run by the national and local governments, 48 of which are located in Metro Manila.

17. The Department of Environment and Natural Resources (DENR) through the Environmental Management Bureau (EMB)is mandated to enforce and implement RA 6969 (Toxic Substances and Hazardous Waste Management Act of 1990) and its Implementing Rules and Regulations (IRR) to regulate all hazardous waste generators, transporters and TSD operators. The Act requires to ensure that all hazardous wastes including infectious wastes (M501) are properly handled, collected, treated and disposed of in a sanitary landfill. Hospitals, clinics and other healthcare facilities are required to register as hazardous waste generators. or specialization in such aspects like generation, transport and treatment of HCW. On the other hand, the Department of Health (DOH) is the agency implementing the Sanitation Code of the Philippines (PD 856) that provides sanitary requirements for the management of solid wastes including biomedical or health care waste management within the hospital premises.

18. The management of medical wastes in the country was already under stress before the outbreak of the COVID-19 pandemic. There was already insufficient disposal capacity to treat in a safe way the estimated 54,644 tons of infectious waste generated per year (corresponding to an amount of 1.39 kg of waste per bed per day before COVID-19 pandemic) in 2018 as shown in Table 1. With the country also implementing the deployment of vaccines as outlined in the country?s National Deployment and Vaccination Plan for COVID-19 Vaccines released in January 2021, an increase in the usage of syringes and other immunization paraphernalia nationwide to reach 108 million Filipinos further aggravates the situation.

Table 1: M501 wastes generated per region in 2018 (before COVID-19 pandemic)

Region	**Tons generated in 2018**

I	986.89
II	41.58
III	699.74
IV-A	2589.14
IV-B	4.10
V	285.61
VI	740.15
VII	168.35
VIII	7919.91
IX	107.50
X	196.91
XI	-
XII	287.48
NCR	25,532.15
CAR	64.14
CARAGA	15,019.89
Total	54,643.54

19. The weaknesses in the healthcare waste management system in the country maybe attributed to the financial situation of the local government units (LGUs) mandated to manage the wastes, and the lack of proper infrastructures and technical expertise to provide environmentally-sound solutions from generation, transport and disposal. With the increase of wastes generated, poor waste management systems and chemical disinfection activities, it is expected that there will be an increase in the amount of U-POPs and mercury emissions from the healthcare sector.

20. As of December 2021, there are 30 registered TSD facilities in the Philippines that can handle M501 (infectious) wastes. Registration of these facilities is made on an annual basis and therefore, number may vary depending on the date the information is retrieved. Table 2 outlines the number of TSD facilities and corresponding category and capacities per region in the Philippines. Based on the online hazardous waste management system of the DENR-EMB, the pre-pandemic M501 waste generation data (2019) was obtained and compared with the pandemic data (June 2020- December

2021). An increase of 480% was recorded based on the total generated wastes. Compared to the waste generation rate, the treatment capacity of the TSD facility is short of 924 MT/day. For regions without TSD facilities and TSD Category F (Region 8), the generation vs capacity was calculated based on the 2020-2021 data.

Table 2. Category and Capacity of TSD Facilities per Region and M501 waste generation

Region	No of TSD Facilities	TSD Category*	TSD Capacity (MT/Day)	2019 M501 Generation (MT/Day)	2020-2021** Generation (MT/Day)	Generation vs Capacity
CAR	0			0.51	3.01	-3.01
NCR	3	Category B	18	22.45	404.72	-346.72
		Category E	40			
Region 1	1	Category B	45.6	1.97	34.27	11.33
Region 2	0			0.44	2.89	-2.89
Region 3	12	Category A	0.29	1.01	117.37	80.53
		Category B	197.9			
		Category C	5,000			
Region 4A	6	Category B	149.63	183.48	237.82	-88.19
Region 4B	1	Category B	6	0.06	0.61	5.39
Region 5	0			2.46	5.97	-5.97
Region 6	0			1.81	462.29	-462.29
Region 7	3	Category B	50	5.68	98.05	-48.05
Region 8	1	Category F		23.75	2.85	-2.85

Region 9	0					
Region 10	2	Category A	0.01	0.49	2.58	-2.53
		Category B	0.05			
Region 11	0			1.08	10.77	-10.77
Region 12	1	Category B	1.92	1.39	15.02	-13.10
Region 13	0			0.11	34.64	-34.64
TOTAL	30		5,509.40	247.07	1,433.11	-924.01

* TSD Category based on Department Administrative Order (DAO) 2013-22: Category A (in-situ treatment of generated wastes utilizing Categories B to E technologies); Category B (Thermal Treatment); Category C (Landfills); Category D (recycle/reprocess hazardous wastes); Category E (chemical treatment, S/S and other similar processes); Category F (Only Temporary storage facilities)

** Based on the Online Hazardous Waste Management System, June 2020 - December 2021, Hazardous Waste Section, DENR-EMB Central Office

21. For regional comparison on the generation rates (pre-pandemic and pandemic), an increasing trend is noted except for Region 8 which shows a reduction of -88%. Region 6 registered the highest increase in generation rate at 25,441%. These values may be considered outliers. This a can be attributed to the current online manifest system that records the generation rate based on the permit to transport application and not on the in-situ or actual generation. This is one of the gaps that the project intends to address.

22. The current regulation requires that treated healthcare waste shall be disposed in a dedicated cell of a DENR registered Category C (landfill) TSD facility. As per the data above, only 1 TSD facility is registered as Category C. Official data (DENR EMB in its Bayanihan Heal as One presentation) show an increase of around 700% of healthcare wastes transported and treated as shown in Figure 1. More, alarming scenario, however, is the discrepancies in the recorded data on generation, versus transported versus amount of wastes treated or disposed. Based on official data, only around 30% of healthcare wastes generated and applied for transport is actually treated and disposed. All these information points to the gaps and weaknesses in the management of healthcare wastes in the country.

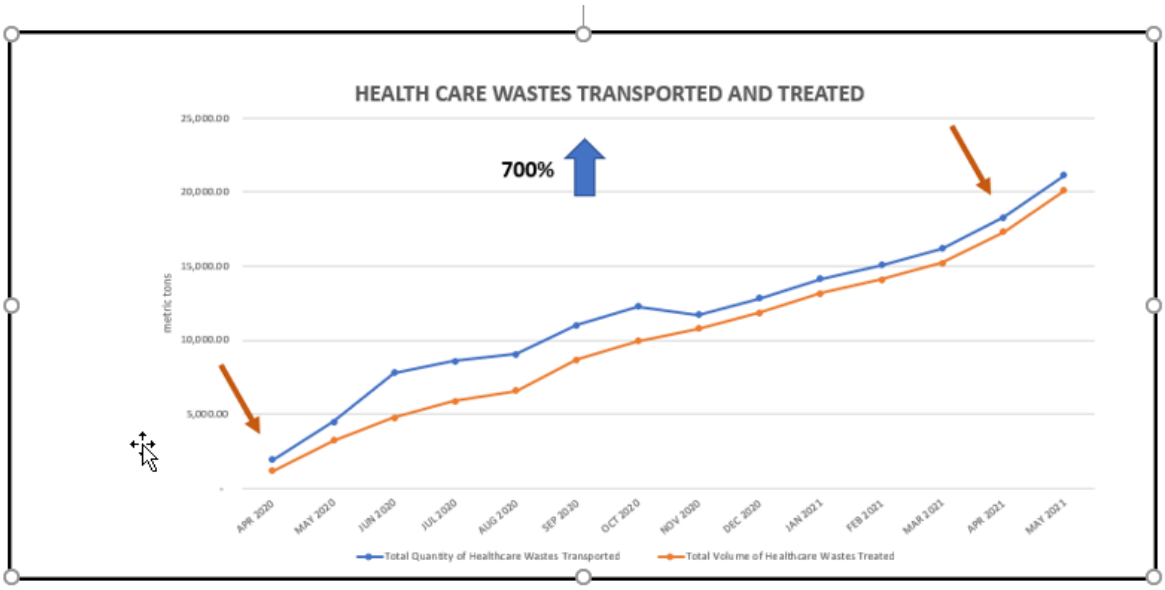


Figure 1. Quantity of Health Care Waste Transported and Treated (April 2020 to May 2021).

23. Several of these facilities apply non-burn waste treatment technologies such as autoclave, microwave and pyrolysis. A list of known treatment facilities adopting non-burn technologies is reported in Table 3 below. From the data, it may be seen that non-combustion facilities for which data are available may account for a total capacity of around 37,500 tons per year.

Table 3. List of some treatment facilities in the country with nonburn technologies

Name of TSD	Facility Address	Type of treatment (data from EMB or service provider)	Capacity per annum, tons per year
1. Eco Safe Hazmat Treatment Inc. (Category E)[1][1]	Lot 7 West Los Angeles Street, California Village, San Bartolome, Novaliches, Quezon City	Chemical treatment ? NaOH, H_2O_2	12,000
2. Integrated Waste Management, Inc.(Category B)	Lung Center of the Philippines Compound, Quezon Ave. Quezon City	Autoclave (steam at 121 C) ? 10 tons per day	3,000
3. Maya Med Waste Corporation (Category B)	WH#30 Toprite Industrial Compound, 1617P, Jacinto St. Sitio Malinis, Bagbaguin, Valenzuela City	Pyroclave ? 10 Mtons per day	3,000
4. Udenna Environmental Services, Inc. (Category B)	#004 Sta. Maria Drive, Sta. Maria Industrial Estate, Bagumbayan, Taguig City	Autoclave, 10 tons/day	3000

5. Clean Leaf Environmental Services (Category B)	Cutcut, Tarlac	Autoclave, 10 tons/day	3000
6. Total Organic Environmental Solutions, Inc., (Category B)	Brgy. Longos, Pulilan, Bulacan	Autoclave, 0.32ton/day	96
7. Safe Waste Inc. (Category B)	Mabalacat Pampanga	Autoclave ? 50 tons per day	15,000
8. Tarlac Provincial Hospital, Tarlac City (Category A)	Tarlac	Treating its own infectious waste. Autoclave, 0.285 ton per day	85.5
9. Metro Clark Waste Management Corporation (Category C)	Clark Special Economic Zone, Sub-zone D, Sitio Kalangitan, Cutcut II, Capas, Tarlac	Sanitary Landfill - cell capacity of 300,000 tons	N/A
10. Cleanway Environmental Management Solutions, Inc. (Category B)	Meridian Industrial Complex II, Brgy. Maguyam, Silang, Cavite	Hydroclave (steam at 121 deg Celsius) 15 tons	4500
12. Integrated Waste Management Inc. (Category B)	Brgy. Arguado, Trese Maritez City, Cavite	Autoclave (steam at 121 deg C) ? 20 tons per day	6000
		Pyrolysis ? 10 tons per day	3000

24. Healthcare wastes, by definition, include mercury-containing medical devices. Mercury can be found in medical devices such as thermometers and sphygmomanometers, as well as in lighting products used in the healthcare sector. It is also used in procedures conducted in laboratories, clinics, hospitals, dental clinics and other healthcare facilities. Based from the 2018, Philippine Mercury Inventory, mercury-containing wastes (D407) from the healthcare sector, clinics, laboratories, including household medical devices is estimated at 10.4 tons/yr (refer to Table 4) which is primarily composed of mercury-containing thermometers, sphygmomanometers, mercury reagents from laboratories, and mercury stockpile for dental procedures. Mercury from thermometers and other medical devices in household settings is estimated to be at 540 kg/yr. Weak technical capacities and fragmented policies, however, led to undisposed mercury stockpiles. From 2017 ? 2018, six health incidents involving mercury from mercury stockpiles and undisposed wastes were reported, affecting up to 600 individuals.

Table 4: 2018 Estimated Mercury Inventory from laboratories, clinics and other healthcare facilities in the Philippines

Source	2018 Estimated Volume (kg Hg/yr)

Thermometers (including from household)	1794
Sphygmomanometers	2593
Mercury from laboratories	3635
Mercury from dental clinics	2408
Mercury in lighting products from laboratories, clinics, and healthcare facilities	38
TOTAL	10468

Impact of the PPE usage during the pandemic on healthcare wastes generation

25. As of 2 June 2020, there were 13,699 positive COVID-19 patients in the Philippines. Out of these cases, 469 were hospitalized in intensive care units, 3025 in isolation beds, 968 in ward beds and 369 under mechanical ventilation, for an overall number of 4462 hospitalized patients. At that time, in the Philippine there were 13,012 beds entirely dedicated to COVID-19 in hospitals. The patients which are either quarantined at home or ?pending admission? are therefore 9237. Almost a year after (March 12, 2021), there were 611,618 total number of COVID-19 cases in the country, 52,012 of which remain active. This shows the massive progression of COVID-19 infection in the country. Vaccination started in the same month, and as of January 17, 2022 around 55million people have been fully vaccinated (64.9% of the population).

26. Based on the WHO Situation Report 93, since the peak of COVID-19 cases in early September 2021, throughout the Philippines, the daily number of reported COVID-19 cases has been decreasing steadily until 25 December 2021 when sudden and sharp increase of cases started. In week 2 (10 ? 15 Jan), a total of 203,461 cases were recorded, a 178% increase in cases compared to week 1 (3 ? 9 Jan) when 114,206 cases were recorded.

27. There was a declining trend of hospital bed and ICU bed utilization in Philippines until end of December 2021 when the number of occupied total COVID-19 hospital beds and ICU beds started to increase again simultaneously to the increase in positive cases due to ?Omicron? variant of the virus. As of 17 January 2022, a total of 3,242,374 confirmed COVID-19 cases and 52,929 deaths have been reported. The case fatality ratio is 1.6%. The ICU occupancy rate in the same period is 49%, with 3,479 ICU beds for COVID-19 cases whilst 48% of the 37,878 total hospital beds allocated for COVID-19 are occupied by COVID-19 patients. Based on the picture below, taken from the WHO situation report N?93, in the last 12 months (Jan 2021- Jan 2022) there was an average occupancy of beds for COVID-19 patients of around 15.500, whilst the average number of ICU beds occupied was around 1700 beds, for a total number of 17200 beds. Figure 2 shows the trends in the total number of total beds vs number of occupied beds.

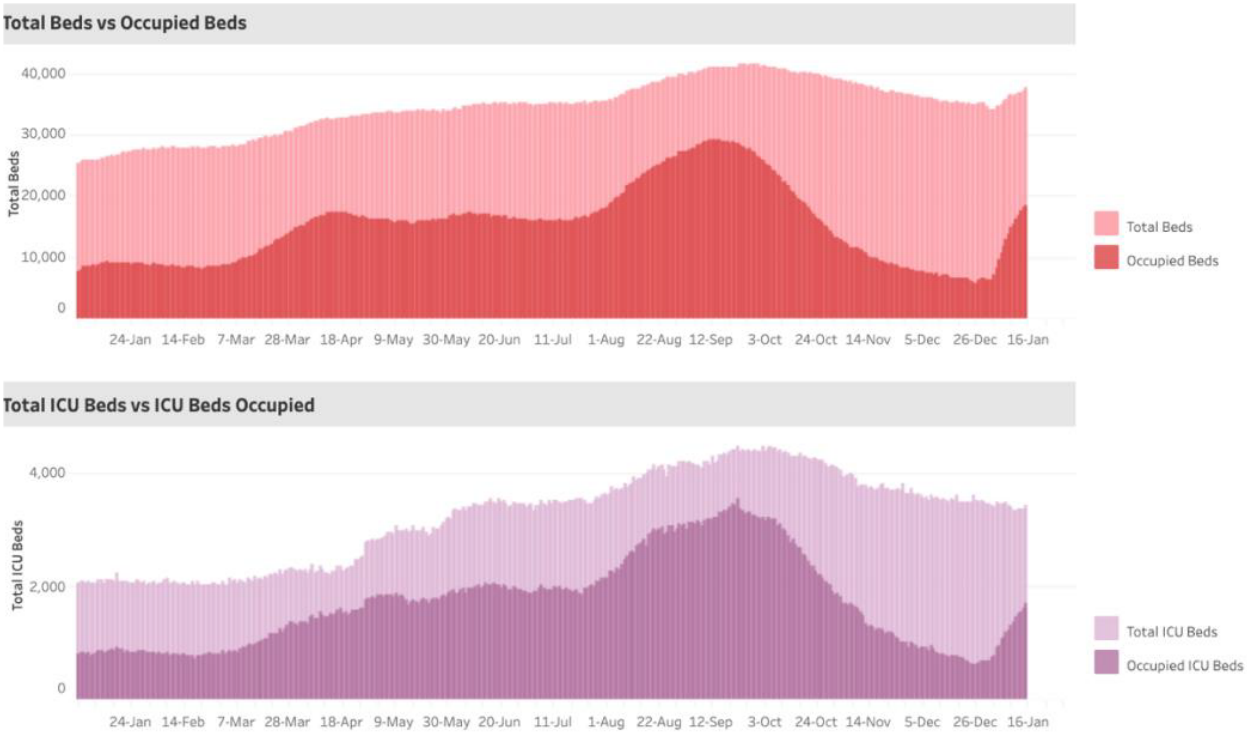


Figure 2. Trends of the number of total vs occupied beds (COVID-19 WHO Report 93)

28. Assuming that 3 medical staff per COVID-19 patient are needed on the average, it is possible to calculate the amount of waste PPE generated in health care facilities during the pandemic (Table 5). These waste should be considered mostly an addition to the health care waste generated in normal conditions.

Table 5. Estimation of the amount of PPE used and wasted during the COVID-19 pandemic in the Philippines:

Staff per patient per day	**Administration**	**Medical**
	1	3
Average number of hospitalized COVID-19 patients in 2021	17,200	

	Items per administrative staff per day	Items per medical staff per day	Items Per COVID -19 patient per day	Weight (g)	Weight per bed per day (g)	Total Items per day	weight per day (t)
Surgical Masks	2	3	11	6	66	189200	1.14
N95 mask		1	3	30	90	51600	1.55
shoe covers	2	2	8	6	48	137600	0.83
gowns		1	3	300	900	51600	15.48
coverals		1	3	200	600	51600	10.32
goggles		1	3	50	150	51600	2.58
gloves	2	2	8	15	120	137600	2.06
Total					1974		33.95

29. On this basis, around 34 tons of wasted PPEs are currently generated daily from hospital facilities during the COVID-19 emergency (1.97 kg/day/bed), an amount which should be considered mostly additional to the estimated 1.39 tons generated in normal situations. This lead to a total amount of waste generated by COVID-19 patients of around 3.36 kg per day for each patient This estimation in line with the estimation of 3.4 kg/day provided by the ADB based on a report drafted by Shi and Zheng (2020).

30. The major cities in the Philippines experienced scarcity in PPE supplies during the pandemic. The United States, through the Defense Threat Reduction Agency (DTRA) and in coordination with the U.S. Agency for International Development (USAID), distributed Php14.8 million ($300,000) worth of regionally-manufactured personal protective equipment (PPE) to the Philippine General Hospital (PGH) and COVID-19 treatment centers across the country. This brings the overall U.S. government assistance to the Philippines? COVID-19 response efforts to nearly Php 981 million ($19.8 million). The recipients were determined by a needs assessment based on pandemic infection rates, current PPE supply levels, and projected future needs.

31. As a response to the low PPE supply level, the member companies of the Confederation of Philippine Manufacturers of PPE (CPMP) added USD36 million investments to ramp up production of medical-grade personal protective equipment (PPE), such as medical-grade N88 face masks, N95 masks, coveralls, isolation gowns, gloves, head and shoe covers, to serve the local demand. Some companies repurposed their factories to make PPE such as non-woven fabric surgical masks and local production of PPE components. The initiative could generate 4000 jobs.

Surveys and interviews with Health Care Facilities and Treatment Storage and Disposal providers.

32. In the course of PPG, a survey, based on questionnaires and online meetings has been conducted with the representatives of healthcare facilities and TSDs who expressed their willingness to be partner and beneficiary of the project. The survey was intended to identify the needs, in term of capacity building and equipment, of the potential healthcare facilities as beneficiaries. The following healthcare facilities participated in the survey conducted:

? The Region II Trauma and Medical Center (R2TMC), located in AH 26, Magsaysay, Bayombong, Nueva Vizcaya; this is a Level III - Tertiary Hospital / CATEGORY B: NON-ECP, Government Hospital, with 300 beds out of which 150 dedicated to COVID-19 patients;

? The Southern Isabela Medical Center (SIMC), located in Zamora St. cor. Recto Avenue, Rosario, Santiago City; this is a Level III Government hospital, with 350 beds, out of which 176 dedicated to COVID-19 patients;

? The Cagayan Valley Medical Center (CVMC), Carimarines Sur, Tuguegarao City, Cagayan; this is a Tertiary Government Hospital, which increased the number of beds from 500 (in 2017) to 1000 (in 2019)

? The Eastern Visayas Medical Center (EVMC), located in Bagacay, Tacloban city, Leyte. This is a Tertiary Government Hospitals, with 1500 out of which 150 are dedicated to COVID-19 patients.

? The Allied Care Experts (ACE) Medical Center-Tacloban, whichis a Cat B Private facility with 100 beds, out of which 40 dedicated to COVID-19 patients, located in Brgy. 78, Marasbaras, Tacloban City

? The Quezon City General Hospital (QCGH), located in Seminary Road, EDSA, Bgy. Bahay Toro, Quezon City. This is also a tertiary Government hospital, with 250 beds out of which 107 are dedicated to COVID-19 patients.

? The Eastern Visayas Medical Center, which is a Level III - Tertiary Hospital located in Brgy. 93, Bagacay, Tacloban City, Leyte, a Government- DoH operated facility with 1500 beds out of which 150 dedicated to COVID-19 patients.

? The Quirino Memorial Medical Center (QMMC), which is a Level 3 government hospital, located in J.P Rizal cor. P. Tuazon Sts, Proj. 4, Quezon City

? The San Lazaro Hospital which is a Level III - Tertiary Hospital located in Sta. Ana, Manila, a Government- DOH operated facility with 500 beds out of which 143 dedicated to COVID-19 patients with a newly built 15-bed capacity ICU facility for COVID-19 patients. The stored mercury wastes consists of busted fluorescent lamps (BFLs).

? The Dr. Jose Fabella Memorial Hospital which is a Level III - Tertiary Hospital located in Sta. Cruz, Manila, a Government- DoH operated facility with 700 beds out of which 150 dedicated to COVID-19 patients. The Hg-containing stockpiles in the facility composed of busted fluorescent lamps, thermometer and sphygmomanometer.

Figure 3: Medical waste pile in a local hospital highlighting COVID-19 trash problem (https://www.eco-business.com/news/piles-of-medical-waste-in-philippine-hospital-highlight-countrys-covid-19-trash-problem/)

33. Results of the surveys and meetings with the healthcare facilities and waste treatment facilities revealed the following information:

Increase in waste generation due to COVID-19: Although the data data collected from hospitals surveyed during the PPG revealed a large variability of the rate of generation of infectious waste (M501) per bed due to inconsistencies in the methodology adopted to record waste generation, the survey revealed that that the generation of infectious waste increased due to the increasing cases of COVID-19 infection, with increases ranging from 12% to 194% (see Table 6). The only decrease observed was likely due to an incomplete recording of the generation of infectious waste or non-accounting of wastes that are kept in the septic vaults, a common practice in hospitals located in Region II.

Table 6 Generation of infectious (M501) waste before and during the COVID-19 pandemic for the surveyed hospitals

Facility name	Beds	H501 waste generation (t/yr) by year				kg/bed pre-COVID-19	kg/bed post COVID-19	Increase (%)
		2017	2018	2019	2020			

QUIRINO MEMORIAL MEDICAL CENTER	500		504	894	902	1.40	1.80	29%
QUEZON CITY GENERAL HOSPITAL	500			191	447	0.38	0.89	134%
DR. JOSE FABELLA MEMORIAL HOSPITAL	700	150			200	0.21	0.29	33%
SAN LAZARO HOSPITAL	500	177			521	0.35	1.04	194%
ALLIED CARE EXPERTS (ACE) MEDICAL CENTER-TACLOBAN	500			20.46	53.47	0.04	0.11	161%
EASTERN VISAYAS MEDICAL CENTER (EVMC)	500			522	583	1.04	1.17	12%
SOUTHERN ISABELA MEDICAL CENTER[1]	350	45	40	180	50	0.25	0.14	**-43%**
REGION II TRAUMA AND MEDICAL CENTER	500			160	350	0.32	0.70	119%
CAGAYAN VALLEY MEDICAL CENTER (CVMC)	300	17			37	0.06	0.12	118%

Waste management and technologies: Three (3) of the facilities surveyed declared they have already an autoclave for the pre-treatment of generated M501 wastes:

? Region II Trauma and Medical Center uses autoclave and disinfection. Autoclave capacity is 22 kg per cycle of one hour 30 minutes, and they perform 5 to 6 cycles per day (equivalent to 110 to 132 kg/day of autoclavable infectious waste). They spray the waste with chlorinated disinfectant before autoclaving, at a rate of about 3 liters of chlorinated disinfectant each cycle of autoclaving (around 15 to 18 liters per day). The autoclave is 20 years old (purchased in 2001), and very likely, due also to the intensive use of hypochlorite, is not in the best condition.

? In the Southern Isabela Medical Center there is a more recent and larger autoclave. The autoclave is 100 kg/cycle per hour, and the autoclave is used for treating face shield, face mask, napkins, diapers,

etc. After treatment, the wastes are considered as general waste. In spite of the size, the autoclave capacity is considered not enough for the hospital needs and the facility plans to purchase a second autoclave of the same size. The consumption of hypochlorite is in the range of 5500 to 6600 liter per year (15 to 18 liters/day). After autoclaving, waste is put in containers and collected each other day by the LGU.

? The Cagayan Valley Medical Center also has an autoclave, purchased before the onset of the COVID-19 pandemic. The management opted to procure additional autoclave to minimize the volume of the generated waste and to enter into an agreement/contract with a third party to continuously haul their wastes so as not to utilize the septic vaults. For a second autoclave, a budget of 15 to 20 million pesos is envisaged.

? Both EVMC and QCGH declared that they do not have pre-treatment technologies, although the former mentioned that ?plan for additional purchase of treatment equipment, carts, bins and additional man power is needed to accommodate the increasing infectious waste produced by the hospital. Integrate recycling process or technology to minimize waste produced and possibly be a source of income.? During the stakeholder engagement visit last March 3, 2022 however, EVMC is treating its own wastes, without Category A TSD registration and its primary concern is the lack of disposal facility (sanitary landfill) in Tacloban.

? ACE relies on an on-site autoclave and on a 3rd party supplier (PASSI and Cleanaway under a partnership) for the disposal of treated hazardous waste.

Figure 4: Storage facility and autoclave system in one partner hospital

Use of chlorinated disinfectant. Two hospitals employs an intensive use of chlorinated disinfectant for the general disinfection of waste while another declared that they use hypochlorite only for disinfecting instrument, and that the excess chlorine is thrown in the toilet citing the availability of a wastewater treatment system. This information is quite alarming as it seems there is rather low knowledge on the proper use of chlorine as a disinfectant. This would definitely impact final disposal of the wastes, especially, if they end up in open dumpsites.

Use of mercury equipment and management of mercury waste. All the hospital surveyed declared that they already phased out mercury containing devices. Only in one case, they declared that end of

life mercury devices have been stored in one dedicated septic tank. In at least one case, it has been reported that mercury sphygmomanometers containing mercury are sent to junk shops.

Training and Capacity building: Two (2) out of seven (7) hospitals surveyed responded that they need training on technical specification (including at procurement stage) reliability, calibration, maintenance and end of life treatment of non-mercury healthcare devices. Similarly, 2 out of 7 hospitals reported they don?t train staff on HCW management on regular basis and there is no refresher training provided. One hospital declared explicitly that they need training program for hospital staff and and janitorial services with training for handling hazardous wastes.

Equipment and technology needs. The following needs were reported by the interviewed facilities:

? PPEs, improvement of equipment for collection/segregation, expansion of MRF, additional septic vault, and others

? additional autoclave or waste treater machine to minimize volume of generated waste; poor after sale services after the warranty period prompting the facilities to cease the use of the autoclave/pyroclave equipment

? pre-treatment equipment, treatment equipment, carts, bins, etc.

? improvement of Materials Recovery Facility (MRF)

34. Surveys and follow-up meetings with the following TSDs were also held to fully assess current waste management situation and challenges faced on this subject by the facilities:

? ACE, Brgy. 78, Marasbaras, Tacloban City. This is a CAT B Treatment facility with a thermal treatment facility (Pyroclave, ECODAS) of the capacity of 25kg/hr for the pre-treatment of waste.

? Cleanaway Philippines Inc., located in LIDE, Brgy. Libertad, Isabel, Leyte, This is also a Cat. B TSD, with a treatment capacity up to 182.5 MT/day ensured through landfilling and temporary storage of HCW.

? Metro Clark Waste Management Corporation, a Category C TSD facility located in Capas Tarlac, with a capacity of 300,000 tons for its current sanitary landfill. MCWM received in 2021 around 20,126 tons of medical waste (M501) from healthcare institutions. MCWM is the only Category 4 landfill in the Philippines that can accept treated M501 wastes.

? Envirocare Management Precision Inc. is a transporter and a registered TSD facility for D407 wastes based in Region 3. It hauls out M501 wastes, about 3 tons per day, and brought them to its partner TSD facilities in NCR, Region 3 and Region 4. It collects BFLs from primary and secondary public schools for treatment via the Bulb Eater technology.

? Servo Treat Philippines, Inc located in Pangasinan, Region 1, a category B (M501) and Category E (D407) TSD facility using autoclave and bulb eater technologies respectively. Capacity of 3,000 kg/day for M501 wastes.

? Integrated Waste Management, Inc. (IWMI), a category B TSD facility based in Region 4A utilizing autoclave and pyrolyzer for M501 wastes, receives about 20,000 kgs M501 wastes per day

? Pollution Abatement Solutions System Inc. (PASSI) is a TSD facility located in Region 7 with a capacity of 8000 kgs per day using autoclave technology. It collects wastes from Region and bring them to Cebu for treatment and disposal. It has other facilities in Region IVB (Palawan). It is finalizing its Joint Venture Agreement with the City of Tacloban for a treatment facility and sanitary landfill for treated hazardous wastes including M501 wastes.

35. The following information were collated from the responses in the survey and in the follow-up meetings:

Treatment capacity and technologies: Except for landfilling, the treatment capacity is, in general, insufficient to address the amount of healthcare wastes generated. Some of the TSDs are in-house licensed partners of healthcare facilities. Others like Cleanaway only perform temporary storage services. PASSI has the highest treatment capacity and the highest transportation and storage standards among the TSD interviewed in Region 8 but brings the hauled wastes in Cebu for treatment and final disposal. PASSI was the only transporter that uses refrigerated vans in transporting health care wastes. Other transporters use closed vans. The greatest challenge in Region 8 is the lack of sanitary landfill that can accept treated wastes.

In Region 2 (Cagayan Valley), there is no TSD facility for healthcare wastes. All engaged hospitals have their wastes hauled out and treated in Region 3 or NCR. These wastes are temporarily stored in septic vaults prior to the scheduled hauling (monthly, quarterly or annually), or when the septic vault is full. The treated wastes are then disposed in MCWM in Capas, Tarlac (Region 3).

For the National Capital Region, the engaged hospitals in have their wastes hauled out and treated by Servo Treat in Region 1 and IWMI in Region 4 for the Cities of Quezon and Manila respectively. These wastes are hauled and transported daily. The treated wastes are disposed in MCWM

There are 273 sanitary landfills in the Philippines and most of them are LGU landfills with Category Levels 1 to 3 such as the Ilagan Sanitary Landfill in Isabela and Tacloban City Sanitary Landfill in Leyte, which cannot accept treated M501 wastes and wastes generated from other regions.

The above scenario clearly shows several gaps in the infrastructures for proper healthcare wastes management.

Investment plans. The TSD which are not equipped with treatment equipment plans to purchase a technology for the treatment of HCW in the near future, or to replace their actual equipment (for instance the Pyroclave unit) with other safer and more effective equipment.

COVID-related household healthcare waste (C-HHW)

36. One other issue that represents an even greater challenge is the generation and management of COVID- household healthcare waste (C-HHW) that is even not fully monitored. In Asia, among countries with confirmed Covid-19 cases, Philippines rank 10th in terms of medical waste generation as of July 31,2020. In July 31, 2020 the estimated use of face mask for the Philippines was around 49 millions per day, which translates to 353 tons per day .

37. There is only one company in the Philippines that manufacture face masks with a capacity of 1.6 M masks per month (increased to 4 million per month during the pandemic). The current supply of face masks is, obviously, not sufficient to cater to the needs of both hospitals and households. Many households resort to the use of reusable or washable masks which may not be sufficient to prevent

spread of infection or as protection from infection. There are several small manufacturers in the country (even households) that produce these reusable/washable masks. While the use of these reusable/washable masks minimizes the generation of wastes from single-use PPEs, it is important that proper materials are used to ensure protection.

38. Considering the amount of wastes generated by households during this pandemic period, several challenges on the generation and management of C-HHW remain:

? The quantity and composition of C-HHW is unclear. No specific recommendation on which PPE to be used by the general public, was issued by the government or by international agencies, therefore people are using a number of different options, some of them are re-usable whilst others should be used for no more than few hours. Materials range from polymeric fibers (N95 and surgical masks) to fabric of home-made masks. How this is impacting the waste manageme1nt system of household waste is unknown. At the beginning of the pandemic, this was also dictated by the limited availability of face masks and the cost associated to them.

? As of March 2020, the recommendation issued by DOH was that people should use face mask only if they have symptoms (https://www.doh.gov.ph/node/19947) or if taking care of affected persons in line with the WHO recommendations. The WHO recommendation was based on the approach that non-symptomatic persons are not infectious, which proved subsequently incorrect, therefore most government worldwide, including Philippine (IATF) subsequently issued rules obliging to wear a face mask when in public places, including outdoor. More specifically, the IATF rules says that ?for areas placed under Extended Community Quarantine, the IATF hereby adopts the policy of mandatory wearing by all residents of face masks, ear loop masks, indigenous, reusable or do-it yourself masks, face shields, handkerchiefs, or such other protective equipment that can effectively lessen the transmission of COVID-19?. This appears quite a logic recommendation considering the cost of some of the certified mask, and the level of poverty of some population groups.

? Apparently, there is no system in place for the management of the C-HHW generated by quarantined people or by COVID-affected people at home.

? One of the indications provided by the government or international agencies is to ?pre-treat? household generated waste with 0.5% chlorine disinfectant solution. This recommendation, although good from the safety viewpoint, could have as a consequence a significant release of chlorinated waste in the waste management stream, where the risk of open burning of waste (with a significant generation of PCDD/F) may exist.

? At the same time, there is a large consensus that PPEs policies are useful only if integrated with washing hands and keeping surfaces clean. That entail the use of a significant amount of chemicals (from alcoholic detergents to bleach) which in turn may impact the waste management system and the environment

Management of Mercury wastes in the healthcare sector

39. In 1997, the DENR issued Administrative Order 38, or the Chemical Control Order for Mercury and Mercury Compounds, in compliance with Republic Act 6969, or the Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990. The said Chemical Control Order aims to establish limitations of the use of mercury and mercury containing substances, control and regulate the

disposal of mercury contaminated wastes, and reduce the hazards to environment and health caused by the exposure to and handling of mercury. Mercury compounds are also included in the Philippine Priority Chemical List, issued by the DENR, through the EMB. The PCL is a list of existing and new chemicals that were determined to potentially pose unreasonable risk to public health and safety, and of course, the environment. The DENR has also banned mercury use in mineral processing in the small-scale mining industry, an implementation of Executive Order No.79 which President Benigno Aquino III signed in July 2012.

40. In 2008, or mercury in the healthcare sector, DAO 2008-0021 otherwise known as ?Gradual Phase-out of Mercury in All Philippine Health Care Facilities and Institutions? was issued by the DENR. This administrative order established that:

? All hospitals shall immediately discontinue to distribution of mercury thermometers

? All hospitals should follow the prescribed guidelines for phase-out indicate in the administrative order

? All new healthcare facilities applying for License to Operate must submit an inventory of all mercury-containing devices used in their facilities with a corresponding minimization plan

41. An inventory of mercury devices was only required for new healthcare facilities. That obviously prevented the development of a comprehensive inventory. An assessment made on the use and disposal of mercury thermometers resulted in 2,635,308 mercury thermometers in use and 131,765 thermometers broken per year. In 2018, the Philippine Mercury Inventory Report estimated the amount of mercury wastes from the healthcare devices (including those from households) to be around 10.4 tons/year. More recently, based on a survey carried out under a Japan-ASEAN Integration Fund (JAIF) project endorsed by the Association of Southeast Asian Nations (ASEAN) Working Group on Chemicals and Waste and the ASEAN, it was reported that the number of mercury devices in the hospitals (thermometers and sphygmomanometers) has largely decreased since the promulgation of DAO 2008-0021. The report also flagged the issue of the untraceable mercury-containing devices stockpiles from the 2018 inventory.

42. The number of mercury devices disposed of decreased from 2010 to 2020, most likely because of the reduced number of such devices purchased and used in the hospitals. Around 500 health care facilities which responded to the JAIF survey reported an overall disposal of only 5764 thermometers, 1998 desk-type sphygmomanometers and 1052 standing sphygmomanometers. In 37% of the cases, such equipment were stored in temporary storage facilities in hospital areas; 48.3% of these were reported to have been disposed by DENR accredited facilities while around 10% these equipment were sold to third party buyers. The remaining quantities were either in temporary storage facilities outside the hospitals (13%), or disposed with municipal waste (19.3%)

43. As of 31 December 2021, the country has 45 TSD facilities (**Annex I**) accredited and qualified to handle mercury and mercury wastes. A great majority (88%) is located in the island of Luzon. The common technologies being used by these facilities to address mercury wastes are Bulb Eaters? for busted fluorescent lamps (BFLs) and the proprietary Dolocrete? process for non-elemental mercury. Other than these two technologies, no other treatment type of mercury wastes is known. The project

aims to fully address this gap ensuring that available infrastructures should be assessed and upgraded to ensure that environmentally-sound approach on the handling of mercury wastes is observed.

ASSOCIATED BASELINE PROGRAMS

Component 1. Unintentionally-produced POPs release reduction in the healthcare waste sector

44. As a Party to the SC on POPs, the Philippines is obliged to comply with the targets designed to reduce or eliminate releases from intentional and unintentional production of POPs. The Government of the Philippines, through the Department of Environment and Natural Resources (DENR), developed a National Implementation Plan (NIP) in 2006, which outlined programs and actions to achieve its obligations. The NIP has been updated in 2014 to address the changes in the obligations to the SC, review the action plans previously developed and the achievements so far, and formulate new action plans that would address the additional obligations. One of the priorities stipulated in the action plans is the management of unintentionally-produced POPs (dioxins and furans) from uncontrolled burning of wastes (part of which is healthcare wastes) which contributes 35% of the total dioxin inventory.

45. In the Philippines, there are three major laws that relate to the management of dioxins and furans, namely, Republic Act 8749 otherwise known as the Philippine Clean Air Act of 1999; Republic Act 6969 or the Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990; and Republic Act 9003 known as the Ecological Solid Wastes Management Act of 2000. On the management of hazardous and infectious wastes, the regulating agencies are the DENR-EMB and the DOH. The Joint Circular (2005) of the DENR and DOH states that medical wastes which include infectious waste within the hospital/health care wastes premises are the within the mandate of the DOH, while outside the premises, it becomes the mandate of the DENR. The DOH is in charge in the issuance and renewal of licenses of hospitals and other health care facilities and has the responsibility to guide HCFs in proper handling and management of health care wastes.

46. DENR Administrative Order, DAO 2013-22, provides the ?Procedural Manual on Hazardous Wastes Management? and for healthcare wastes in particular, regulation is done through the Joint DENR ? DOH Administrative Order No. 02 Series of 2005: ?Policies and Guidelines on effective and proper handling, collection, transport, treatment, storage, and disposal of health care wastes?.

47. The DOH also issued a national policy on the strict implementation of waste segregation at the source (within the hospital) through waste classification and color coding, proper in-house collection and storage, treatment of infectious and hazardous wastes prior to disposal. Hospitals are required to create HCWM Committee that will oversee the implementation of HCWM plans and programs. In the application or renewal of hospitals? license, the facility is required to submit an approved work plan and financial plan to ensure that proper HWM program is being implemented. Prior to issuance of the hospitals? license, such plan is being validated by the DOH licensing bureau. The HCWM plan components are: procurement of supplies on color coded plastic bags, container/waste bins, waste trolleys/carts, chemical disinfectants, PPEs for health care waste

management personnel, HCW training, IEC development and dissemination, and budget for treatment of infectious wastes through outsourcing (hazardous waste service providers). In early 2019, the WHO granted assistance to DOH for the updating of HCWM manual which was approved and signed last April 2020. With the onset of the pandemic, the DOH issued interim guidelines on the proper management of COVID-19 related wastes to guide waste generators and service providers in the implementation of HCWM.

48. The DOH is primarily responsible in providing the budget for the waste management needs of DOH-run hospitals all over the country. In 2015, the DOH requested funds through general appropriations act, for the establishment of treatment facilities (sterilization machine) to be distributed to all DOH retained hospitals. The project failed due to the bureaucratic procedures required in accessing the funds.

49. In terms of COVID-19 response, the country?s Inter-agency Task Force (IATF) for the Management of Emerging Infectious Disease (IATF) developed an immediate COVID-19 national recovery plan for 2020 ? 2021. The ?We Recover as One? plan anticipates a new normal where managing pollution and the sustainable use of natural resources vis-a-vis addressing the threat of future pandemics under a changing climate will become even more challenging. Under the plan, existing waste management facilities are also expected to be overwhelmed by huge volume of wastes from healthcare facilities and households. The new normal will require a combination of strengthened, scaled up, and innovative actions and solutions to curb the elevated environmental, climate, and health risks posed by COVID-19. As such, the plan prioritizes streamlining the management of healthcare and infectious wastes, especially at the community and household levels. Actions include: (1) Ensuring compliance of healthcare facilities and treatment technologies with the standards for hazardous waste management; (2) Modernizing and increasing the number of TSD facilities for hazardous healthcare wastes; (3) Improving disposal of healthcare wastes at the household or barangay level; and (4) Supporting ancillary remedial actions to improve environmental health and mitigate climate change. In the new normal, the plan also puts a premium on actions geared toward supporting MSMEs, being among the most affected by the COVID-19 crisis, in capacity and resilience ? building.

50. In terms of infrastructures for waste management, it is evident from the data collected that the current resources are not fully capable to deal with the increasing amount of health care waste generated. Thus, as the COVID-19 pandemic continues, DENR-EMB has considered in the national budget the provision of facilities to LGUs to improve the collection of COVID-19 related healthcare waste from quarantine facilities, testing facilities, and vaccination sites located in remote areas and small generators that are not serviced by a Transport, Storage, and Disposal facility. he total project cost is One Hundred Eighty-One Million Six Hundred Thousand Pesos (Php 181,600,000.00).

51. DENR EMB also targets the building of 300 SLFs by the end of 2022 and close coordination with LGUs on this plan is being undertaken. Special cells for healthcare wastes is being proposed, if resources could accommodate this requirement. The cities of Tacloban in Region 8 and Ilagan in Region 2, in a consultative meeting, have indicated their plans to appropriate additional budget for the building of additional cells in their existing sanitary landfills to accommodate a special cell that could receive healthcare wastes. Likewise, some TSD facilities in the Philippines, including Metro Clark

Waste Management Corporation based in Region 3 and Integrated waste Management Inc based in Region 4, have programmed investments on the building of additional landfill sites that can accommodate M501 wastes. Indicative co-financing provided by the LGUs and TSDs supports the current proposal.

52. To address the needs of local government units (LGUs) and small hospitals, the Development Bank of the Philippines (DBP) recently launched the Sustainable Waste-management for Enhanced Environmental Protection ?SWEEP? financing framework. The SWEEP intends to address the challenges posed by the lack of facilities for the environmentally sound disposal of waste, with an estimated investment requirement of around Php 10 Billion for SHWM exclusive of WTE project potentials. Eligible projects under SWEEP are : (i) Project Preparation Activities for LGUs; (ii) Development, rehabilitation, expansion and upgrading of solid and hazardous waste facility; (iii) Collection and transportation of solid and hazardous waste; (iv) Acquisition of solid and hazardous machineries and equipment and; (v) Other solid and hazardous waste management related projects. The loan package is considered a good baseline programme to the current proposal contributing to the sound assessment of the needs and how the financing program cab be structured to benefit the stakeholders.

53 The UNIDO COVID-19 Response in the Philippines is aligned with the government?s plans and programs in the ?We Recover as One? document, and covers the following areas:

? Strengthening healthcare, safety systems and capacities to respond to COVID 19 through productive activities

? Support to recovery of the economy through micro-, small, and m-sized enterprises (MSME) growth and resilience

? Socio-economic impact assessment and industrial policy advice

54. In order to facilitate these efforts in the Philippines, UNIDO, with support from the Department of Trade and Industry, has convened a multi-stakeholder working group composed of representatives from various government agencies, private sector industry players, and other development partners. UNIDO is also leading the Small and Medium Enterprises (SME) Subgroup of the United Nations COVID-19 Working Group on Socio-Economic Response guided by the UN Country Team in the Philippines.

55. It is apparent that several programs and stakeholders are contributing to the envisaged objective of the current project. However, the various stakeholders' consultations conducted during the preparatory phase to outline the baseline scenario of healthcare wastes management in the country highlighted the alarming gaps and challenges in this sector. It is aimed that the current proposal will provide a more cohesive and comprehensive solution to the issue, including the provision of environmentally-sound technologies and measures to address the issue of healthcare wastes management.

Component 2: Management of mercury, mercury-added products (MAPs), and mercury wastes in the healthcare sector according to the Minamata Convention on Mercury and the Philippine National Action Plan for MAPs phase-out

56. The Philippine government has ratified the Minamata Convention on Mercury on July 8, 2020 after its signature in 2013. The country's National Action Plan (NAP) for the phase-out of Mercury-Added Products (MAPs) and the management of the associated mercury-containing wastes was adopted by the Philippines with the support of the government of Switzerland and UNIDO in an effort to protect public health and the environment from the adverse impacts of mercury pollution. The NAP is a product a collaborative process amongst different government agencies providing a detailed 5-year full implementation document of the activities and actions that the government is planning to take to address the environmentally sound management of mercury-containing products with a life-cycle approach in accordance with the Minamata and Basel Conventions.

57. The management of mercury, mercury-added products (MAPs), and the associated mercury wastes in the country is regulated by different agencies. Each agency has their own mandate and specific implementation procedures. The Department of Environment and Natural Resources (DENR) is regulating Mercury through a Chemical Control Order (DAO 1997-38). There are also existing policies and ordinances issued by different government agencies with regards to management of mercury.

58. The DENR has developed a National Action Plan on Mercury and Mercury-containing Wastes Management in 2010. It is also regulating mercury and mercury compounds through Chemical Control Order, DAO 2019 ? 20, while DOH implements Department Order No. 2017-0302 for the ?Final Disposal of Temporarily Stored On-Site Mercury Wastes and Mercury Containing Devices?; and DOH AO 2008 ? 0021 for the ?Gradual Phase-out of Mercury in All Philippine Healthcare Facilities and Institutions?. In conjunction, the Department of Education (DepEd) issued Memorandum Order No. 2017, s. 2017 for the Final Disposal of Temporary Stored On-site Mercury Wastes and Mercury-containing Devices from school clinics and laboratories. In 2020, DOH Administrative Order 2020 ? 0020 provided the phaseout plan for mercury use in dental restorative procedures.

59. In 2017, the DENR-EMB Online Permitting and Monitoring System (OPMS) was established for the Chemical Control Order (CCO) for Mercury and Mercury Compounds and other regulated chemicals under RA 6969. This provides easier access to data, and exchange thereof between the EMB regional offices and the EMB central office. Further enhancement of the OPMS is being planned by the Bureau to include further parameters for tracking of chemicals and wastes.

60. Department of Science and Technology (DOST), represented by ITDI, is a member of the Inter-Agency Technical Working Group (IATWG) for the preparation of the National Action Plan (NAP) for Mercury. The DOST-Philippine Council for Industry, Energy and Emerging Technology Research and Development PCIEERD) as support for the action plan, had included Mercury in its Call for Proposal for 2021-2022 under strategic priority 3 specifically to support the national phase-out plan for Mercury added products (MAPs) with the following objective - to develop a research and development plan on how to address issues in the Minamata Convention in terms of science, technology and innovation focusing on the following: a. Development/Updating of mercury standards b. Research to address wastes from amalgamation of jewelers c. Mercury material flow study (Material balance, LCA) d. Alternatives / product development

61. Through the Swiss-funded UNIDO project ?Promoting Ratification and Early Implementation of the Minamata Convention on Mercury, a National Action Plan for the Phaseout of Mercury-added Products (MAPs) and the Management of the Associated Mercury-containing Wastes was developed. This work also facilitated the establishment of the Inter-agency Technical Working Group on Mercury (Kg-IATWG) under the Inter-agency Committee on Environmental Health (IACEH) led by the Department of Health and the Department of Environment and Natural Resources.

62. A group of experts from Japan was dispatched to conduct studies for project development under external funding mechanisms in Indonesia and Vietnam for mercury-related technical assistance in coal-fired power plants (2019), and in Indonesia and the Philippines for technical assistance in Environmentally Sound Management of waste containing mercury (2015). The expert mission resulted to the project entitled "Development of Capacity for the Substitution and ESM of mercury-containing medical devices" with total project cost of PhP 24.7M and DENR as the implementing agency. The project is implemented nationwide with the following expected output: (i) inventory on the use, substitution, storage, collection and disposal of mercury containing medial devices in the country; (ii) guideline on the ESM of mercury waste from medical measuring devices and; (iii) Dissemination and awareness raising by sharing of the lesson learned in two target countries among a larger stakeholder in the ASEAN member state.

63. The Ministry of Environment-Japan (MoEJ) has been active in supporting the Philippines on advancing initiatives focusing on mercury-waste management through Philippines-Japan technical cooperation for mercury management. This support includes the development of a mercury waste management project and providing a training program for mercury material flow (MMF) analysis. For this project, MOEJ has committed to the provision of expertise and resources to support the Philippines in the development of its own mercury material flow, develop a legal framework for the management of MAPs and facilitate technical knowledge sharing.

64. Complementarily, Nomura-Kohsan Ltd. Co. supports the implementation of the Minamata convention for Mercury in the Philippines through its Business-to-Business cooperation initiative. The Japanese company has been an expert in the work areas pertaining to a wide range of mercury waste-related activities but is not just limited to recycling. In early 2018, Nomura Kohsan Co., Ltd has signed a new Memorandum of Understanding (MoU) with The United Nations Industrial Development Organization (UNIDO). Some of the private sector technical cooperation which they have supported includes Project Establishing a Recycle System for Used Fluorescent Lamps (2014) and The project of establishing mercury wastes recycling system for Cebu, the Philippines (2), and Project of establishing mercury waste treatment and processing scheme in the Philippines (2016). As a partner for this project, Nomura-Kohsan Ltd. Co. will share their expertise and our experience regarding the management of thermometers and sphygmomanometers (MCMMDs)generated from medical institutions in Japan. This would include treatment of MCMMDs including stabilization mercury process, and best practices on packing, collecting and transporting MCMMDs in an environmentally-sound manner.

65. The policies and programs mentioned above supports the National Action Plan for the phase-out of Mercury-Added Products (MAPs) and the management of the associated mercury-containing waste.

The current project will contribute to these initiative to ensure detailed assessment of mercury inventory in the country and ensure sound disposal of mercury wastes.

Component 3: Capacity building and awareness raising

66. There are several programs and projects in the Philippines that address the need for capacity building on the issue of POPs and Hg. The DENR, particularly, sets aside part of its national budget to ensure continuing education for both its staff and the general public on the issue of chemicals management. Since 2017, the Department of Health has been implementing a chemical safety program for heavy metals including mercury. A Chemical Risk Assessment Training Program is currently being organized. However, relating emission of U-POPs to healthcare wastes management still seem to be challenging topic due mainly to several stakeholders involved. At the same time, the serious health and environmental concerns around mercury and mercury wastes also seem to be challenged in gaining traction owing to the chronic and sometimes non-specific nature of mercury poisoning.

67. As mentioned above, one of the procedures in place to ensure continuing education in the healthcare waste sector with regard waste management is the need to program funds for HCW training, IEC development and dissemination when hospitals apply for license renewal. The DOH regional offices likewise have their own annual budget for the capacity development of LGUs sanitation personnel and hospitals? Pollution Control Officers, Chief of Hospital, Engineering Department, Infectious Control Officer on health care waste management, within their respective regional area.

68. The GEF projects, GEF 10349 ?Demonstration of production phase-out of mercury-containing medical thermometers and sphygmomanometers and promoting the application of mercury-free alternatives in medical facilities in China? and the global project GEF 10716 ?Phasing out mercury measuring devices in healthcare? also provides the baseline, particularly on mercury management, for the current project. It is envisaged that coordination with the agencies and entities involved on these projects will be undertaken, especially on the capacity building and knowledge management efforts of the current project.

69. The global project GEF 1802 ?Demonstrating and Promoting Best Techniques and Practices for Reducing Healthcare Waste to Avoid Environmental Releases of Dioxins and Mercury? with Philippines as one participating country, contributed to the training on mercury devices and the installation of two non combustion technologies for the pre-treatment of HCW, which, however, were procured only after project closure. The design of the current proposal benefitted from the lessons learned from this project.

70. The current project aims to coordinate with ongoing global and national efforts and further strengthen the delivery of capacity building and awareness raising activities relative to the management of healthcare wastes. As management of wastes would require behavioral change, probably more than technical intervention, the current project aims to integrate approaches that may lead to such outcome.

C. THE PROPOSED ALTERNATIVE SCENARIO WITH A BRIEF DESCRIPTION OF EXPECTED OUTCOMES AND COMPONENTS OF THE PROJECT

Theory of Change (TOC)

The strategy to address, in a sustainable way, the issue of the healthcare waste prevention and management, as well as the associated generation of UPOPs, chlorinated pollutants and Hg generated during the improper management of such waste, is summarized in the Theory of Change provided in Figure 5.

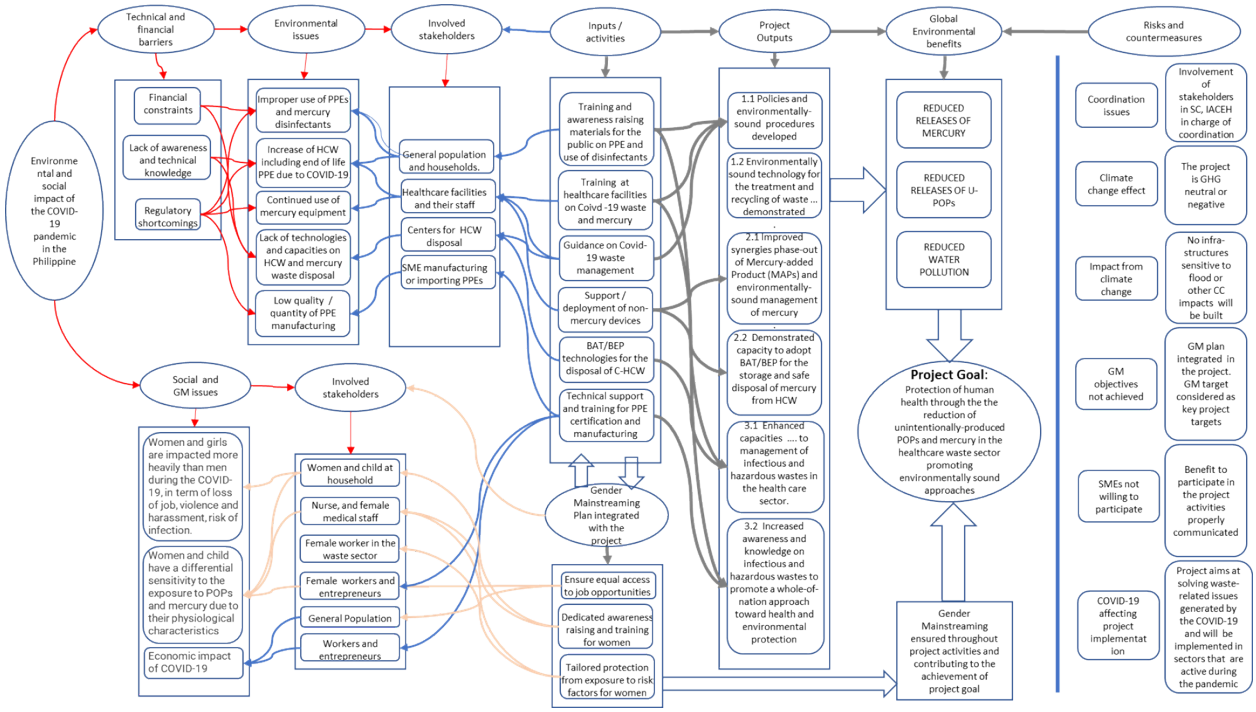


Figure 5 Theory of Change Diagram of the project

71. The projects has a three-pronged strategy: (i) introduce an environmentally-sound management of healthcare wastes with special focus on U-POPs and Hg management associated with pandemic events; (ii) establish systems which can be replicated and scaled up to help ensure sustainability and promotion of a sustainable approach (e,g, lifecycle of PPEs used during epidemic outbreaks) and; (iii) highlight the pivotal role of women in this strategy, both in their role in civil society and as medical staff and nurses in healthcare facilities , being at the same time the population group most exposed to the risk and the ones which are in the frontlines of fighting the virus at home and while in duty

72. While there are certain programs in the country that relates to the management of healthcare wastes, the current management of such wastes is still fraught with many challenges which was further exacerbated by the current pandemic. The issue of U-POPs generation is far from being understood by

potential generators, especially the medical and waste management sector. Most wastes, including hospital wastes, is dumped together with municipal wastes especially in areas with no access to service providers. The current practice of chemical disinfection is also foreseen as contributory to releases of toxic dioxins when burned. The project aims to address these gaps and provide necessary solutions.

73. Although the pandemic is affecting the whole society, is demonstrated that women, due to their role in the society in the Philippine, are more exposed to the social impact of the pandemic: they are more at risk of losing their jobs as in most cases they have to take care of child and elderly in the family; they are exposed to an increase risk of domestic violence due to the lockdown requirements; they take care of house cleaning, including management of waste; they represent the majority of the non-medical staff in the hospitals. For the above reason, a specific approach to ensure gender mainstreaming will be integrated in the project, and GM objectives will be considered at the same level of the main project objectives. This is also depicted in the TOC diagram in Figure 3.

74. Whilst the COVID-19 pandemic is exacerbating (red arrows in the TOC) some of the pre-existing issues which are eventually leading to the increased release of U-POPs, mercury and water pollution (through the improper use, management and disposal of PPE, mercury devices, and the lack of technologies for the pre-treatment of medical waste), the project, through its technical components, intends to counteracts the negative impact of COVID-19 by assisting stakeholders through a range of initiatives like awareness raising on the management of end of life PPEs, training on the disposal of PPEs and the use of non-chlorinated disinfectants, implementation of BAT and BEP for the treatment of C-HCW, assistance to SMEs on the use and certification of PPE against COVID-19, training and support for the replacement of mercury devices. In the TOC diagram, this is represented as blue arrows going from right to left.

75. The project intends to remove some of the pre-existing difficulties to collect and dispose in a proper way the waste generated by healthcare facilities as reported by several LGUs and address the challenges of reducing U-POPs emissions and mercury-added health care products through a number of actions like:

? Strengthening of regulations (aimed for instance at de-classifying some healthcare waste after specific type of pre-treatment) enabling the country to address the challenges of the healthcare sector during pandemic;

? Harmonizing policies and updated action plans on mercury, MAPs, and mercury wastes particularly in the healthcare sector;

? Fill in the information gaps in relation to mercury inventory particularly in the healthcare sector;

? Integrate mercury, mercury wastes, and MAPs inventory into a central database, coordinated with the other existing databases in other government agencies also responsible for the management of MAPs. This will facilitate efficient monitoring and regulation;

? Development and demonstration of a system, including software tools for the management and optimization of waste collection from multi-point itineraries, integrated with hazard waste manifest system, to be developed in an area of metro Manila;

? Development of guidance and awareness raising for healthcare facilities on the classification and segregation of waste with special reference to the classification and segregation of PPEs and mercury-

added healthcare products, based on specific considerations related to the planned treatment and disposal technologies (autoclaving, chemical disinfection, landfilling);
? Assess existing TSD facilities in terms of procedures and technologies being adopted and the potential need for upgrading in order to become BAT/BEP compliant;
? Demonstration of safe technologies for the sterilization of healthcare wastes after use, so that these can be stored for a longer time pending their disposal. This could inherently avoid a significant release of U-POPs (PCDD/F). Potential technologies to be adopted in this regard may be small scale and low cost
? Introduce best available technologies and best environmental practices for the environmentally-sound management of mercury and mercury wastes through partnerships with the private sector. The phase out of mercury-added health care products will be facilitated through the promotion of BAT/BEP in the entire life cycle of these products. This promotion in the health care sector will assist in scaling up the transition to cleaner technologies and practices in other sectors using mercury-added products;
? Facilitate access to green financing for MSMEs in the healthcare sector for increased investments to support adoption of BAT/BEP.

76. Furthermore, the project will establish knowledge and practice aimed at reducing the amount and the intrinsic hazard of the waste generated from household, through:
? Development of guidance and awareness raising, for the general population, with dedicated training for women, on aspects like proper selection, use and maintenance of PPEs during pandemic events (taking in due considerations, for instance, the new guidance issued by the WHO); chemicals and nonchemical approaches for disinfection of surface and waste, including non-chlorinated chemicals; methodologies for the proper disposal of used PPEs;
? Assistance to small manufacturers of the reusable ?non-medical fabric masks?, which are now recognized by the new WHO guidelines as an essential tool in the fight against the virus, to ensure that they are manufactured following environmental and safety standard, and facilitating their production as to reduce the demand, from the general public, of the medical single use PPEs (like surgery or N95) which should be left for professional use in place where a better management of waste may be also more easily ensured.

77. From the social standpoint, the project will integrate activity and criteria that will ensure that gender mainstreaming aspects are properly addressed. More specifically, all the project activities will be designed and implemented in such a way that the equal access to job opportunity will be ensured; that awareness raising initiatives and materials specifically dedicated to women will be carried out; that the specific health risk for women resulting from the exposure to chemicals and pathogens will be properly assessed and managed.

78. Gender related activities, their targets and indicators will be part of a budgeted GM plan which will be integrated in the project result framework. The gender mainstreaming approach of the project is summarized in the bottom-left region of the diagram.

79. If properly implemented, monitored, and supported by an effective implementation of the gender mainstreaming plan, the project activities will ensure that the project outputs will be achieved, and that ultimately, the Global Environmental Benefits will be delivered.

BRIEF DESCRIPTION OF EXPECTED OUTCOMES AND COMPONENTS OF THE PROJECT

Component 1. Unintentionally-produced POPs release reduction in the healthcare waste sector

80. This component has the main objective of reducing the waste and U-POPs generation, through a better understanding of the impact generated by epidemic events on the generation of waste and on the additional generation of U-POPs associated with the disposal of these waste, either in case of improper disposal or in case of adoption of BEP and BAT. Although a first estimation has been attempted during the project drafting to assess the overall amount of waste and U-POPs generated, through this component a more detailed and sound approach will be adopted for the evaluation. Based on this sound scientific assessment, the project will identify how safe procedures and safe chemicals at any stage can be adopted to reduce the amount of waste generated and the associated release of U-POPs. The impact in terms of waste and U-POPs minimization is achieved in this component mainly through the development and communication of guidance related to the manufacturing, use and disposal of waste, therefore inducing a widespread behavioral change with the twofold objective to increase the protection against infectious agents and minimizing the environmental impact. Considering the pivotal role of women in both the civil society and the healthcare facilities during the COVID-19 outbreak, women will be considered at the same time the key beneficiaries and main actors in this component and they will be the main audience of training and communication, and will have to play the main role in the project implementation (development of guidance documents, training, technical assistance on PPE manufacturing).

81. The project envisages the adoption of three different approaches to reduce U-POPs emissions:

i. A substantial reduction of unnecessary disinfection with chlorine-based disinfectant, either by replacing them with non-chlorine disinfectant, by providing clear guidelines on the amount of chemicals to be used, or even by avoiding unnecessary disinfection through the drafting of internal policies. Guidelines on the use of chlorinated disinfectant will have an impact going beyond the pandemic emergency. The abuse of chlorinated disinfectant results in a significant release of chlorine in healthcare wastes generated and when burned, increases the generation of UPOPs in the atmosphere and residues. It also contributes to the presence of toxic chlorinated organics (AOX) in wastewater streams. However the evaluation of the amount of U-POPs that can be reduced through this way will be undertaken at PPG stage;

ii. A similar approach will be adopted on the use of face mask. The use of face mask will go beyond the evolution of the current COVID-19 pandemic, and suitable guideline as well as an LCA analysis will be prepared to understand the safe reusability (how many times) of reusable face masks, and how safe "reusable community face masks" are in comparison with the single-use masks (N95 or medical); and

iii) Improved collection and disposal of medical waste will prevent the improper disposal of PPE, out of which a significant percentage may be burnt accidentally or deliberately in dumpsites.

This component has the following outcomes and outputs:

Outcome 1.1 Policies and environmentally-sound procedures developed for the minimization of health care wastes, focusing on the wastes generated during pandemic, and in support of MSMEs

82. As it may be understood from its short description, under this outcome the activities will concern two aspects: from one side, the strengthening of policies and guidelines to ensure a harmonized approach to issues and challenges brought about by pandemic events and on another, it would involve identification of environmentally-sound approaches disposal, disinfection and sanitation of healthcare wastes, with the purpose to prioritize whenever possible options capable to ensure the required level of waste management and disinfection with a lower environmental impacts and lower health risk. It will also involve support to the manufacture of reusable face masks in the community to reduce waste generation. Technical assistance will also be provided to TSD facilities and PPE manufacturers to ensure standardized product specifications and to access possible green financing schemes to fund investment plans.

Output 1.1.1 Strengthening of relevant national policies on healthcare wastes management with special focus on responses during pandemics

83. This output will assess the existing policies and regulations on management of healthcare wastes and will propose provisions addressing gaps and barriers. It envisages the strengthening of regulations enabling the country to address the challenges of the healthcare sector during pandemic. Under this output, a set of guidance documents for the general public and the health and environmental authorities on the, use and disposal of COVID-19 related PPEs will be developed. This will contain not only the intent to ensure that PPEs are properly used so that their protective effect is maximized, but will also have the purpose to provide clear indications on the procedures for disposal of PPEs after their use. More specifically, for the use of PPEs at households, the guidance will also include the correct procedures for disinfection of end of use PPEs (prioritizing non chemicals or non-chlorinated disinfectants) to ensure that these do not represent a risk for waste collectors. Precise indications will be given in the guidance for waste management operators to collect and manage the end of use PPEs generated at households. This output also envisages the formulation of standard specifications for the procurement of suitable PPEs and medical equipment and devices.

84. This output will be achieved through implementation of the following activities:

Activity 1.1.1.1 Gap analysis of national policies on healthcare waste
Activity 1.1.1.2 Preparation of an improved draft on HCW policies aimed at minimizing release of U-POPs and mercury
Activity 1.1.1.3 Consultation on the improved draft on HCW policies including gender mainstreaming
Activity 1.1.1.4 Finalization and endorsement of the new HCW policies

Output 1.1.2 Inventory procedures and guidelines for the calculation of additional waste generated during pandemic, with special reference to the current COVID-19 pandemic established

85. This output will be achieved through the development of procedures for the reliable calculation of additional healthcare waste generated during pandemic and the disposal of the same. This output will concern the following: (i) Assessment of the additional generation of waste associated to the pandemic in healthcare facilities, through the development and piloting of a specific guideline document and; (ii) A guideline for the assessment and management (disposal) of the COVID-19 associated waste at households will be developed and piloted for the assessment of use of disinfectant and the generation of household waste related to the pandemic ? which are mostly limited to PPE, like single use or reusable face masks, gloves, face shield.

86. This output will be achieved through implementation of the following activities:
Activity 1.1.2.1 Development of standard calculation methods for HCW generation
Activity 1.1.2.2 Piloting of the inventory in at least 10 healthcare facilities and in an urban area
Activity 1.1.2.3 Finalization and endorsement of the guidelines

Output 1.1.3 Assessment of the lifecycle impact of PPEs and protective measures with reference to the consumption of material and generation of potentially contaminated wastes and POPs completed.

87. This output envisages assessments of PPEs used in the community and and healthcare facilities. A number of PPEs equipment ? with special reference to face masks but also including gowns, gloves and protective suit ? will be identified and subjected to a LCA to evaluate the overall impact in term of natural resource, GHG released, waste generation, and release of U-POPs and other chemicals during all the lifecycle stages.

88. This output will be achieved through implementation of the following activities:

Activity 1.1.3.1 Selection of a suitable LCA software and associated database compliant with ISO or equivalent standards based on knowledge exchange and consultation with LCA experts
Activity 1.1.3.2 Conduction of LCA for at least 3 different PPE types with at least 2 manufacturing alternatives considered for each product in compliance with the objective to reduce waste and U-POPs generation
Activity 1.1.3.3: Assessment, based on official standard methods, of the technical performance at least 2 types of community reusable face masks, at least 2 single use face masks, and at least 2 types of disposable gowns and gloves

Output 1.1.4: Analysis of the impact of different chemical disinfection procedures for waste and objects with specific consideration for sensitive groups and women, and associated generation of U-POPs in the air and water completed.

89. The COVID-19 pandemic has caused an excessive use of chemicals disinfectants to the point that in the initial phase of pandemic it has been observed a shortage in the availability of specific disinfectant products. An increase of intoxication cases associated with the overuse of disinfectant has been observed in anti-poison centers worldwide. The massive release of specific disinfectant in the environment may harm directly or indirectly the quality of water, cause the formation of toxic

chlorinated chemicals, and increase the generation of PCDD/F if waste disinfected using chlorine bleach are burnt in the open or in substandard incinerators. The main purpose of this output is to assess on the basis of the available scientific literature, the efficiency of different disinfection chemicals in term of percentage of virus destruction. The aim is to identify chemicals characterized by a good disinfection efficiency but are less hazardous and which do not indirectly cause the generation of U-POPs when released in the environment compared with chlorine-based disinfectants. This output also intends to prepare a set of specific guidance documents for the Philippines for the safe and effective disinfection of surfaces and objects to ensure at the same time a better disinfection effect and a reduced impact for the environment. Internal hospital policies on restriction of chlorine-based disinfection may also be drafted.

90. This output will be achieved through implementation of the following activities:

Activity 1.1.4.1 Identification and collection of physical, chemical and biological properties of commercial products for viral disinfection available on the Philippine market (hazard characterization)
Activity 1.1.4.2 Exposure assessment to chemicals contained in disinfectant disaggregated by age and gender following US-EPA or EU-REACh chemical risk assessment procedures
Activity 1.1.4.3 Recommendation on the use of anti-viral disinfectants based on the result of the studies and knowledge exchange with national and international experts

Output 1.1.5: Support to small manufacturers and women enterprises of community facemask to improve the production of reusable fabric non-medical PPEs based on WHO guidelines.

91. The World Health Organization, had recently released a updated number of guidance documents and videos on the use and characteristics of the so called non-medical fabric face masks. Non medical face masks have become a daily life object in most countries for use in non-professional settings. This activity aims at providing support to small manufacturers on the production of non-medical face masks which may be effective, suitable, made of material which are durable and can stay in contact with the skin, effectively reusable for a number of times. The project has initially identified the Confederation of Philippine Manufacturers of PPE (CPMP) as possible partner in this particular output. Procedures for washing face mask during their use and before their disposal will also be developed. This will result in products which are: (i) Effective to ensure the required protection; (ii) Durable; (iii) Reusable; (iv) Suitable for the prolonged direct contact with the skin; (v) Characterized by a low environmental impact; (vi) Accompanied by easily understandable documentation for their use, washing, storage and disposal.

92. This output will be achieved through implementation of the following activities:

Activity 1.1.5.1 Consultation with PPE manufacturers and importers
Activity 1.1.5.2 Analysis of the PPE manufacturing scenario in the Philippines
Activity 1.1.5.3 Preparation of Clean Production and Circular Economy guidelines for reusable PPE in the Philippine
Activity 1.1.5.4 Support at least two manufacturers to implement clean production and circular economy in the manufacturing of reusable PPE

Output 1.1.6 Technical assistance to help Treatment, Storage and Disposal (TSD) facilities and manufacturers of PPEs, to access green financing schemes.

93. The Development Bank of the Philippine has established a loan facility: the Sustainable Waste-management for Enhanced Environmental Protection (SWEEP). SWEEP intends to contribute to the development of solid and hazardous waste management facilities and waste to energy projects through financing in order to help protect the environment and address climate change. It will provide credit assistance to public and private institutions engaged in solid and hazardous waste management and waste to energy projects. Other tools that maybe employed include the use GEF grant to partially support the startup of initiatives which are at the same time promising from the point of view of market perspectives and environmentally sustainable. Some of these initiatives require initial investments which are out of reach of small investors which could therefore benefit from project support.

94. Technical assistance to help MSMEs in the healthcare sector, including TSDs and manufacturers of PPEs will be provided. The project will collaborate with partners in scaling-up public and private investments in the healthcare sector promoting circularity and environmentally-sound waste management. The often underserved micro, small, and medium-sized enterprises (MSME) will be assisted in the preparation of feasibility studies or project proposals in order to better access support from financing institutions for technology adoption. Manuals and guidance documents will be prepared to facilitate accessing these mechanism. Financing institutions, on the other hand, will be guided in the preparation of green finance packages that are responsive to MSME needs particularly those of the most vulnerable groups.

95. This output will be achieved through implementation of the following activities:

Activity 1.1.6.1. Analysis of current financial opportunities and development of guidance materials to facilitate the access to green financing for TSD and PPE manufacturers
Activity 1.1.6.2. Assistance to TSD and PPE manufacturing enterprises, in coordination with financing institutions, in the preparation of applications to be submitted to financing institutions to support initiatives on ESM of HCW and manufacturing of PPEs

Outcome 1.2 Environmentally-sound technology for the collection, treatment and recycling of wastes generated during pandemic implemented.

96. The main objective of this outcome is to establish a flexible and effective system for the management of healthcare waste which can be easily activated or expanded during any type of epidemic. It aims to deploy and implement the knowledge, procedures and technologies that will ensure that healthcare wastes esp. the additional waste generated during epidemic events are properly classified, segregated, collected, transported and disposed of. Although is not expected that through implementation of this project all the issues associated at such large scale event will be addressed, still the strategy of the project, its integration with activities already ongoing, and -last but not least ? the

installation of innovative technologies for both the transportation and disposal of waste will ensure that a systemic change can be achieved.

Output 1.2.1 Technologies and procedures upgraded to be BAT/BEP compliant

97. A preliminary survey of the TSDs has been conducted at PPG, based on internet and site visit, which gathered basic information on treatment capacity and technologies. As explained in the baseline, there are currently 30 TSD (Treatment, Storage and Disposal) facilities handing healthcare wastes in the country. At implementation, the project will assist EMB in the improvement of the existing online database for TSD facilities, to ensure that it will contain update information related to the capacity of TSD in term of declared capacity to treat and dispose healthcare waste, the additional capacity which can be conducted to ensure a proper response to pandemic events, their transportation capacity, and the status of their technologies. The improvement of the database will be achieved through questionnaires, telephone or internet calls, and site visits. Based on the results of this activity and available funding, upgrade of the facilities to ensure BAT/BEP compliance will be recommended.

98. This output will be achieved through implementation of the following activities
? Activity 1.2.1.1 Assistance to EMB for the widening and improvement of the online TSD database in the Philippines.
? Activity 1.2.1.2 Preparation of a strategy document for the improvement of the HCW treatment and transportation sector including description of suitable technologies

Output 1.2.2 Low or zero emission technologies for the pre-treatment and disposal of wastes generated during pandemic, implemented in a cluster of health care facilities and TSDs

99. The sustainable and environmentally sound management of healthcare wastes is not only a technological matter, but indeed requires that the healthcare waste management is reshaped in term of generation, segregation, collection, treatment and final recycling or disposal, from both the financial and environmental perspective. Through this component the project will implement BAT/BEP for the management of healthcare wastes generated especially during epidemic/pandemic events in a cluster of hospitals partially or fully dedicated for the treatment of COVID-19 patients and especially, those unserved by TSD facilities. Low or zero emission pre-treatment technologies for medical wastes including steam or dry autoclave or microwave disinfection maybe deployed .

The following section briefly describes the technology that maybe deployed:

Autoclave technology: An autoclave is a machine that uses high pressure steam for a very specific period of time and temperature to kill pathogens, such as bacteria or viruses. This process disinfects the waste prior to final disposal. Autoclaves are available in several capacities, ranging for the small system to be installed within hospital departments for the immediate treatment of small amount of infectious waste prior to the delivery to the hospital waste storage, to very large machines with a internal volume of several cubic meters, and capacity in the order of tenths of cubic meters/day, which may be used as centralized facilities in treatment centers. Autoclaves are typically non- combustion technologies. Modern autoclaves are equipped with automatic door locking systems, automated waste

load and unload, computerized control systems and dataloggers for recording waste cycles, etc. The advantage of autoclaves are their low price and flexibility. After treatment, waste are not anymore infectious, which means that they can be stored for longer time and eventually disposed along with common waste. However, not all healthcare waste can be treated into an autoclave: soiled bandages, gauzes, personal protective equipment, sharps can be autoclaved, whilst organic solvents, laboratory chemicals, anatomical parts, radioactive waste, mercury waste are not suitable for treatment in autoclave. These waste must be segregated and safely stored at origin, so that they can be addressed to dedicated facilities. The increased amount of PPE (face masks, gloves, etc.) generated by COVID-19 are however perfectly suited for the treatment in autoclave, and the treated waste generated should also be considered for material recycling, avoiding therefore the need for further disposal after treatment. Whilst autoclaving with modern equipment, coupled with safe disposal afterwards, prevents the formation of dioxins associated with incineration with substandard equipment or the accidental open burning of hazardous waste. If Autoclaving is preceded by a careful classification of the waste to be treated (easily to be achieved within healthcare facilities), then it can also facilitated the material recycling of waste after treatment, leading therefore to an implementation of circular economy concepts. This the reason why, in this project, the technology to be deployed has always to be accompanied by a proper training and technical assistance

Microwave. Microwave uses electromagnetic radiation to heat the water molecules inside the material. Microwave frequencies used for disinfection are generally (2,450 ? 50) MHz and (915 ? 25) MHz (Neto et al., 1999). Microwaves penetrate the material to be treated causing vibration of the molecules at very high speed, in the order of billions of times per second. This generates heat and cause high temperature disinfection. Compared to other technologies, microwave require less energy and a faster disinfection action. There is now abundant evidences that microwave is capable to kill several pathogens although the process has to be monitored using devices developed purposely for microwave. The limitation of microwave are similar to the ones of autoclave, except that microwave cannot treat large metal objects- Small microwave, due to their size and easiness to use, are particularly suited for the pre-treatment of infectious wastes ad hospital department level, before their delivery to the centralized storage facility.

100. The proposed project sites are Region 2 (Cagayan Valley), Region 8 (Eastern Visayas), and the National Capital Region (Metro Manila). The selection is primarily based on the following criteria: (i) number of COVID-19 cases; (ii) lack of TSD facilities (Category A, B, and E) for M501 wastes in the region or the treatment capacity of TSD facilities could not accommodate the infectious wastes generated per day. The National Capital Region registered the highest COVID-19 cases. Moreover, its three TSD facilities, having a total treatment capacity of 58 tons per day cannot accommodate the 404.7 tons daily generation rate. The project aims to partner with government hospitals in the city to ensure that BAT/BEPs on healthcare wastes management are in place in the facilities. Region 2 does not have a single treatment facility. M501 wastes are stored in septic vaults. Most of the hospitals send wastes to Region 3, NCR or Region IVA (Calabarzon) for treatment. For Region 8, there is no facility to treat M501 wastes in the region. The existing TSD facility is Category F that collects M501 wastes for temporary storage prior to treatment and disposal in Region IVA. Other hospitals have their wastes collected and treated by a TSD facility based in region 7 (Central Visayas). In the preparatory phase,

the project has identified LGUs and private sector service provider interested in investing on the establishment of a TSD facility capable of handling healthcare wastes, including mercury.

101. Based on a wide survey of the situation in Metro Manila, the following healthcare facilities have been selected as potential pilot facilities and beneficiaries for the activities envisaged under this output:

? Region II Trauma and Medical Center, located in AH 26, Magsaysay, Bayombong, Nueva Vizcaya; this is a Level III - Tertiary Hospital/ CATEGORY B: NON-ECP, Government Hospital, with 300 beds out of which 150 dedicated to COVID-19 patients;

? Southern Isabela Medical Center, located in Zamora St. cor. Recto Avenue, Rosario, Santiago City; this is a Level III Government hospita, with 350 beds, out of which 176 dedicated to COVID-19 patients;

? Cagayan Valley Medical Center, Carig Sur, Tuguegarao City, Cagayan; this is a Tertiary Government Hospital, which increased the number of beds from 500 (in 2017) to 1000 (in 2019)

? Eastern Visayas Medical Center, located in Bagacay, Tacloban city, Leyte. This is a Tertiary Government Hospitals, with 1500 out of which 150 are dedicated to COVID-19 patients.

? Quezon City General Hospital, located in Seminary Road, EDSA, Bgy. Bahay Toro, Quezon City. This is also a tertiary Government hospital, with 250 beds out of which 107 are dedicated to COVID-19 patients.

? San Lazaro Hospital, Dr. Jose Fabella Memorial Hospital and Quirino Medical Center in the National Capital Region have been known to have mercury-containing device stockpiles. The project aims to coordinate with these healthcare facilities for the sound disposal of their mercury wastes.

Furthermore, the following LGUs and TSDs have been selected as potential pilot sites and beneficiaries for the activities envisaged under this output:

? Cities of Ilagan (Region 2) and Tacloban (Region 8)
? Integrated Wastes Management Inc. (IWMI)
? ENVIROCARE
? Metro Clark Waste Management Corporation (MWMC)
? Pollution Abatement Systems Specialists Inc (PASSI)

Details of the proposed interventions for the project are indicated in **Annex J**.

102. The following are the activities which are envisaged under this output:

Activity 1.2.2.1 Validation of the proposed intervention at HCF and TSD level
Activity 1.2.2.2 Drafting of technical specification for BAT medical waste storage and treatment technologies at both HCF and TSD level
Activity 1.2.2.3 Demonstration of BAT/BEP waste management technologies for HCW for an overall amount of at least 18t/day of HCW waste

Component 2: Management of mercury, mercury-added products (MAPs) and mercury wastes in the healthcare sector according to the Minamata Convention on Mercury and the Philippine National Action Plan for MAPs phase-out

103. This component proposes an alternative scenario where the effective management of mercury, MAPs, and the associated mercury wastes in the healthcare sector is ensured, conducted in line with the strategies and activities identified in the Philippine National Action Plan for the Phaseout of Mercury added Products (MAPs) and the Management of the Associated Mercury-containing Wastes, and consistent with the provisions of the Minamata Convention on Mercury. The Philippine ratification of the Minamata Convention on Mercury in 2020 puts into focus national priorities to implement intensified interventions with regard to mercury, the phase-out of products containing mercury such as thermometers, sphygmomanometers, among others, and the environmentally-sound management of mercury wastes. In the Philippines, apart from the the ASGM and energy sectors, the healthcare sector is one of the bigger users of mercury, often found in medical devices, lighting products, and used in various procedures.

104. Policies in relation to the importation, manufacture, processing, sale, handling, storage, distribution, use, and disposal of mercury, mercury compounds, and mercury-added products (MAP) are included in the Philippines' Revised Chemical Control Order (CCO) for Mercury and Mercury Compounds (DAO 2019- 20). MAPs phase out, according to this DENR Department Order is scheduled in 2022. For the importation of mercury, mercury compounds, and MAPs allowed by the Philippines, guided by the provisions of the Minamata Convention on Mercury, appropriate requirements and procedures for handling, labeling, storage, treatment, disposal, data recording, and reporting, are provided, including the necessary permits that need to be secured. Gaps will mostly be on the harmonization of policies across government offices, and also on implementation which will involve other partner government agencies such as the Department of Trade, the Food and Drugs Administration, the Fertilizer and Pesticide Authority, and other members of the Inter-agency Technical Working Group on Mercury (Hg-IATWG) under the the Inter-Agency Committee on Environmental Health (IACEH), that also provide standards, licenses and certification for products under their jurisdiction; but most especially the Bureau of Customs responsible to guard the country's borders from transboundary movement of mercury.

105. Additional knowledge, training, and planning will be needed to address fragmentation, miscoordination, and lack of technical knowhow and awareness. For DENR, in particular, additional support will be needed to update the country's Online Permitting and Monitoring System, incorporating mercury into the system and devising new innovative approaches to aid in better and more efficient data collection, monitoring, tracking, and reporting that will also benefit other chemicals of concern. All these and more are well-placed in the country's National Action Plan for the Phase-out of MAPs, prepared with support from UNIDO and the Government of Switzerland. In project areas where TSD facilities do not exist, the project will support the identification of private sector service providers or local government units interested to invest on the establishment of a TSD facility capable of handling mercury waste . The outputs under this component intend to strengthen policy coherence, data management, technical capacities, access to BAT/BEP methodologies and overall awareness and knowledge in relation to mercury and mercury wastes.

Outcome 2.1 Improved synergies to support the phase-out of Mercury-added Product (MAPs) and environmentally-sound management of mercury and mercury wastes, especially in the healthcare sector.

106. While there are existing regulatory and legal instruments that constitute the framework for managing mercury, mercury compounds, and their associated wastes, these will require further consolidation and updating in order to adhere to the provisions and guidelines presented in the Minamata Convention on Mercury, taking into consideration a life-cycle approach. Equally important is the overall strengthening of various national and local institutions to implement mercury management strategies and action plans that are mutually-reinforcing. This component would include efforts to review, assess and identify gaps and potential overlaps in existing policies and workplans of concerned government agencies. With these, synergies at the policy level to support the phase-out of MAPS and the environmentally-sound management of mercury and mercury wastes, in accordance with the Minamata Convention on Mercury and NAP for MAPs will be ensured. This outcome will also include activities designed to improve the capacity of the Philippine government in gathering inventory, information and other data for tracking, monitoring, and reporting purposes. This inventory system can further be informed by the development of a mercury material flow based on comprehensive information on the flow of mercury in the Philippines within its life cycle.

Output 2.1.1 Harmonized policies and updated action plans on mercury, MAPs, and mercury wastes across concerned and mandated agencies developed

107. Assessments to validate the findings of the Philippine Minamata Initial Assessment and to review the implementation of the 2010 National Action Plan on Mercury and Mercury-containing Wastes Management will be conducted. Based on these assessments, policies and action plans that need to be revised and new regulations to support the phase-out of MAPs and the environmentally-sound management of mercury and mercury wastes will be formulated. This work can be informed by the recently-updated chemical control order for mercury and mercury compounds as well as other relevant policy instruments. Accordingly, these will lead to an updated and more-responsive legal and regulatory framework with product-specific policies. In addition, government agencies that are members of the Hg-IATWG under the IACEH will be supported in their preparation of updated work and financial plans taking off from the National Action Plan for MAPs Phase-out, taking into due consideration the mercury wastes expected to be generated. These plans will facilitate budgeting and scheduling of activities in support of the implementation of the National Action Plan for MAPs Phase-out.

108. This output will be achieved through implementation of the following activities:

Activity 2.1.1.1 Validation / updating the Philippine Minamata Initial Assessment and assessment of the implementation of the 2010 National Action Plan on Mercury and Mercury-containing Wastes Management

Activity 2.1.1.2 Formulation of policies and action plans that need to be revised and new regulations to support the phase-out of MAPs and the environmentally-sound management of mercury and mercury wastes in the healthcare sector

Activity 2.1.1.3 Support to government agencies that are members of the Hg-IATWG under the IACEH to prepare and update work and financial plans compliant with the National Action Plan for MAPs Phase-out

Output 2.1.2 Inventory and monitoring systems for MAPs and mercury wastes, emissions, and releases institutionalized

109. Government will be supported in its efforts to gather accurate and timely information regrading mercury and mercury wastes for more efficient monitoring, tracking, and reporting. The DENR has an existing online system called ?Online Permitting and Monitoring System? (OPMS) where this mercury database can eventually be lodged. This online system will act as the central database for mercury, mercury wastes, and MAPs inventory, coordinated with the other existing databases in other government agencies also responsible for the management of MAPs. The Self-Monitoring Reports (SMR) for industries and other reporting mechanisms will also be revisited for updating. While the Philippine Clean Air Act and Clean Water Act have identified both air and water quality standards that include mercury as a critical parameter, monitoring of mercury levels in emissions, releases, air, and water bodies is not conducted regularly. Additional capacity will be provided to better institutionalize mercury monitoring including technical capacities to develop knowledge and database for substance flow and conduct substance analyses.

110. This output will be achieved through implementation of the following activities:

Activity 2.1.2.1 Develop a material flow analysis for MAPs in the Philippine
Activity 2.1.2.2. Review and Improvement of the Guidelines of "Self-Monitoring Report (SMR)" for industries
Activity 2.1.2.3. Strengthening the ?Online Permitting and Monitoring System? (OPMS) and other existing databases
Activity 2.1.2.4 Support to gather accurate and timely information regarding mercury and mercury wastes monitoring, tracking, and reporting
Activity 2.1.2.5. Training on monitoring of mercury levels in emissions, releases, air, and water bodies
Activity 2.1.2.6. Environmental monitoring of mercury levels in emissions from HCW facilities (10 monitoring campaigns), environmental air (20 samples), water bodies (50 samples)

Outcome 2.2 Demonstrated capacity to adopt best available technologies and best environmental practices for the environmentally sound management of mercury wastes from the healthcare sector

111. This outcome provides the opportunity to introduce best available technologies and best environmental practices for the environmentally-sound management of mercury and mercury wastes through partnerships with the private sector. The project will introduce and demonstrate global-best approaches to mercury and mercury wastes management and will also facilitate access to financing for MSMEs in the health care sector for increased investments to support adoption of these approaches, with due consideration given to vulnerable and marginalized groups including women and youth. These will be done through collaboration with the private sector, collation and harmonization of relevant

financing systems in the country, coordination with development banks and financing institutions, and promotion of sustainability reporting through green finance mechanisms.

Output 2.2.1 Capacity of mercury waste service providers upgraded to be BAT/BEP compliant.

112. The country has a limited number of TSD facilities that are accredited and qualified to handle mercury wastes. As of 2020, there are 34 accredited TSD facilities qualified to handle mercury wastes, mostly in the island of Luzon (NCR, Region III, and Region IVA). The project will assess these existing facilities in terms of procedures and technologies being adopted and the potential need for upgrading in order to become BAT/BEP compliant, and comply as well to the guidelines provided by the Minamata Convention on Mercury. Recommendations will also be provided with the aim to expand national capacities to properly handle mercury wastes, taking into account regional and spatial concerns and challenges.

113. This output will be achieved through implementation of the following activities:

Activity 2.2.1.1 Assessment of existing facilities (TSD) in terms of procedures and technologies being adopted and the potential need for upgrading in order to become BAT/BEP compliant
Activity 2.2.1.2 Assessment of selected mercury waste management at hospital level and the potential need for upgrading to comply with BEP procedures.

Output 2.2.2 Environmentally sound management of MAPs and mercury stockpiles in the healthcare sector demonstrated

114. An estimated 10.4 tons of mercury from MAPs and various procedures conducted in laboratories, clinics, hospitals, and other healthcare facilities has been generated based on a 2018 mercury inventory stocktaking exercise. More is expected to be generated as the country continues to intensify efforts in limiting the use of mercury to activities that are allowed by the Minamata Convention on Mercury. Through this project, global-best methodologies, practices, approaches, and technologies will be introduced and demonstrated to promote the environmentally-sound management of mercury and mercury wastes in accordance with national policies and the provisions in the Convention. The project also intends to increase capacity of TSD facilities and other establishments to safely collect, temporarily store, treat, and dispose mercury wastes. Assistance will be provided to collect, transport, and safely dispose mercury stockpiles and MAPS for phase-out from hospitals, clinics, laboratories, and households.

115. Being an elemental chemical, mercury cannot obviously be destroyed. The strategy related to the treatment of mercury waste therefore envisages the separation of mercury from the other material of the waste (glass, plastic) and the long term of mercury storage in dedicated facilities. Due to the chemical and physical characteristics of elemental mercury, evaporation under vacuum in closed system (i.e. Vacudry system) is the technology of choice. For small amount of waste is usually recommended to package mercury waste in sealed containers and then encapsulate them in cement blocks to be placed for long term storage in dedicated landfills

116. This output will be achieved through implementation of the following activities:

Activity 2.2.2.1 Training on the safe management of MAP in selected healthcare waste facilities.
Activity 2.2.2.2 Drafting of plans and procedures to demonstrate the management of MAPs in selected pilot facilities
Activity 2.2.2.3 Environmentally safe management of mercury waste and MAP

Component 3: Capacity building, awareness raising and knowledge management

117. This component will look into enhancing capacities to promote and comply with the provisions in the Stockholm Convention on Persistent Organic Pollutants and Minamata Convention on Mercury and the implementation of the Philippine National Implementation Plan relevant to u-POPs emission reduction and the National Action Plan for the Phase-out of MAPs. These will not only focus on capacity building for the regulatory bodies but also for other stakeholders as well. The project will provide support for the activities to be undertaken during the project duration including but not limited to meetings, trainings, workshops, forums, and technical discussions. This outcome is also designed for information dissemination and education targeting ordinary citizens, vulnerable sectors such as women and youth, private sectors and other stakeholders to increase awareness on the risks due to exposure to hazardous and infectious substances.

Outcome 3.1 Enhanced capacities to implement policies and workplans for the environmentally-sound management of infectious and hazardous wastes in the healthcare sector

118. This outcome will involve training on wastes management in the healthcare sector and support for improving coordination among member agencies of the Inter-Agency Committee on Environmental Health (IACEH), serving as the primary platform to discuss issues concerning the implementation of both the Stockholm and Minamata Conventions in relation to chemicals and wastes management, including those in the healthcare sector.

Output 3.1.1 Capacity building activities related to the environmentally-sound management of infectious and hazardous wastes in the healthcare sector for government authorities, staff of healthcare facilities and TSDs, and civil society organizations undertaken

119. Efforts toward capacity building activities related to the environmentally-sound management of infectious and hazardous wastes in the healthcare sector will be directed at government authorities, staff of healthcare facilities and TSDs, and civil society organizations. Priority will be given to healthcare and waste management frontliners, both formal and informal, especially those from hospitals and health facilities with lower capacities and access to knowledge. This output will include training on best practices for the environmentally-sound management of wastes in the healthcare sector; the use of non -mercury equipment for households, educators, and healthcare staff; the identification and handling of MAPs and mercury wastes for Customs Police; mercury-related emergency response; and support for committee meetings, workshops, and technical discussions arranged to facilitate decisions, resolutions, and action steps especially by the IACEH.

120. This output will be achieved through implementation of the following activities:

Activity 3.1.1.1 Training on wastes management in the healthcare sector, including national regulation and WHO Bluebook on the management of HCW
Activity 3.1.1.2 Training on wastes management for authorized TSD facilities, including analysis of HCW management technologies (handling, collection, transportation, pretreatment and disposal), national regulation and WHO Bluebook on the management of HCW
Activity 3.1.1.3 Platform to enhance the coordination among member agencies of the Inter-Agency Committee on Environmental Health (IACEH) to ensure compliance with Minamata and Stockholm convention

Outcome 3.2 Increased awareness and knowledge on infectious and hazardous wastes to promote a whole-of-nation approach towards health and environmental protection

121. Under this outcome, the project will assist the government in disseminating the information related to a better management of infectious and hazardous waste. The first step would be to develop a picture of the actual training and information needs, based on a standard KAP (Knowledge, Attitude and Practice) survey conducted a baseline and post-impact. Then, awareness raising and advocacy programs will be developed and implemented to cover the general public, school, private entities, communities.

122. With these initiatives, a greater portion of the population will be better engaged and made more aware of the impact of infectious and healthcare wastes to health and the environment. Compliance to regulatory policies is also expected to increase. The project will also assist in the preparation of training modules on mercury to be incorporated in the educational system. Currently, learning topics on the negative impact of chemicals and wastes, such as those from mercury, to health and the environment as well as the importance of personal protective equipment and other preventive approaches to health and safety are hardly found in the national curriculum. Ensuring that these modules are institutionalized in the education system will greatly contribute in shaping the new generation of leaders who will inherit the challenges of sustainable development.

Output 3.2.1 Awareness raising and advocacy programs targeting the general public, community leaders, schools, enterprises, private sector players, and other stakeholders conducted

123. The following will be the main activities:
Activity 3.2.1.1. Baseline and post-impact survey among general public and households using KAP or similar methods.
Activity 3.2.1.2 Preparation of training modules on mercury, PPEs and management of HCW to be incorporated in the educational system
Activity 3.2.1.3 Conduct of at least 4 training and 4 awareness raising workshops
Activity 3.2.1.4. Broadcasting of awareness raising and communication events.

Output 3.2.2 Knowledge management system established

124. Under this output, technical information, success stories, reports, manuals, fliers, standard presentations will be made available through a knowledge hub to be housed by a selected government agency. This envisages the following activities:
Activity 3.2.2.1. A Formulation of a Knowledge Management plan
Activity 3.2.2.2. Building and maintenance of the Project Website
Activity 3.2.2.3 Creation, publication and dissemination of Information, Education and Communication (IEC) materials and relevant reports
Activity 3.2.2.4. Holding of International knowledge exchange workshops at Mid-Term and at project end

Component 4: Monitoring and Evaluation

125. Component 4 would generate and ensure systematic support for managing all activities related to inception, monitoring, evaluation and reporting on progresses and results of the project. This would guarantee the achievement of project objectives, as well as promote the internal circulation of knowledge and the external dissemination of the results of the project. This will include the creation of a project management structure to allow coordination between project partners and the establishment of a system for monitoring & evaluation of the impact and the sustainability of the project activities. It is also expected that under this component, project monitoring and evaluation will be conducted in accordance with UNIDO and GEF requirements and procedures. The component will have 2 Outputs:

Outcome 4.1 Project Monitoring and Evaluation based on lesson learnt ensured

126**. Output 4.1.1 Project Evaluation and Monitoring carried out, including gender plans, environmental and social management plan (ESMP), and stakeholder engagement plan (SEP)**
Activity 4.1.1.1. Holding of the Inception workshop and preparation of the inception report.
Activity 4.1.1.2. Preparation and approval of Periodic Project reports (PIR, QPR, AWP, QWP) and risk monitoring

127. **Output 4.1.2 Independent Mid Term Review and Terminal Evaluation undertaken**
Activity 4.1.2.1 . Conduct of Independent Mid-Term review and Terminal Evaluation

D. ALIGNMENT WITH GEF FOCAL AREA AND/OR IMPACT PROGRAM STRATEGIES

128. The project is aligned with the GEF-7 programming direction, Chemical and Waste focal area, as it seeks to Eliminate/restrict/control emissions of the chemicals listed in Annex A, B and C of the Stockholm Convention?. The project is also aligned with the GEF-7 strategy aimed at maximizing private sector engagement and public-private sector investments in the CW cluster as well as gender mainstreaming in the CW cluster. In line with the GEF-7 requirements, the projects will seek to create or improve the enabling environments in which the private sector can engage to reduce the use of harmful chemicals and to prevent the emission of harmful waste. The project will also assist the national healthcare system to complete the phase out of mercury-containing devices and will

implement capacities and technologies for the environmentally sound management of mercury waste. In this respect, the project is compliant with the GEF objective to achieve ?Environmentally sound waste management/disposal of mercury/mercury containing waste? under the Industrial Chemical program. It is consistent with the Chemicals and Wastes focal area specifically on Program 1 which seeks to eliminate or significantly reduce chemicals through the Minamata Convention. It is also aligned with the CW 1-1 objective to strengthen the sound management of industrial chemicals and their wastes through better control reduction and/or elimination. The project also intends to strengthen the national legislation related to the management of healthcare waste, with the goal to provide more options for the recycling or disposal of waste after their safe disinfection, so that the release of U-POPs for improper disposal would be further reduced.

E. INCREMENTAL/ADDITIONAL COST REASONING AND EXPECTED CONTRIBUTIONS FROM THE BASELINE, THE GEFTF, LDCF, SCCF, AND CO-FINANCING.

129. The following table presents the expected contributions of the baseline programs versus the incremental reasoning of the project:

BASELINE	INCREMENTAL REASONING
Component 1: Unintentionally-produced POPs release reduction in the healthcare waste sector	

The current pandemic has brought about additional strain to the already burdened healthcare wastes management in the Philippines as evident from the information reported in the baseline related to the pandemic. It has brought about: (i) overconsumption of chlorine based disinfectants, causing equivalent release of these chemicals in the environment; (ii) over consumption of single-use professional face mask (surgical, N95) even in family or household setting, with both the consequence of their improper use (masks being used beyond their recommended usage time or even re-used) and improper disposal (disposable masks just abandoned in the environment or mixed with the common waste).

It has to be mentioned that the GoP has already undertaken a number of action to counter balance the effects described above, through the issuance of guidance documents on the management of generated waste in Health Care facilities and community quarantine units. However, information is limited for healthcare facilities and not effectively communicated to the general public. In the Philippines there are around 1000 healthcare facilities, out of which 433 hospitals run by the national and local governments, 48 of which are located in Metro Manila.

Although the 30 TSD facilities using non-burn disposal technologies registered in the country, together with other TSD facilities reportedly have enough capacity to dispose healthcare waste generate in normal conditions, their overall capacity is not enough to face the additional load generated during pandemic events. In areas unserved by TSD, health care facilities are employing chemical disinfection, and the treated health care wastes are stored in the designated storage facility or disposed of in a concrete vault located within the health care facility compound or premises. The transportation of these infectious wastes from the provinces to Luzon areas where majority of waste treatment facilities are located, may pose risks to the health of waste transporters and the community.

There is no system in place to collect COVID-19 related waste generated at household although these waste, bylaw, has to be classified as healthcare waste. It is also reported that in many cases, open burning of waste is still a procedure adopted by some operators to achieve volume reduction of landfilled waste.

The situation of the healthcare waste management in the Philippines therefore need investment to improve the technologies for the disposal of hazardous and infectious waste (the M501 category) and to secure that the system will work also during the overload associated to emergency conditions. Budget allocation of the COVID-19

The project intends to support ongoing baseline activities and efforts related to the management of waste generation and use of hazardous chemicals. Through Outcome 1. the project will therefore support GoP in the strengthening of relevant national policies in healthcare waste sector, provide guidelines on the inventory of waste generated esp. during pandemic, establish safe procedures and identify safe chemicals for the minimization of waste and the reduction of U-POPs potentially generated by household healthcare waste and healthcare facility waste during pandemic.

The project also envisages the support to small manufacturers and women enterprises of community facemask to improve the production of fabric non-medical PPEs based on WHO guidelines, so that the consumption of single-use medical PPEs would be reduced. Under Outcome 2, the project will deploy and implement the knowledge, procedures and technologies that will ensure that the additional waste generated during epidemic events are safely classified, segregated, collected, transported and disposed, avoiding therefore the generation of U-POPs associated to the burning of waste in substandard facilities or in landfill.

The project intends to provide support to ongoing activities undertaken by the government in the field of classification, collection, transportation and disposal of healthcare waste, with the specific purpose to increase the capacity of the healthcare facilities and TSD to manage the additional load of waste which may be generated during pandemic events in an environmentally safe way and in compliance with the Stockholm Convention BAT and BEP. . The assessment of existing and additional deployment of technologies for the pre-treatment of waste in hospital facilities will be undertaken in a way which will be both environmentally sound and financially sustainable

GEF Grant sought: USD 2,488,550

Component 2: Management of mercury, mercury-added products (MAPs) and mercury wastes in the healthcare sector according to the Minamata Convention on Mercury and the Philippine National Action Plan for MAPs phase-out

The COVID-19 pandemic has also exacerbated the challenges faced by the country in relation to mercury wastes management particularly in the healthcare sector. Policies to phase-out mercury-added products (MAPs), such thermometers, sphygmomanometers, etc, and to regulate the use of mercury in laboratories and healthcare facilities such as dental clinics brought about the collection and storage of these items but they remain undisposed and mostly kept in temporary storage.

The COVID-19 situation has highlighted struggles associated with fragmented policies, weak capacities, and poor access to viable investments to support adoption of global-best technologies and environmentally-sound practices. While mercury wastes generators from major industries seem to have more success in complying with regulatory requirements imposed by the DENR according to the Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (RA 6969), those from the healthcare sector are more challenged brought about by policies not responsive to their specific circumstances, inadequate capacity for data collection and monitoring, and inability to access investments to adopt best available technologies and best environmental practices (BAT/BEP). Accredited treatment, storage, and disposal (TSD) facilities qualified to handle mercury wastes are also limited.

The Philippine has recently deposited its instrument of ratification for the Minamata Convention on Mercury, signifying the country?s strong commitment to institute measures that will support its successful compliance to the agreements stipulated in the Convention, including provisions for the timely phase-out of MAPs and the sound management of mercury wastes, among others. A National Action Plan on Mercury Waste Management was developed in 2010 and a Minamata Initial Assessment was conducted in 2018.

In 2019, DENR updated the Chemical Control Order on Mercury and Mercury Compounds, DAO 2019 ? 20, to align with provisions from the Minamata Convention on Mercury particularly on MAPs and mercury wastes. At present, the IACEH is implementing the National Action Plan for the Phase-out of MAPs. The DOH has also recently issued Administrative Order 2020 ? 0020 to phaseout mercury use in dental restorative procedures. These are expected to further increase the generation of mercury wastes particularly from the healthcare sector.

Other ongoing programs of the DOH include Chemical Safety Training Programs for Heavy Metals and a Chemical Risk Assessment Program. Efforts from the Department of Trade and Industry to update the Philippine National Standards for lighting products and switches and relays to reflect

In support of ongoing country initiatives in relation to mercury wastes, especially from the healthcare sector, the project aims to assist government in updating the management plans and inventories in accordance with the Minamata Convention on Mercury, harmonizing policies and workplans across agencies; demonstrating BAT/BEP on mercury wastes management brought about by the phase-out of MAPs and the regulated use of mercury in laboratories and clinics; and facilitating access to private sector investments.

The first outcome under this component will focus on improving synergies by harmonizing policies and developing mutually-reinforcing workplans on MAPs and mercury wastes across responsible agencies; and institutionalizing a monitoring system for MAPs and mercury emissions and releases. Learnings from the previous implementation of the country?s National Action Plan on Mercury Wastes Management developed in 2010 and the recommendations from the Philippine Minamata Initial Assessment will be taken into account.

The second outcome intends to look into demonstrating the successful adoption of best available technologies and best environmental practices for the safe disposal and treatment of mercury wastes. Through UNIDO?s global experience and networks, methodologies, practices, approaches, and technologies will be introduced and demonstrated for adoption by healthcare facilities and treatment, storage, and disposal (TSD) facilities. Assistance may also be provided to MSMEs in the healthcare sector, facilitating their access to investment support from financing institutions to adopt BAT/BEP. In turn, these institutions will be assisted in the preparation of green finance packages that are responsive to MSME needs particularly those of the most vulnerable groups. These will be linked to the sustainability requirements for industry players instituted by the Securities and Exchange Commission (SEC).

GEF Grant sought: 1,507,200

Component 3. Capacity building and awareness raising	
There is very limited actions on information dissemination and capacity building on the issue of HCW management (esp. on u-POPs emission and mercury management) and in the country Limited technical knowledge environmentally-sound management and related BAT/BEP in the health care sector	The project will undertake capacity building activities related to the environmentally-sound management of infectious and hazardous wastes in the healthcare sector for government authorities, staff of healthcare facilities and TSDs, and civil society organizations.
Awareness on the environmental issues of generated wastes (esp. of households) is very limited	Awareness raising and advocacy programs targeting the general public, community leaders, schools, enterprises, private sector players, and other stakeholders will be conducted. IEC materials and relevant reports will be created, published and disseminated GEF grant sought: USD 478,500

6. GLOBAL ENVIRONMENTAL BENEFITS (GEFTF) AND/OR ADAPTATION BENEFITS (LDCF/SCCF).

130. Based on the 2018 report generated by the EMB regional offices, the average waste generation per bed is 1.39 kg/day. As of March 2021 WHO COVID-19 situation report in the Philippines, at national level, on the average, 30% out of 149,159 available hospital beds is occupied by COVID patients (around 44750) and, therefore, 70% occupancy for non-COVID cases. In the year 2021, however, the average bed occupancy as reported by the WHO situation report of 17 January 2021 was only in the order of 17,200 patients obviously, showing the decline in COVID-19 related hospitalization.

131. With the above values, it is estimated that the HC waste generated during the COVID-19 pandemic ranged from 241.2 to 295.5 tons per day in the last 18 months . Additionally, as per information reported in the baseline scenario, COVID-19 related wastes generated by households is estimated to be 22 tons per day. Thus, a total of around 263 to 321.5 tons/day of HCW is generated.

132. For a conservative estimate, if around 10% of the total amount of HC wastes generated ends up burned in the open, this would result in an emission of around 384 to 464 gTeq/year PCDD/F (adopting the UNEP 2013 toolkit emission factor for incineration without APCS). The amount of PCDD/F could be, however, much larger considering that a recent estimate from ADB envisages an additional amount of around 280 tons of medical waste generated daily only in the area of Metro Manila. Summary of the calculations are given below.

	Up to March 2021	**Jan 2021-Jan 2022**
Total Bed Numbers (WHO situation report March 2021)	149159	149159
Percentage of COVID-19 beds (WHO situation report March 2021) (WHO situation report Jan 2022)	30%	11.5%

COVID-19 beds	44748	17202
Ordinary beds	104411	131957
Generation ratio for normal beds (kg/day-bed) (EMB 2018)	1,39	1,39
Generation ratio for COVID-19 beds (kg/day-bed) (Project estimation)	3,36	3,36
HCW generated by ordinary beds (t/yr)	52973	66948
HCW generated by COVID-19 beds (t/yr)	54879	21097
Assumption: 10% of the waste get improperly burnt		
Improperly burnt HCW from ordinary beds (t/yr)	5297	6695
Improperly burnt HCW from COVID-19 beds (t/yr)	5488	2110
Assumption: U-POPs emission factor for substandard incinerator (40000 ug/t) is used for improperly burnt waste		
U-POPs from Improperly burnt HCW from ordinary beds (gTEQ/yr)	212	268
U-POPs from Improperly burnt HCW from COVID-19 beds (gTEQ/yr)	220	84
Total U-POPs	431	352
Household Health Care Waste (HHCW) associated to COVID-19 (face masks and others)		
Estimation from project baseline (22t/d estimate) (t/yr)	8030	8030
U-POPs from HHCW assuming 10% gets improperly burnt UNEP 2013 TK emission factor	32	32
Total UPOPs generated including HHCW	**464**	**384**

(Estimates: 149159 beds x 70% non-COVID patients x 1.39 kg/day = 145,1 ton/day for non-COVID-19 patients. Up to March 2021: 149159 beds x 30% COVID patients * 3.36 tons day = 150,3 ton/day for COVID-19 patients. In the period Jan 2021-Jan 2022: 131957 beds for non-COVID-19 patients * 1.38 tons day = 183,4 ton/day for non-COVID-19 patients; 17200 COVID patients * 3.36 kg/d = 57,8 ton/day for COVID-19 patients.)

133. One of the alarming information received during the project preparation is the indiscriminate use of disinfectants by some healthcare facilities. This would definitely contribute to a higher PCDD/F emission (estimated at 1098 gTEQ/yr) if wastes are improperly burned (practiced in some facilities) and may also contribute to pollution of water bodies. Thus, reduction on the use of chlorinated disinfectants to be pursued by the project is envisaged to lead to a significant reduction on U-POPs emissions and minimize its impact on water bodies. No previous data maybe used for calculation of this particular practice. Thus, some assumptions were used to calculate its impact on UPOPs reduction.

Chlorine added to waste: Assumption that 50grams of 0.1% chlorine bleach are added for disinfecting 1kg of COVID-19 waste	0.05
Additional chlorine load limited to the COVID-19 additional waste (tons of chlorine / year released with waste)	2744 t/yr
Conversion of chlorine in waste to PCDD/F in case of open burning - no reliable data available. Assuming 10x of the UNEP emission factor for HCW	1098 gTEQ/yr

134. The projects intends to avoid, through direct and indirect measures, (including training and awareness raising, better collection and environmentally safe disposal) that the additional HCW wastes generated due to the pandemic are improperly disposed of or burnt in landfills. At this stage, it may be estimated that around 18t/day of HCW (based on available project resources) or 4320 t/y assuming 48 weeks and 5 days operations will be processed through non-combustion pre-treatment technology, followed by proper final disposal. This will contribute to an additional 26.28 gTEQ/y.

130. Further indirect reduction of U-POPs may be achieved through proper awareness raising, technical assistance, avoidance of chlorinated disinfectant when unnecessary and reusable face mask. Assuming a conservative estimate of 30% avoidance of U-POPs generated from the healthcare and household healthcare waste (estimated to be 384 g TEQ/y for the period Jan 2021- Jan 2022), as well as the U-POPs release associated with the disinfection of waste with chlorine disinfectant (1098 g TEQ/y), the indirect UPOPs reduction is estimated to be 445 g TEQ/y, bringing the total of direct and indirect reduction of UPOPs to around 471 gTEQ/y.

133. The health care sector also generates mercury waste from lighting products and from procedures conducted in laboratories, clinics, hospitals, dental clinics and other healthcare facilities. The lack of facilities providing for ESM of these mercury containing waste led to a stockpile of mercury amounting to an estimated 10.43 tons Hg (or 434 tons/year of mercury-containing devices).

Mercury-containing Devices	**Activity rate* (items/yr)**	**Input factor** (gHg/item)**	**Total Hg input (kg)**
Medical Thermometer in Healthcare	238,133	1	238.13
Medical Thermometer in Household	468,981	1	468.98
Ambient Air Thermometer	310,500	3.5	1,086.75
Sphygmomanometer	34,572	75	2,592.90
Mercury from laboratory			3,635.00
Estimated mercury from dental amalgam	100,981,437	0.02384211	2,407.61
TOTAL			**10,429.37**

*Activity Rates were estimated on available data including Philippine Statistics Authority (2015 and 2018), Bureau of Customs. **Input factors based UNEP Toolkit 2.0 Reference 2017 as applicable

135. The project will assist in introducing BAT/BEP in the existing waste facilities and therefore facilitate the ESM of these existing stockpile. Moreover, it will establish the basis that after the closure of the project, mercury wastes will be managed in an environmentally sound manner. It is expected that the project will facilitate the ESM of 4 tons of Hg waste during the 4th year and 6.43 tons during last year of the project. This will sum up to 10.43 tons of Hg reduction and avoidance. Again, this maybe a conservative estimate considering the frequency of usage and replacement of mercury-containing medical devices. In addition, the introduction of BAT/BEP for the environmentally sound management of healthcare wastes and assistance to access the required financing is envisaged to facilitate the application of such techniques and practices for additional mercury added products in the country.

136. This project uses the opportunity to improve the management of health care waste with a coherent approach reducing the emission and releases of several substances of global concern. With this, the project is also expected to result to the following global environmental benefits:

? Reduced amount of the generation of healthcare wastes in general achieved through a country-wide effective communication concerning the better use of community face masks and reduced use of disposable PPEs;

? A significant reduction of the use of chlorinated disinfectants in households in favor of other less hazardous chemical;

? A better use of non-medical fabric face mask with a better protection against the virus and reduced consumption of single use PPE from household, so that

? medical shortage of face mask in the hospital would prevented;

? Promote the adoption of a circular approach in the manufacturing, use and disposal of the fabric, ?non-medical? face masks;

? Minimize or even eliminate exposure to mercury of stakeholders directly involved in the manufacturing of MAPs and in disposal and /or treatment of its associated wastes containing mercury, as well as those who may be exposed due to their lack of awareness on risks and those uses products with intentionally-added mercury

7. INNOVATIVENESS, SUSTAINABILITY AND POTENTIAL FOR SCALING UP. ?

Innovativeness

137. The innovativeness of this project lies in the following aspects:

? The assessment of the impact of various disinfection procedures and guidance on the health- and environmentally-friendly solutions alternatives will benefit the general public as a whole. To date, literatures have not provided clear guidance on this issue.

? The deployment of small scale pre-treatment technologies (like micro-wave sterilization) in the hospitals (specially small and medium sized hospitals unserved by service providers) will ensure that the waste which is generated will be promptly disinfected reducing at the same time the risk of infection for the operators in charge of medical care and transportation of waste within the healthcare facility.

? The project will promote inter-agency collaboration and consistency among policy frameworks across sectors. It will promote a paradigm shift in the usual thinking that the management of chemicals and their associated wastes are solely the concern of a select few.

? Another innovative approach is the facilitation of access to ?green financing? to support MSMEs in their obligation to promote sustainability in their operations as required by the Securities and Exchange Commission (SEC). This will assist eligible stakeholders in gaining access to financing programs for projects on improved compliance to waste management specifically on management of healthcare wastes which was previously not clearly incorporated in the existing loan structure of the Development Bank of the Philippines.

Sustainability

138. The strengthened policies and institutional capacities developed by the project will ensure the sustainability of the project outcomes. The involvement of multi-dimensional stakeholders also ensures that a harmonized approach to healthcare waste management (especially during epidemic or pandemic) is implemented.

139. The project intends to facilitate the establishment of a more sustainable management of a specific category of healthcare waste, by pursuing a circular approach which would involve manufacturing, use and disposal of PPEs. It is envisaged that, due to the recent pandemic, the use of PPEs will remain high or even increase as they will be more and more considered as a necessary mean to protect against pathogens. Therefore, the project intends to promote circularity by assisting manufacturers on the sustainability of their process, users in the understanding of the best modality of use and re-use, and waste management operators in increasing their technical and quantitative capacity to collect and process these waste. This will go well beyond the boundary of project implementation.

140. The sustainability of healthcare waste management, at both sides of healthcare facilities and communities, will be ensured through a targeted communication which will be based on modalities which are suitable for each audience: newspaper and tv to promote the better use and disposal of PPE for the public, technical guidance, training and workshop for the healthcare facilities. The communication will also cover the effectiveness of non-mercury equipment for the measurement of body temperature, given also the fact that this kind of equipment experienced a boom due to the current pandemic, although their technical features as well as their modality of use remain often not properly communicated. In terms of social sustainability, the project intends to protect the sector of the population which is considered at higher risk including women at home and in healthcare facilities, through dedicated awareness raising and training programs.

141. The institutionalization of healthcare wastes management in the loan structure of the DBP ensures access to financing opportunity for LGUs and public and private hospitals beyond the project. Development of manual to access financing from financial institution that will mobilize stakeholders to become self sustaining will facilitate loan access. Loans maybe accessed for the deployment of small non-combustion pre-treatment facility at hospitals or treatment centers that will allow for an easier handling of waste after disinfection, lowering at the same time the waste management cost and the environmental impact. This will also open the door to the discussion concerning additional options for the disposal of healthcare waste after disinfection, not limited only to landfilling, with a further assurance of environmental and financial sustainability.

142. The technical assistance provided to help MSMEs in the healthcare sector, including TSDs and manufacturers of PPEs access green financing schemes will help support the sustainability of project outputs. The knowledge products, manuals and guidance documents, prepared will help facilitate access to financing mechanism while green finance packages developed will be responsive to the needs of the MSME. The establishment of systems and mechanisms that will support long-term healthcare wastes management and facilitation of knowledge management, especially on POPs and mercury issues, will also help guarantee sustainability of project outcomes

Potential for scaling up.

143. With more than 1000 hospitals all over the country, the project outputs maybe easily scalable. The projects intends, indeed, to establish the basis for the piloting of a fully scalable system to be replicated and quickly activated in case of epidemic emergency. The full set of products which will be delivered by the project (communication packages, technical assistance for the manufacturing of PPE for the community, treatment of additional healthcare waste load, specific regulation, technologies for the identification and transportation of waste from scattered generators) will represent solutions that could be implemented quickly in cases of emergencies and further waves of the current pandemic.

144. The introduction of BAT/BEP for the environmentally sound management of health care waste and assistance to access the required financing will facilitate the application of such techniques and practices for additional mercury added products in the country. It is expected that this will reduce or avoid up to 20 tons of mercury emission and releases. It is expected that the project will facilitate up to 10 tons of this reduction during the last year of the project and facilitate another 10 tons after its closure.

1b. Project Map and Coordinates

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

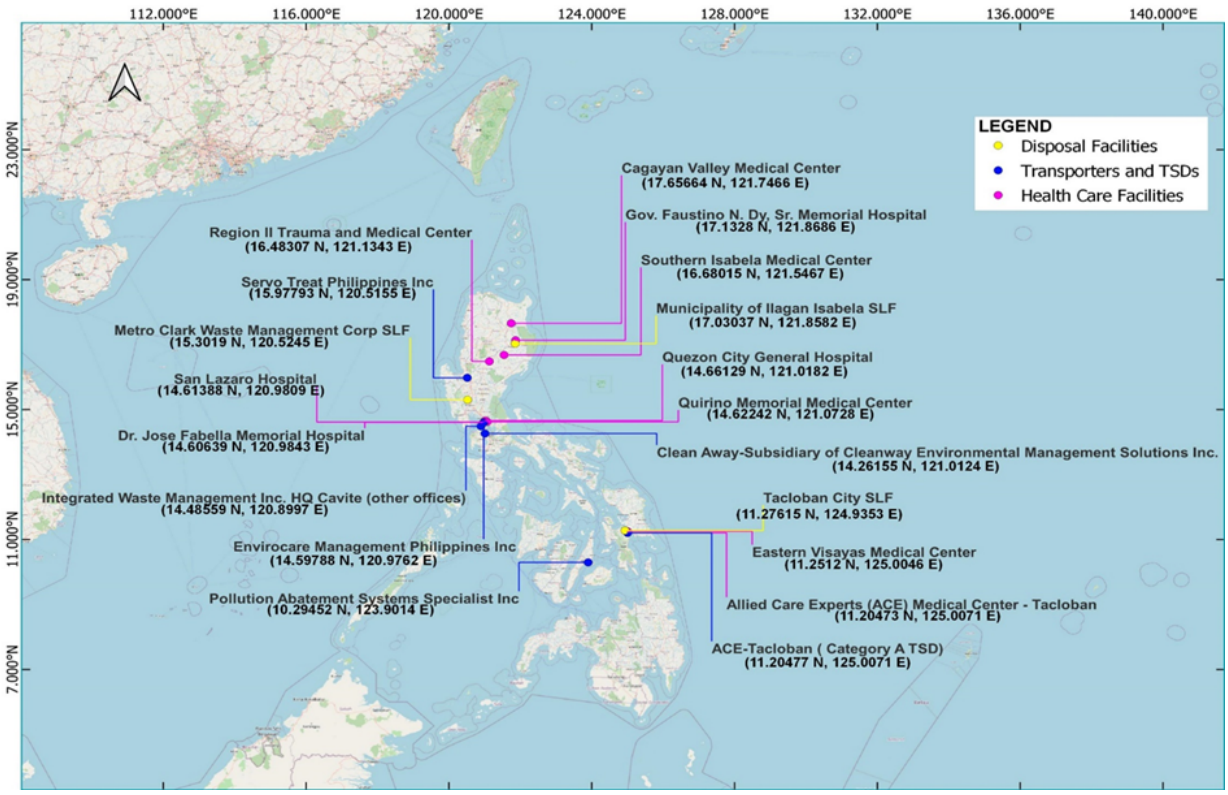
145. The proposed project sites are Region 2 (Cagayan Valley), Region 8 (Eastern Visayas), and the National Capital Region (Metro Manila). The selection is primarily based on the following criteria: (i) number of COVID-19 cases; (ii) lack of TSD facilities (Category A, B, and E) for M501 wastes in the region or the treatment capacity of TSD facilities could not accommodate the infectious wastes generated per day.

? The National Capital Region registered the highest COVID-19 cases. Moreover, its three TSD facilities, having a total treatment capacity of 58 tons per day cannot accommodate the 404.7 tons daily generation rate

? Region 2 does not have a single treatment facility. M501 wastes are stored in septic vaults. Most of the hospitals send wastes to Region 3, NCR or Region IVA (Calabarzon) for treatment.

? For Region 8, there is no facility to treat M501 wastes in the region. The existing TSD facility is Category F that collects M501 wastes for temporary storage prior to treatment and disposal in Region IVA. Other hospitals have their wastes collected and treated by a TSD facility based in region 7 (Central Visayas).

The coordinates of the project sites are provided below:



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 No

Private Sector Entities Yes

If none of the above, please explain why:

146. The project envisages collaboration with civil society, local communities and private sector entities on its activities. The participation of indigenous people is not foreseen.

Key project stakeholders have been engaged and consulted during the project development mainly on data validation (survey and online meetings), baseline data gathering, and future engagement in the project. Relevant ministries and regional offices have been met and consulted and close collaboration with possible pilot healthcare facilities, local government units and TSD facilities have been undertaken.

The table below lists down the stakeholder engagement activities under taken during the preparatory phase of the project:

Date	Activities	Attendees
June 16, 2021	PPG Inception Meeting	UNIDO, DENR EMB, DENR FASPS, DOH
August 26, 2021	Technical Evaluation of Offers received for Call for Expression of Interest on Project Execution	UNIDO, DENR EMB, DENR FASPS
November 29, 2021	UPOPs and Hg reduction in healthcare waste management	UNIDO, DENR EMB, Health Care Facilities, TSD Facilities
December 2, 2021	Presentation of the HACT Assessment conducted on ERGONS	UNIDO, DENR EMB, DENR FASPS, DOH
December 17, 2021	Meeting with Stakeholders	UNIDO, DENR EMB, Health Care Facilities, TSD Facilities
January 12, 2022	Meeting on Co-Financing	UNIDO, Development Bank of the Philippines
January 14, 2022	Follow up meeting and Engagement	UNIDO, Metro Clark Waste Management Corporation
January 20, 2022	Follow up meeting and Engagement	UNIDO, Envirocare Management Precision, Inc.
February 28, 2022	Finalization of Project Document	DENR-EMB CO, UNIDO
March 1, 2022	Presentation of Project Document to Implementing Agency	DENR-EMB CO, UNIDO
March 2, 2022	Hybrid (face to face and virtual) Stakeholder?s Meeting	UNIDO, DENR-EMB CO, DOH, Health Care Facilities, TSDs, DPB, Nomura Kosan
March 3, 2022	Meeting and Consultation with Region 8 Stakeholders and Field Validation	UNIDO, Allied Care Experts (ACE) Eastern Visayas Medical Center (EVMC), DENR EMB Region 8, DENR EMB Central Office

March 4, 2022	Meeting and Consultation with Region 8 Stakeholders	Local Government of Tacloban (CENRO), Eastern Visayas Medical Center (PCO), DENR EMB Region 8, DENR EMB Central Office, UNIDO
March 14, 2022	Meeting and Consultation with Metro Clark Waste Management Corporation	UNIDO, MCWMC
March 16, 2022	Meeting and Consultation with Ilagan Sanitary Landfill	UNIDO, Ilagan LGU
March 22, 2022	Meeting with Quezon City Memorial Medical Center and field validation	UNIDO, QMMC, DENR EMB CO
March 30, 2022	Meeting and consultation with DENR EMB Region 8, Ilagan Municipal Council, Tacloban LGU	UNIDO, DENR EMB Cental Office, DENR EMB Region 8, Local Governments of Ilagan City and Tacloban City

The list of key stakeholders identified by the project are listed in the table below:

Stakeholders	Mandate	Connection to the project
Government Sector		

Department of Environment and Natural Resources (DENR)	The Department collects and evaluate data on the state of the environment in the country. Based on these data, the Department develop/formulate policies, develop goals, strategies and plans for the sustainable use and protection of the environment. Depending on the area of responsibility, the state once act as expert consultants, issue statements, are a supervisory authority or a licensing authority. The diverse range of tasks includes waste management, plant safety, soil protection, geology, water and groundwater protection, food protection, climate change, noise and vibration protection, air pollution control, nature conservation and landscape management, substance and chemical evaluation, environmental management, hydraulic engineering, water supply, interdisciplinary and cross-media issues	The DENR is in-charge of the permit/ clearance processing and will issue the following: ? Registration ID of all hazardous waste generators and accreditation of TSD facilities through RA 6969. ? Permit to Transport of Hazardous Wastes to the waste transporter to be commissioned by the project. ? Environmental Compliance Certificate (ECC) to the project under PD 1586. ? Permit to Operate RA 8749 (CAA). ? Likewise, the Department will support the project by consulting on the environmental compliance monitoring standards In addition, the EMB Central Office (hazardous waste and chemicals sections) and its regional will have educational exchanges with other project partners such as Nomura Kohsan through trainings , workshops, and webinars. A train the trainer?s module together with the development or updating of existing project-related IEC materials is envisaged

Department of Health (DOH)	The Department of Health is the executive department of the Government of the Philippines responsible for ensuring access to basic public health services by all Filipinos through the provision of quality health care and the regulation of all health services and products. It is the government's over-all technical authority on health. It has its headquarters at the San Lazaro Compound, a long Rizal Avenue in Manila.	The DOH will issue the following: Guidelines on effective handling and management i.e. treatment and disposal of HCW Certificate of Product Registration for Equipment or Devices used for treating infectious wastes The Department will review/evaluate the health impact assessment (HIA) prepared for the project and issue HIA Clearance. DOH will ensure that the hospital partners shall comply with the DOH and DENR applicable regulations and harmonize the existing laws as regards implementation of ESM of HCW. This can be done through a policy review workshop which can be done on an annual basis with the participation of DOH, DENR EMB and project partners (hospitals and TSD facilities). Proceedings may be disseminated through memos and emails.
National Solid Waste Management Commission (NSWMC)	NSWMC?s mandate is to oversee the implementation of solid waste management plans of the local government units (LGUs) and prescribe policies to achieve the objectives of RA 9003.	RA 9003 implementation of the Local Government Units especially on the management of infectious wastes from barangay health centers, COVID-19 quarantine and isolation centers as well as those positive cases quarantined at home and busted fluorescent bulbs generated from the households and institutions.
Department of Trade and Industry (DTI)	DTI?s mandate is to foster a competitive and innovative industry and services sector that contributes to job generation and inclusive growth; and to advance the rights and responsibilities of consumers	DTI can provide linkages to manufacturers interested in the production of PPEs. The Department can also provide support in terms of industry policies, incentives, and market promotion
Development Bank of the Philippines	As the country?s pre-eminent development financial institution, DBP influences and accelerates sustainable economic growth through the provision of resources and banking services, principally catering to the medium and long-term needs of agricultural and industrial enterprises with emphasis on small and medium-scale industries	Provision of development finance services.

Members of the Hg-IATWG under the IACEH	The Inter-agency Committee on Environmental Health (IACEH) was established by virtue of E.O. 489 and is chaired by the Department of Health with the Department of Environment and Natural Resources acting as vice-chair. The Inter-agency Technical Working Group on Mercury (Hg-IATWG) under the IACEH was established to specifically look at mercury-related health and environment concerns, This was made possible through the support of the project on ?Promoting Ratification and Early Implementation of the Minamata Convention on Mercury	Update regulatory instruments and workplans in relation to mercury. Awareness-raising, advocacy, and education
Philippine Textile Research Institute of the Department of Science and Technology (DOST? PTRI)	PTRI is the textile research and development arm of the Department of Science and Technology acting as catalyst to spur growth in the industry through the planned development of growth centers and state-of-the-art service facilities for the textile and garments industries, with the aim producing competitive products and linking world-class Filipino products to the world economies. The institute performs the following functions: ? Conduct applied research and development for the textile industry sector; ? Undertake the transfer of completed researches to end-users or via linkage units of other government agencies; and ? Undertake technical services and provide training programs	The institute can assist in local raw material development for the manufacture of PPEs
Government Hospitals		Primary beneficiaries of project interventions
Private Sector		
PPE Manufacturers/ suppliers	As per issued permit or certificate from the BOI and LGU	The industry will supply the PPE requirement of Health Care Facility

Nomura-Kohsan Co. Ltd.	UNIDO and Nomura-Kohsan Co. Ltd signed a Memorandum of Understanding in 2014 in the prevention of Hg containing wastes from entering the environment by ensuring BAT/BEP applications in Hg extraction and identifying long-term solutions for Hg stockpiles	To support expert?s meetings and serve Experts for Mercury Added Products (MAPs) management through BAT/BEP approach. They will play vital role in the selection of technologies for MAPs from health care facilities.
TSD Facility Operators/ Waste Service Providers - IWMI - Servo Treat - MCWMI - PASSI - ENVIROCARE	As per issued accreditation and permit to operate by the DENR-EMB and service contract with the client	The facility will accept all infectious wastes generated from health care facility for treatment and disposal. The level of microbial treatment of infectious waste shall be conforming to DOH Manual or standard.
ERGONS Project Marketing Consultant	ERGONS Project Marketing Consultant (ERGONS) is a private consulting firm offering a diverse range of engineering consultancies and services and a full suite of project preparation, project management and specialized expertise to public and private sector organizations and international agencies.	ERGONS is endorsed by the DENR as the project executing entity.
Civil Society, Academe and Public Organizations		
Non-Government Organizations ? Health Care Without Harm ? Global Green & Healthy Hospitals ? Ban Toxic	NGOs works to transform health care to reduce its environmental footprint, becomes a community anchor for sustainability, and a leader in the global movement for environmental health and justice. The NGOs are working to implement ecologically sound and healthy alternatives to health care practices that pollute the environment and contribute to disease. Further, the NGOs aims to transform the health care sector, without compromising patient safety or care, so that it is ecologically sustainable and no longer a source of harm to public health and the environment.	Provide assistance in promoting the use of safe technology, conduct of risk assessment and communication plan to the public.

Philippine Hospital Association (PHA) and Philippine Medical Association (PMA)	The Philippine Hospital Association (PHA) is an organization that provides support to its more than 1,900 hospital-member in pursuit of the nation?s health agenda. Being national in scope, it is the voice of the public and private sector in matters affecting hospital management and delivery of health services to people. The PMA, on the other hand, is the association of medical practitioners in the country.	Coordination with PHA will be undertaken for the capacity building needs and awareness raising activities of the project The PMA maybe tapped in the promotion and implementation of the national guidelines on proper handling and management of HCW
Academe		The Academe provides technical assistance to policy makers especially on the appropriateness of the technologies to be used in treating infectious and hazardous wastes.
Local communities/ groups of people living in close proximity to a project that could potentially be impacted by its activities.		Risk communications shall be done to the residents living near the project sites. As the project (treatment plant) will cater in-situ generation of the infectious waste, there in medium of exposure that might happen to the community.
International Organizations and Bilateral Partners		
UNIDO	UN agency promoting inclusive and sustainable industrial development.	The project?s implementing agency
Ministry of Environment ? Japan (MoEJ)	The Ministry of Environment-Japan has been active in supporting the Philippines on advancing initiatives focusing on mercury-waste management through Philippines-Japan technical cooperation for mercury management	MOEJ will provide expertise and resources to support the Philippines in the development of its own mercury material flow develop a legal framework for the management of MAPs and facilitate technical knowledge sharing.
Institute for Global Environmental Strategies (IGES)	Achieve a new paradigm for civilization and conduct innovative policy development and strategic research for environmental measures, reflecting the results of research into political decisions for realizing sustainable development both in the Asia Pacific region and globally	The organization can provide policy support and relevant trainings in relation to mercury and mercury Management
World Health Organization (Philippines)	WHO is a specialized agency of the United Nations responsible for international public health	To support and complement the project activities as necessary, particularly in the use of WHO guidelines, addressing health risks, and knowledge/ information sharing and dissemination

Please provide the Stakeholder Engagement Plan or equivalent assessment.

The Stakeholder Engagement Plan and Grievance Mechanism is attached as **Annex K.**

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

Stakeholder Engagement Plan

147. This Stakeholder Engagement Plan (SEP) describes the planned stakeholder consultation and engagement process for the Project. It is a systematic approach to stakeholder engagement comprising of awareness raising, engagement, participation and sustaining activities that will guide the implementing agency and project partners, develop new approaches and maintain relationship with stakeholders all throughout the duration of the Project.

The project stakeholders and interested parties are identified during the PIF preparation, baseline scenario setting, assessment of the current health care waste (HCW) management and infrastructures, engagement with HCW generators, transporters, and treaters/disposal facilities. In addition, preliminary stakeholder mapping was conducted and gender assessment and shall be updated regularly throughout the project implementation in consideration of the project objectives, targets, outputs, and outcomes.

Stakeholder Engagement Approaches

Formalized Communications Plan: A Communications Plan will be prepared and implemented in the first year of project implementation and will be reviewed and regularly updated throughout the Project to ensure timely dissemination of relevant information and to gather feedback regarding the needs and priorities of all stakeholders. It includes the planned engagement activities, the responsible entity or implementing agency, the objective and purpose, target audience (national and local level, internal and external parties), participants or sector, tools to be used or mode of engagement and the schedule, timing, and frequency. It outlines the assessment and feedback platform, the metrics to be monitored and the forms and templates to be used. The resources needed such as virtual meeting rooms, training tools and equipment, communication materials (pen, markers, paper, whiteboard, laptop, projector, training manuals, presentation materials, among others) subject matter experts (SMEs) and logistical support such as transportation and accommodation facilities, if applicable. Further, permits and clearances from concerned authorities such as LGUs and DepEd, will be indicated in the plan for activities requiring them.

Social Inclusion: Based on the initial stakeholder mapping conducted in the PIF development, a socially inclusive consultation process will be implemented where a range of stakeholders, including those identified as vulnerable such as frontliners, health and waste workers, will be effectively engaged, adequately represented, and raised issues and concerns heard. Consultation methods will vary

according to audience, identified sector/affiliations, and levels of education. These will include the following: awareness raising campaigns, engagement and participatory and sustaining activities.

Transparency and Reporting: Consultation sessions will be well-documented, identifying attendees (men/women), topics discussed, feedback and issues raised by stakeholder groups, and outcomes or actions resulting from the consultation. Management measures shall be completed, disclosed, and discussed with stakeholders prior to implementation of any activities that may cause adverse economic, social. and environmental impacts. This may be done through a monitoring checklist, a dashboard or poster that can be disseminated to interested stakeholders and external parties or even QR codes for the status and milestones of the project.

National Level Engagement: the project management office of the DENR EMB and the Executing Agency, will build on the stakeholder consultation process that included the inception workshop, validation workshop and other bi-lateral meetings. A Project kick-off and inception meeting with key stakeholders will take place led by the Project Steering Committee. The Project inception meeting will include relevant agencies and departments. co- financiers, HC facilities, TSDs, LGUs and private enterprises. Academic institutes and Civil Society groups. The kick-off activity will raise awareness of the Project and validate the SEP including communication plan approaches. Promotional activities to strengthen and showcase the Project and its outcomes will take place at a regional and national level.

Local Site Level Engagement: The Project Steering Committee and PMO will work closely with key project partners and stakeholders as well as relevant local authorities and civil society organizations to identify ways of effectively raising general awareness on the benefits of an ESM of HCW.

Gender Equality and Female Empowerment: Supported through engaging women directly in the Project as active participants in capacity building sessions in HC facilities and HC waste management. The baseline data on gender and demographics will be used to determine the contributions of the project as regards to the community?s social, environmental and economic prosperity, safe management of waste and upskilling benefits i.e. becoming technicians and/or trainer. Gender equality and female empowerment shall be ensured by setting specific participation targets related to gender equality from the baseline gender analysis, improving the participation of women at various levels and supports women empowerment through career development opportunities during project implementation.

Stakeholders Engagement Activities including approaches and frequency as summarized in the table below. The activities have been appropriately embedded in the project activities and project resources (including cofinancing) will be utilized to ensure that proper and meaningful stakeholder engagement is achieved.

Engagement Activity	Purpose	Participants	Lead/Chair	Reporting	Schedule
Conceptualization and pre-project stage: Awareness raising and Engagement activities					

Webinars on Health Care Management, M501 waste treatment technologies; D407 waste treatment technologies	Increase awareness on the ESM of HCW especially on BAT/BEP highlighting environmental and social impacts especially the vulnerable sectors	HC facilities, TSD facilities, regulators, and public National Level: Regulatory Agencies, Project partners Local level: LGUs, Waste sector Sectoral: Academe, NGOs, Hospital Association, SMEs	UNIDO, DENR EMB, DOH, NSWMC and invited SMEs	In person presentations, seminars, meeting minutes, agenda, participant list, feedback form, compendium of BAP/BET technologies	Twice a year for five years
Meeting and consultation on HC waste management during Pandemic	Establish baseline on HCW management, updating of status of management and new policies, and mitigation of possible risks to the project in a timely manner	HC facilities, TSD facilities, regulators Local level: LGUs, Waste sector	UNIDO, DENR EMB, DOH	Webinars, virtual meetings, and presentation materials, follow through via email correspondence, records and proofs of these activities	Quarterly for five years
Meeting and Consultation with DENR EMB and DOH	Aligning of project objectives, proposed activities, agreement on the perceived outcomes and outputs of the project	HC facilities, TSD facilities, regulators National Level: Regulatory Agencies, Project partners Local level: LGUs, Waste sector	UNIDO, DENR EMB, DOH and Project Partners	Webinars, Consultations, Key informant interviews and focused group discussions Attendance sheet, proceedings, and minutes; list of action items	Once a quarter or as needed

Meeting with Healthcare Facilities, TSDs and LGUs (sanitary landfills) (Awareness Raising and ensuring sustainability of the project)	Presentation on the Information about the project and importance of environmentally sound management of health care wastes, baselining on the current waste management practices and procedures through sharing and discussion of invited hospitals as inputs for policy and project components	HC facilities, TSD facilities, regulators Local level: LGUs, Waste sector	UNIDO, DENR EMB, DOH	Meetings, consultation, focused group discussion, workshops; Attendance sheet, workshop document, proceedings, and minutes of the meeting	Once a quarter or as needed
Focused group discussion and key informant interviews (Engagement with proposed partners)	Establishment of existing HCW management from generation to disposal with special focus on current challenges	National Level: Regulatory Agencies, Project partners	UNIDO, DENR EMB, DOH	Development of questionnaire for Hospitals and TSDs, Review of questionnaire; Development of questionnaire for Hospitals and TSDs, Review of questionnaire	Quarterly or as needed
Roll out of Questionnaires for Hospitals and TSDs	To solicit data from the HCW sectors specially on short- and medium-term plans to craft a HC Waste management framework for the project and identify possible project partners and interventions including gender, climate change and transparency principles	National Level: Regulatory Agencies, Project partners	UNIDO, DENR EMB	Virtual meetings on how to fill-up the questionnaire and clarificatory sessions; attendance to this session; minutes of the meeting; Completed questionnaire, attendance on meetings and clarificatory sessions; presentation materials	Once during the first year of implementation

Key Informant Interviews	Localized assessment of HCW management and other challenges for the implementation of the project	Project partners ? generators, transporters, treaters and disposal facilities	UNIDO, DENR EMB	Data gathering, and proposed interventions were verified through key informant interviews especially in the identification of current challenges and management (short term and medium term) plans; List of interviewees, issues and concerns, suggestions, and recommendations	Once a year per partner or identified stakeholders by executing agency/TWG for five years
Follow through meetings (Securing commitment for the project)	Ensure commitment and engagement of project partners and entities	National Level: Regulatory Agencies, Project partners		Communication through email and provision of commitment template and co-financing templates/examples ; Completed commitment and co-financing templates; attendance sheet, minutes of the meeting	Once a month per proposed partner or as needed

Press Release/Project Information	To ensure wide quad-media (social media, websites, newspaper, radio and television) coverage for the project information/brief	HC facilities, TSD facilities, regulators, and public National Level: Regulatory Agencies, Project partners Local level: LGUs, Waste sector Sectoral: Academe, NGOs, Hospital Association, SMEs	UNIDO, DENR EMB, DOH, NSWMC, invited contributors and Executing Agency	Project information Form (PIF) made available to project partners and implementing agencies; Project brief; Number of Press releases about the project to the public via websites, newspaper, email correspondence	Once a quarter or more frequent
Implementation of the Project and construction of necessary facilities: Awareness Raising, Engagement and Participation					
Trainings/Workshops	Creation of Training plan by conducting training needs assessment, identification of focused areas for trainings, upskilling activities for the project partners and different sectors (local communities, academe, women, youth, frontliners/health workers/solid waste collectors)	HC facilities, TSD facilities, regulators, and waste sector	PSC, TWG and Project Partners	HCW management trainings and workshops for generators, transporters and TSD facilities; Attendance to trainings and workshops, number of trained personnel by gender, rank, and age groups	Twice a year, for five years

Workshop on the Development of Awareness Raising Materials	To develop ready-to-use tools for awareness raising campaigns based on the inputs of project partners, interested parties, and identified stakeholders To develop digital IEC materials for the different sectors	HC facilities, TSD facilities, regulators National Level: Regulatory Agencies, Project partners Local level: LGUs, Waste sector Sectoral: Academe, NGOs, SMEs	PSC, TWG and Project Partners	Execution of the identified IEC materials for the project such as manuals, tool kits and presentation materials; List of training materials developed and trainings using these materials, attendance sheets, training beneficiaries including LGUs and Academe; Recipients of the training materials, roll-out records of trainings and workshops	Once per project component implementation One training module per year
Press Releases and Communication Materials	to educate the public about the project and to increase awareness in view that the materials will be used in the academe and in local settings	HC facilities, TSD facilities, regulators, and public National Level: Regulatory Agencies, Project partners Local level: LGUs, Waste sector Sectoral: Academe, NGOs, Hospital Association, SMEs	PSC, TWG and Project Partners	IEC materials distributed and rolled out through sending hard copies, QR code access to electronic form of IEC materials, webinars, newspaper and uploading in websites; media releases, communication write-up; social media mentions; positive/negative feedbacks	Once a quarter for five years

Project Monitoring Reports	Ensure compliance and submission of mandatory reports	National Level: Regulatory Agencies, Project partners	PSC, TWG and Project Partners	Assessment and review of submitted reports; Quarterly monitoring reports and other mandatory reports submitted by Health Care Facilities; Results of regular Project Monitoring Report	Twice a year for five years.
Meetings and Consultations	To monitor status of the project and ensure smooth project implementation by reducing the risks of non-attainment of project goals	National Level: Regulatory Agencies, Project partners	PSC, TWG and Project Partners	Regular meetings of the PSC, TWG and project partners, may be virtual or face-to-face; Attendance sheet, issues and concerns raised, list of action items, status of action items, minutes of the meeting and consultations; presentation materials	Once a quarter for five years
Press Releases and Communication Materials	To ensure wide coverage of project milestones dissemination	National and Local level; public	UNIDO, DENR EMB, DOH, NSWMC, invited contributors and Executing Agency	IEC materials distributed and rolled out through sending hard copies, QR code access to electronic form of IEC materials, webinars, newspaper and uploading in websites	Once a year from year 2 to year 5

Celebration of Health Care Waste Management Day or Week	Increase awareness to the public and identify engaging participation from the health care sectors and provide input for policy	National Level: Regulatory Agencies, Project partners Local level: LGUs, Waste sector Sectoral: Academe, NGOs, Hospital Association, SMEs	PSC, TWG and Project Partners	**:** activities such as fun run, quiz bee for K-12, poster making contest for hospital patients and HC/TSD Facilities employees, creation of slogans, Recorida among others for each project partner that can be conducted simultaneously; Number of beneficiaries, attendance to trainings, list of identified technologies and practices; feedback to the activities; challenges encountered and mitigating measures, slogans, and posters	Quarterly Activities for the 5 years of project implementation

Livelihood Creation Activities	Ensure engaged commitment and participation to the project especially small to medium enterprises Encourage innovative solutions and initiatives for HCW Management	National Level: Regulatory Agencies, Project partners Sectoral: Academe, NGOs, Hospital Association, SMEs	PSC, TWG and Project Partners	Involvement of SMEs for PPE production and supplies needed in the proper management of health care wastes; identification of cost-reduction measures based on the identified best environmental practices and technologies (BAT/BEP); Number of beneficiaries, attendance to trainings, list of identified technologies and practices; feedback to the activities; challenges encountered and mitigating measures	Once a year national level and once a year for the applicable sector
Completion and post-project stages: **Participation and Sustaining**					
Local trainings and consultations	Presentation of key learnings of the projects	National Level: Regulatory Agencies, Project partners Local level: LGUs, Waste sector Sectoral: Academe, NGOs, Hospital Association, SMEs	PSC, TWG and Project Partners	Sending out links for access of the learning materials from the projects highlighting lessons learned and how challenges and obstacles were managed Participants? list/attendance, proceedings and minutes, feedback, and review	Once a year for on the 4th and 5th year

Post-project visioning activities	To ensure sustainability of the project post-project scenario	National Level: Regulatory Agencies, Project partners	PSC, TWG and Project Partners	Face to Face and Virtual Meetings, consultations and sharing of plans on how the project will be sustained considering post-project scenarios such as Build/Operate (BO) and Public Private Partnership (PPP) arrangement Feasibility studies, results of trainings and workshops, attendance sheet, list of action items and lessons learned	Once a quarter for the 3rd to 5th year of project implementation
Townhall Meetings	To presentation of the status of the project, highlights/milestones, outputs and key learnings of the projects	National Level: Regulatory Agencies, Project partners and public Local level: LGUs, Waste sector Sectoral: Academe, NGOs, Hospital Association, SMEs	PSC, TWG and Project Partners	Presentation and discussion of the achievements of the project, performance on the goals and objectives; Hybrid platform; Attendance in face-to-face participants and virtual platform, feedback of the meetings, list of issues and concerns raised and recommended actions	Once a quarter for the 3rd to 5th year of project implementation

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor; No

Co-financier;

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

Executor or co-executor; No

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

148. Gender equality, as a basic human right, has been recognized as one of the United Nations Sustainable Development Goals (Goal 5). Women?s social and economic empowerment, as well as gender equality, also lie at the core of UNIDO and many other United Nations system organizations? mandates. Gender equality and women?s empowerment, are not only the means to achieve sustainable social and economic development, but also ? more importantly ? the end in themselves. During the process of empowering women, their contributions should be recognized and encouraged. A detailed gender analysis **(Annex L)** was conducted by the project to understand the gaps and the barriers in achieving gender equity in the healthcare waste sector. The analysis was used to define and outline the gender mainstreaming strategy of the project.

149. The concept of gender mainstreaming is a globally agreed strategy for achieving gender equality and women empowerment and it was defined by the United Nations Economic and Social Council in 1997 as "a strategy for making women's as well as men's concerns and experiences an integral dimension of policies and programmers in all political, economic and societal spheres? so that women and men benefit equally and inequality is not perpetuated". In the realm of practices, following UNIDO?s Gender and Equality Empowerment of Women Strategy (2016-2019), gender mainstreaming calls for the inclusion of both women and men?s concerns and experiences into the ?needs assessment, design, implementation, monitoring and evaluation?.

150. Gender mainstreaming will be an integral part of the project, which contributes to gender equality and empowerment of women through: a) raising awareness of UPOPs and Mercury and their harms on women?s (and men?s) health; b) enhanced protection against work-related injuries and infections, as well as enhanced overall wellbeing; c) promoting women?s participation in decision-making and female leadership; and d) promoting women?s participation in science, technology, engineering and mathematics (STEM) field and women?s participation in paid labor in general.

151. The 1987 Constitution of the Republic of the Philippines recognize the fundamental equality between women and men before the law, as well as the protection of working women through safe working conditions. Similarly, the Constitution also prioritizes the needs of women and other underprivileged communities in ensuring their health development. The Magna Carta of Women (Republic Act No. 9710) serves as the nation's comprehensive women?s human rights law, stipulating the rights of every women to non-discrimination in employment, comprehensive health services, information and education. Labor Code of the Philippines (Presidential Decree No. 44, as amended by RA 6715) stipulates rights to equal pay and equal access to promotion and training opportunities between genders. These are all the broad legal framework within which the proposed project will be operating. Overall, the Philippines has closed 78.4% of its overall gender gap according to the 2021 WEF-Global Gender Gap Report, achieving the second best performance across the East Asia and Pacific region and 17th position globally.

152. Nonetheless, challenges brought by the COVID-19 pandemic are gendered in nature, and are putting pressures on the gender equality situation for the health care sector and health care waste management industry. First, women are predominantly taking up the caring duties within households and in wider societal settings, making them more vulnerable towards infectious waste. This may be coupled by the discrepancy and gap in access to STEM related information, education and technological resources between men and women on how to handle hazardous waste safely. Furthermore, there are also medical and socio-economic risks, as well as overtime work exhaustion and anxiety imposed by the pandemic on related personnel. While this applies to bother gender groups, it is especially burdensome for already vulnerable and marginalized communities.

153. Scientific research to date has also identified the sex-differentiated risks of UPOPs on male and female bodies, while Mercury also poses harms to human fertility and women?s pregnancy outcomes. Viewed all aforementioned sectors together, it is essential to gender mainstream the project of ?Reduction of Unintentionally produced Persistent Organic Pollutants (UPOPs) and Mercury (Hg) through an Environmentally-Sound Approach on Health Care Wastes Management in the Philippines with a Special Focus on the Pandemic?.

154. Socially and economically, this project aims to enlarge female participation in decision making and offer training for female employees and technicians to promote their involvement in STEM. This component will record gender ratio and set targets for women participation. The guidance sources for incorporating gender mainstreaming in the project are as follows: the UN System-wide Policy on Gender Equality and the Empowerment of Women, and the UNIDO?s Policy on Gender Equality and the Empowerment of Women. This project will also provide dedicated trainings for employees and professional managers with a special focus on gender awareness and development agenda.

155. Based the background analysis of the overall gender equality in the Philippines, as well as the field work research conducted between November 2021 and February 2022, we obtained a set of gender-related information regarding a) their personnel and employment, b) handling healthcare waste, c) welfare, d) impacts of COVID-19 pandemic, and e) future investment and needs on the management of waste. We have also evaluated the institutional and policy environment for gender mainstreaming

actions through interviewing three governmental agencies, i.e. Department of Health -Disease Prevention and Control Bureau (DOH-DPCB), Department of Health-Health Facilities Development Bureau (DOH-HFDB), and Department of Environment and Natural Resources-Environmental Management Bureau (DENR-EMB).

156. Based on the gender analysis conducted, below are some key summaries of findings from the survey of baseline data for the gender mainstreaming action plan:

? In the healthcare sector, female employees take up the majority (62% female). The division of labor is less pronounced, however, females also take up disproportionately more out-sourced jobs, indicating less entitlement to paid Covid-related sick leave and other general employment benefits. Challenges posed by the pandemic are thus highly gendered in nature: Female employees on temporary contracts may be at a greater socio-economic vulnerability, especially in hazardous work environments and under stressed times.

? The waste management sector are male-dominant (89% male); similarly, the landfill facility composes of 264 male employees (85%) and 46 female employees (15%). There is hence a noticeable difference in gender between the health care and waste management industries. In the latter, there is a clear division of labor by gender, as technical and heavy-duty works are mostly assigned to male employees, while females take up managerial and administrative roles.

? In terms of leadership composition by gender, both industries fare quite well. Nearly all entities surveyed achieved a (close) gender parity in leadership.

? All TSDs, HCFs, and the landfill report of experiencing a significant increase in the health care waste generated and managed. They report of not having gender-specific guidelines or manuals for handling M501 waste, or for dealing with exposure to hazardous elements and waste.

? All respondents confirm the equal access of PPEs for employees regardless of their contract type, especially for those directly handling infectious waste. However, there is no distinction between PPEs in sizes, compromising their protection for workers of smaller build, who are normally women.

? Most entities surveyed report of having a protocol for supporting and monitoring employees exposed to hazardous elements, infections or injuries, while there seems to be a lack of scheme in identifying socio-economically vulnerable workers to offer additional support.

? There are annual (TSDs) or less frequent (HCFs) regular gender awareness training in place within both industries. On the other hand, some good practices on gender awareness and development from industries and governmental bodies have been identified.

? Governmental bodies annually issue guidelines on GAD planning and reporting; however, there is a gap in learning opportunities dedicated for female in the design, management, and evaluation of environmental programs. There is a similar lack of gender-sensitive Information, Education and

Communication materials, as well as a low technical capability. The importance of having and promoting female role models in the HCW management industry is commonly emphasized.

? Future training needs for gender equality, diversity and women?s welfare in the work place have been flagged by respondents.

157?Gender and Development (GAD) considerations will be made an integral part of the project strategy in consideration of the Gender policies of the GEF, UNIDO and the Government of the Philippines. In line with the UNIDO guide on gender mainstreaming for environmental management projects and UNIDO gender mainstreaming tools, this project conducted a detailed gender mainstreaming analysis pertaining to the the Reduction of Unintentionally produced Persistent Organic Pollutants (uPOPs) and Mercury (Hg) through healthcare wastes management.

158? The gender analysis undertaken has examined the health care sector and the health care wastes management industry (with a special focus on hospitals and TSD facilities) of the Philippines and provided recommendations based on the data gathered on how gender maybe mainstreamed in the project. Gender indicators are also provided in the logical framework of the project. A midterm and final analysis on gender mainstreaming will be undertaken to monitor the results and to evaluate the achievements of the project on gender and development issues.

159?It has been noted that one of the key actions undertaken by the GEF relative to gender mainstreaming was to incorporate gender responsive approaches and indicators in the GEF-7 focal area strategies in which focal area projects will incorporate GEF gender indicators which will be monitored in the project eventually. UNIDO, for its part, recognizes the significant positive impact on sustained economic growth and sustainable industrial development generated by gender equality and the empowerment of women. UNIDO adopted a policy on Gender Equality and the Empowerment of Women in 2009. As a consequence, the organization commits to engage all men and women equally in all of its organizational practices, policies, programmes and projects.

160?In line with UNIDO?s Gender Equality and Empowerment of Women Strategy 2020-2023, considerations for gender mainstreaming, gender equality, and women?s empowerment in this project are as follows: i) ensuring women?s access to resources and technologies that enhance their health and well-being, ii) recognizing women?s role as key agents of environmental actions; iii) promoting women?s engagement, leadership and decision-making; and iv) having a fair representation of women and men?s distinct needs and priorities in the process. Gender dimensions are thus a prerequisite in the design, implementation, monitoring and evaluation of programs, projects and activities with tools and guidelines on mainstreaming gender in the whole gamut of project management.

161?This project aims to work closely with hospitals and wastes management companies involved in the generation and handling of healthcare wastes. From a GAD perspective, this project aims to raise awareness for uPOPs and Mecury, to continuously empower women and marginalized communities through economic and social means, especially amid the current pandemic situation, to enlarge female participation in decision-making and management, and to encourage female participation in science, technology, engineering and mathematics (STEM) field and females? participation in paid labor in

general. To address these aspects, this project proposes to include a comprehensive set of gender mainstreaming strategy to promote gender equality and women?s empowerment.

162?This gender mainstreaming strategy is mostly concerned with the following four aspects of gender awareness and development agenda, i.e. a) the occupational health and safety of health care and waste management workers, b) the social and economic exclusion/empowerment of women and vulnerable communities, including the elderly, single heads of households, and others with limited access to adequate health care (some of which can be overlapping categories), c) the overall physical and mental wellbeing of personnel, and d) the access to information and knowledge relevant to healthcare waste management. The so far identified contributions of this gender action plan fall on five fronts: a) enhanced protection, health and welfare benefits for health care workers and HCW management personnel; b) the socio-economic empowerment of women and vulnerable communities through capacity building, awareness raising, and via the identifying and additional support scheme; c) increased female engagement in the decision and policy making process; d) enhanced access to knowledge, information, and best practices on gender mainstreaming for all stakeholders; and e), lastly, this project aims to close existing gap in the lack of gender-disaggregated information on health care waste management, and to showcase gender mainstreaming practices for future projects on the phase out of uPOPs and Mercury in similar settings.

163. A 3X3 gender analysis matrix might be helpful in understanding this project?s positive impacts and risks on gender equality and women?s empowerment. Where risks are identified, they are categorized as either major or minor, and corresponding mitigating measures are proposed.

	Employment	**Female Leadership**	**Wellbeing**

Women	+ More direct and focused training regarding health care waste handling + Enhanced employability in relevant sectors + Female entrepreneurship in waste management industry +Enhanced employment security through additional support to counter the effects of COVID-19 pandemic - Risks of being marginalised in the male-dominant waste management industry (*Minor*) ? Mitigating Measures: Promotion of female role models	+ Increased chances of female participation in decision-making + Enhanced capacity and awareness regarding the gender and waste nexus among professional managers	+ Increased awareness on health care waste related risks, sustainability issues, and on its proper management + Reduced exposure to hazardous waste and uPOPs (esp. Mercury) and related anxiety; enhanced physical and mental wellbeing + Enhanced protection through the provision of more adequate (in size) PPEs + Increased institutional attention to the mental wellbeing agenda and increased support - Work-related risks posed by the COVID-19 pandemic (*Major*) ? Mitigating Measures: Full vaccination and continuous monitoring and compensation schemes for work-related injuries and infections -Risks relating to stigma and discrimination of all personnel along the HCW management chain (*Minor*) ? Mitigating Measures: Community outreach on the safe handling of waste and self-protection

Men	+ More direct and focused training regarding health care waste handling + Enhanced employability in relevant sectors	+ Enhanced capacity and awareness regarding the gender and waste nexus among professional managers	+ Increased awareness on health care waste related risks, sustainability issues, and on its proper management + Reduced exposure to hazardous waste and uPOPs (esp. Mercury) and related anxiety; enhanced physical and mental wellbeing + Increased institutional attention to the mental wellbeing agenda and increased support - Work-related risks posed by the COVID-19 pandemic (*Major*) ? Mitigating Measures: Full vaccination and continuous monitoring and compensation schemes for work-related injuries and infections -Risks relating to stigma and discrimination of all personnel along the HCW management chain (*Minor*) ? Mitigating Measures: Community outreach on the safe handling of waste and self-protection
Community and Youth	+ Increased entrepreneurship opportunities and employability in the waste management industry	+ Enhanced awareness about female participation, gender parity in decision-making, and also about roles models in relevant industries	+ Increased awareness and knowledge on the safe handling of health care waste and on environmental sustainability + Reduced exposure to and related stress about Mercury and infectious, household-generated waste; enhanced physical and mental wellbeing -Risks relating to stigma and discrimination faced by households of HCW management staff (*Minor*) ? Mitigating Measures: Community outreach on the safe handling of waste and self-protection

164. The particular gender mainstreaming actions and budget plan is as follows:

Gender Mainstreaming Activities	**Outputs**

1. Gender and development awareness training workshops for employees in the medical sector	Target of at least 50% reached for the percentage of female managers trained; Training materials can be summarised and readapted into general GAD training framework for wider dissemination
2. Gender and development awareness training workshops for professional managers in the medical sector	Target of at least 50% reached for the percentage of female managers trained; Training materials can be summarized and readapted into general GAD training framework for wider dissemination
3. Dissemination of knowledge and best practices regarding achieving gender parity in healthcare and HCW management industries	Information, Education and Communication materials prepared and disseminated to wider audiences; Related workshops for knowledge dissemination organised for decisionmakers, with gender parity achieved among attendants
4. Dissemination of knowledge and best practices regarding the support and care of vulnerable workers in healthcare and HCW management industries	Information, Education and Communication materials prepared and disseminated to wider audiences; Related workshops for knowledge dissemination organized for decisionmakers, with gender parity achieved among attendants
5. Development of gender-specific guidelines and manuals for handling and managing health care waste	Clear, constructive, and practical guidelines addressing the differed psychological and physiological risks and needs of female and male workers drafted and approved
6. Provision of different-sized PPEs to medical workers and waste management personnel	Procurement and distribution of close-fitting PPEs to relevant personnel, especially to smaller-sized employees who were previously unable to attain adequate-sized PPEs
7. Capacity building workshops and focus groups for female entrepreneurs, especially of SMEs, in the management of healthcare waste	Workshops and focus groups regularly organized; outputs summarized and prepared for wider dissemination
8. Capacity building workshops and focus groups for heads of households on safe handling of home-generated healthcare waste	Workshops and focus groups regularly organised; outputs summarised and prepared for wider dissemination
9. Collection of gender-disaggregated baseline data on the healthcare and waste management industry	Wider collection of data based on existing survey formats from this project; Creation of a GAD database for result monitoring (combined with Activity 11)

10. Stakeholder consultation meetings with groups and organizations on gender awareness and development, as well as stakeholders working on inclusion and empowerment of marginalized communities	Minutes of meetings prepared; Experiences and lessons summarized and prepared for wider dissemination if applicable
11. Development and further refinement of gender indicators to monitor the implementation of the project with relevance to gender mainstreaming	Quantifiable gender indicators developed to report on and comparatively analyze gender mainstreaming results (combined with Activity 9)
12. Further review of industrial and corporate policies and guidelines regarding the management of healthcare waste(HCW)	Entry points for gender mainstreaming (GM) existing policies identified; GM guidelines for HCW management developed

165. Adequate financial resources shall be allocated to support the following gender mainstreaming proposals. It would be ideal to set and allocate a percentage (e.g. 5%) of the total budget of the employer organization and to be spent on gender and development related purposes. Similar practice has been in place for governmental agencies, and this can be promoted among HCFs and TSDs.

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 Yes

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.

166. Private sector engagement is a key element in the achievement of the envisaged global environmental benefits. The following stakeholders will be engaged by the project:

Treatment, Storage and Disposal Facilities: Considering the gaps identified in the healthcare management system in the country, the role of service providers (transport to disposal) in the sector is highly significant. Several TSD facilities were surveyed for baseline information and subsequent meetings and discussion have been undertaken. TSD facilities will be primary beneficiaries of technical assistance and trainings in the project. This will include technical assistance to ensure compliance with the requirements of the SWEEP program being offered by DBP. An assessment of their existing methods and technologies in handling healthcare wastes including those containing mercury revealed

areas of opportunity for process updating in compliance with the Stockholm Convention on POPs and the Minamata Convention on Mercury. Several investment possibilities to address increasing requirements have been identified to support the technology and infrastructure upgrade. Currently, the project has identified IWMI, MCWM and Envirocare as potential partners.

Small entrepreneurs on PPE manufacturing: The project has initially identified the Confederation of Philippine Manufacturers of PPE (CPMP), a group of 5 garment manufacturers that diversified their products to cater to medical or health care-related PPEs. However, the project will also identify small manufacturers of non-medical face masks for the community, with priority ensured to women entrepreneurs, to be engaged through training and technical assistance related to the technical standards of these products, consistent with WHO guidelines, selection of proper materials for the products and their packaging, aspects related to circular economy and cost effectivity in the manufacturing of such product and in business planning. This work can be done in collaboration with the Philippine Textile Research Institute of the Department of Science and Technology (DOST ? PTRI) and the Department of Trade and Industry (DTI) to leverage public resources in mobilizing private sector investments.

Entrepreneurs on healthcare waste management: Micro, small, and medium-sized enterprises (MSME) comprise more than 99% of Philippine enterprises. They often to not have the capacity nor a proper access to both technical and financial support to invest on sustainable approaches in their operations. In the Philippine healthcare sector, concerns around circularity, chemicals and wastes management, climate change mitigation, among others, are paramount. MSMEs are often left out with the bigger players having more access and capacity to take advantage of innovative approaches and technological advancements. The project will work closely with enterprises in the healthcare sector to promote private sector investments. MSMEs will be provided with technical assistance to prepare project proposals promoting circularity and environmentally-sound waste management, accessing financial support from various financing institutions, particularly those with an envelope for green investments. At the same time, the project will harmonize relevant financing systems in the country, coordinate efforts with development banks and financing institutions, and promote sustainability reporting through green finance mechanisms. This work can be done in collaboration with the Development Bank of the Philippines and the Association of Development Financing Institutions in Asia and the Pacific (ADFIAP), with goals to engage other development financing institutions during the duration of the project.

Mercury waste management facilities: Collaboration with mercury waste treatment facility from Asia and possibly, Europe will be facilitated to ensure that the latest BAT/BEP will be introduced in the Philippines. Transfer of technologies and expertise from these facilities will explored. Nohmura-Khosan of Japan will facilitate exchange of knowledge and provide their expertise and our experience regarding the management of thermometers and sphygmomanometers (MCMMDs)generated from medical institutions in Japan.

Hospitals, health facilities, and hospital associations: Hospitals and health facilities will be capacitated to implement the national guidelines on proper handling and management of HCW. Technologies will be demonstrated for the low-cost, small scale non-combustion pre-treatment of

wastes generated during the pandemic. Synergies between public and private facilities may be maximized through local government units, hospital associations, and the Department of Health.

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):

167. The following table illustrates the risk matrix for the project:

Type of Risk	Description	Proba-bility before mitigation	Impact before mitigation	Risk level before mitig a-tion	Mitigation measures established at implementation and through ESMP	Prob a-bility after mitig a-tion	Impac t after mitiga -tion	Risk level after mitig a-tion
Financial	Co-financing requirement for M501 treatment not met	2	3	L	Beside the commitment letters achieved at PPG stage, meetings, interview, technical exchange and where possible, site visits to their facilities have been carried out to ensure that the required co-financing is in place and ready to be mobilised. Continuous monitoring during project implementation will reduce potential issues with co-financing.	1	2	VL

Financial	Lack of funds to run and operate the treatment/ disposal facility for M501 and mercury waste	2	4	M	The project will provide support for the treatment of M501 and mercury waste during implementation, and at the same time will work toward the implementation of a more sustainable market for the disposal of such waste to ensure that the delivered technologies and techniques are sustainable even after project end. That will also achieved in coordination with financial entities which are partner with the project	1	2	VL
Regulatory	Policy gaps and unclear mandates of relevant regulatory bodies in the field of M501 waste	3	3	M	The project will ensure that review of policies and harmonization will be undertaken in full coordination with the relevant institutions.	2	3	VL

Social	Limited participation for M501 management of healthcare facilities and TSDs	2	3	L	The management of HCFs and TSDs were fully involved at project preparation stage and the number of them willing to participate exceed project expectations. Therefore, the issue of limited participation is not a risk at design stage. The risk is considered limited even at implementation stage, however the project will continue to exchange with these stakeholders to be sure that their commitment, as well as the understanding of their needs, are high.	1	2	VL

Social	Lack of Social Acceptance especially for TSD facilities	3	3	M	The project envisages carrying out massive awareness raising campaigns to promote the acceptance of TSD facilities adopting Best Available Techniques and Best Environmental practices, so that TSD adopting these standards will be facilitated in their relationship with the community	1	2	VL
Social	Continued use of Hg-filled instruments	3	4	H	The project envisages carrying training and massive awareness raising campaiggn to promote the replacement of mercury containing devices at all levels (HCF, laboratories, individuals). It will also deploy the technical and financial support for the collection and disposal of such devices.	2	3	L

Management	Availability of M501 generated wastes to meet the U-POPs targets	1	3	L	The project has identified a number of partners whose generation of M501 waste meets the expected U-POPs targets. Continuous monitoring of this parameter will be carried out to ensure that the compliance with the target will be met	1	2	VL
Environmental	Environmental pollution associated with healthcare waste and their management	3	4	H	Health care waste management include pollution prevention and control, hazardous materials handling, storage, treatment, and disposal. The project will ensure that the management of HCW is carried out in an environmentally safe manner, compliant with the BAT and BET in all the project partners' facilities.	2	3	L
Health	Exposure to pathogens and hazardous chemicals related to healthcare waste and their management	3	4	H		2	3	L

Social	Risk of continuing or increasing gender inequality	1	3	VL	A gender management plan, with indicators, timeline and budget has been developed. HCFs and TSDs have been requested, at project drafting stage, to provide an analysis of GM aspects in their premises and to be compliant with UNIDO rule on Gender Mainstreaming . The implementation of the GM plan will be part of the general project Monitoring and Evaluation activity.	1	2	VL

Management	Failure to meet project objectives in term of treatment/recycling technology for Mercury and M501 wastes	2	4	M	The project implement all the UNIDO, UN and GEF standards to ensure that the objectives are met within the deadline set. Continuous project monitoring, lesson learning procedures and mid-term review will facilitate the adaptation of project activities to achieve the committed target in case any deviation is identified.	1	3	VL
Climate	TSDs and HCFs being affected by extreme weather events and flooding attributable to climate change	3	4	H	Philippine is a country which is prone to flooding and extreme meteorological events like tropical storms and hurricanes. In selecting the TSDs and HCFs for the demonstration of HCW and mercury management, selection criteria will include hydrogeological risk and the existence of emergency plan and measures to reduce the impact of flooding.	2	2	VL

Climate	Increased GHG emission	3	4	H	This is a baseline risk which is expected to be reduced by the project. The project will indeed demonstrate and promote the use of non-burning equipment for the disinfection of healthcare waste to reduce thermal destruction and accidental burning in unofficial landfills, with the associated reduction of GHG release	2	3	L

LEGEND: Probability and Impact (1=very low; 2=low; 3=moderate; 4=high; 5=very high) ; Risk Level (VL 1 to 4; L 5 to 8; M 7 to 10; H 11 to 15; VH 16 to 25)

Climate Change Risk

As stated by the Second National Communication 2014 to the UNFCCC (NC2), ?The mere location of the Philippines on the tropical rim of the Pacific Ocean and its archipelagic grouping of waterbound islands make it highly vulnerable to the atmospheric disturbances and environmental irregularities resulting from climate change.? 2. The Philippines? ranking on vulnerability to climate change has moved up from No. 12 to No. 3, meaning it has become more vulnerable compared to other countries. Furthermore, the frequency of tropical cyclones in the Philippine is higher than in any other region of the world, with up to 20 tropical cyclones entering the Philippine Area of Responsibility and up to 9 hitting the land.

Based on the latest report from the Philippine Atmospheric, Geophysical and Astronomical Service Administration (PAGASA, 2018) , the observed temperature in the Philippine is rising at an average rate of 0.1?C/decade. Assuming the moderate emission scenario, the increase in the mid 21st century can reach 0.9?C to 1.9?C, whilst for the high emission scenario the increase can reach 1.2?C to 2.?3 C. The same source reports an increasing trend in annual and seasonal rainfall. This is also supported by the data from Salvacion et al. (2018) reporting significant trends in monthly rainfall, with an increase of 0.34 mm/year .

Based on the Climate Risk Profile for the Philippines [2018], climate change will impact mostly the agricultural sector, and will negatively affect the availability of water resources and energy, as well as urban infrastructures. Factories and infrastructures located near landslide-prone areas or near coastal areas are obviously also facing significant risks.

For the project, climate change risk has been identified. While 2 of the project regions, NCR and Region 8, are vulnerable to climate impacts including typhoons and flooding, the project sites identified, Quezon City and Tacloban City, have recorded very low flooding incidence. Mitigation measures including emergency plans will also be developed to ensure that risks due to climate change will be avoided.

COVID-19 risk

Beside the intrinsic and obvious risks associated with the infection with the new coronavirus, the COVID-19 pandemic has been and continues to be a source of risk for the society and the healthcare system in the Philippine and worldwide. The impact on the waste management system has been widely described in the baseline section. The project main objective is mostly to address the impact on the waste management in the healthcare system.

Although the project is mostly focused on the healthcare sector and on enterprises providing related services (waste management and manufacturing of PPE), in which the relevance of the informal sector is reduced, it envisages outputs and activities aimed at reducing the social and economic impact exerted by the COVID-19, and at strengthening the resilience of such sectors, so that future risks are minimized.

On project management, delays and challenges that maybe posed by COVID-19 related restrictions will be mitigated through the use of various platforms available for coordination to ensure continuance of project activities. Project management, in UNIDO and relevant offices in the Philippines, have adapted to the situation and the new modalities for project implementation and execution. Proper measures will always be undertaken to ensure that infection risks to participants will be avoided or reduced to a minimum.

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.

Institutional Arrangement for Project Implementation

The proposed institutional arrangement for project implementation is given in Figure 4 below:

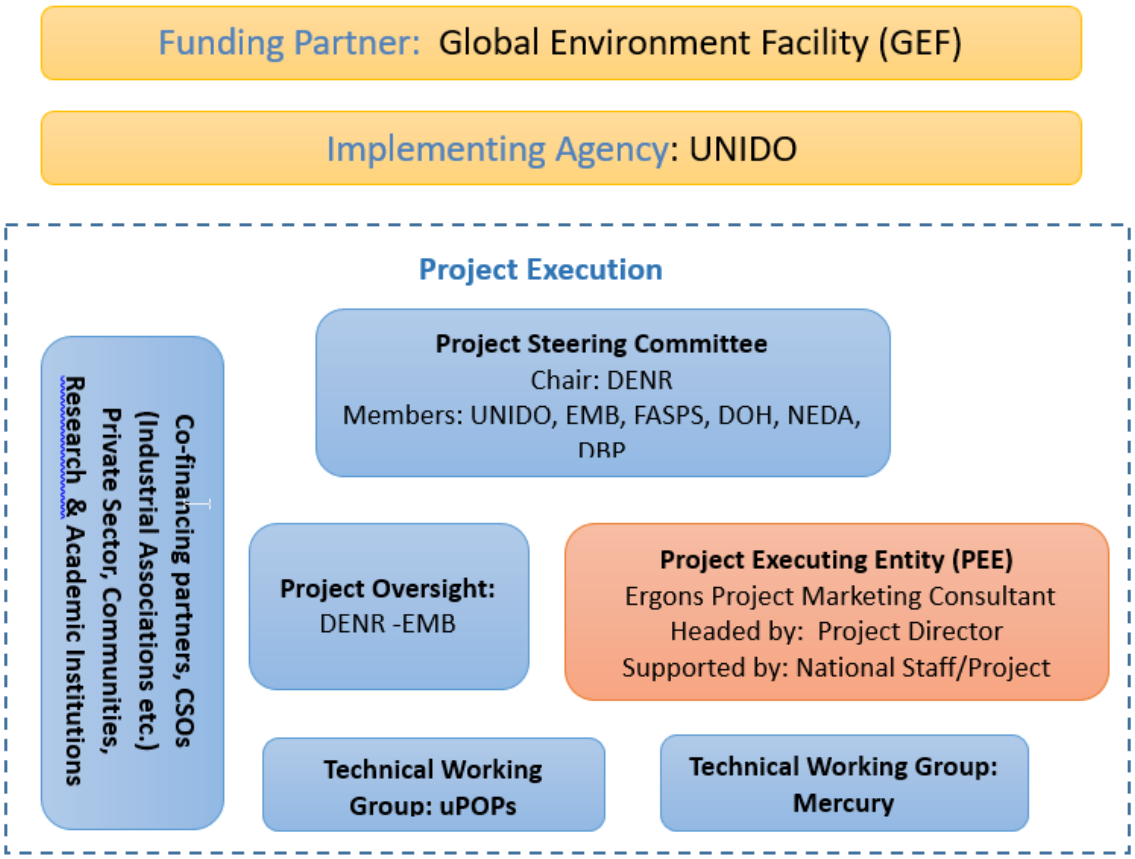


Figure 4: Institutional arrangement for project implementation

168. The project will be implemented by UNIDO and DENR ? EMB will be the main project oversight entity. The project will be executed by Ergons Project Marketing Consultant (ERGONS) as project executing entity (PEE). DENR is responsible for the overall project oversight at national level as project owner and will chair the Project Steering Committee. UNIDO, as GEF implementing Agency for the project, will play a close coordination and liaison role with the DENR EMB, Ergons, and with the GEF Secretariat. It will maintain the overall oversight of the project implementation, manage the overall budget and supervise the execution of the project. A project manager will be appointed in the UNIDO HQ to oversee the implementation of the project and the UNIDO Country Office in the Philippines may also provide in-country support.

Project Executing Entity

169. Due to issues on national fund flow policy and procedures for project executed by government entities, DENR-EMB, lead project partner, and DENR Foreign Assisted and Special Projects Service (FASPS), the selection of the Project Executing Entity was conducted during the PPG in the form of a Call for Expression of Interest for project execution issued in July 2021. The exercise was led by DENR-EMB and facilitated by the UNIDO Country Office in the Philippines. The Call was responded to by ten (10) national entities which were evaluated based on an agreed set of criteria. The Technical Evaluation Group (TEG) was comprised of representatives from UNIDO Headquarters, UNIDO

Philippines Country Office, DENR- FASPS, EMB-Hazardous Waste Management Section, EMB-Chemicals Management Section, and EMB-Policy, Planning and Program Development Division. project execution issued in July 2021. Five (5) entities were shortlisted for proposal presentation and interview and based on further evaluation, the TEG recommended Ergons Project Marketing Consultant (ERGONS) as PEE. ERGONS will perform its duties as PEE in association with GECC Developmental Services OPC (GECC) and TUV Rheinland Philippines Inc. (TUV). ERGONS was also subjected to the Harmonized Approach for Cash Transfer (HACT) Assessment and was evaluated as LOW RISK.

170. The implementation and execution functions of UNIDO and ERGONS will be fully regulated through a Project Execution Arrangement (PEA). The Agreement defines the respective responsibilities of the PEE, including but not limited to activities, deliverables, financial, personnel, procurement and asset management components, as well as the reporting schedule and format.

171. The PEE will be requested to designate internally, or recruit directly, project management personnel to form a Project Management Unit (PMU) to execute the activities of the national project. The PMU will be responsible for the day-to-day management of the project execution, monitoring and evaluation of project activities as in the agreed project work plan. The PMU will coordinate all project activities being carried out by project experts and partners. The PMU?s responsibilities will include but not limited to: (i) assignment and supervision of project activities; (ii) recruitment of international and national consultants; (iii) coordination with stakeholders, donors, the IA, relevant national agencies and the private sector; (iv) preparation of terms of reference (TORs) for project activities, (v) review of project progress reports submitted by subcontractors and consultants (vi) supervising project procurement and financial resources in accordance with UNIDO procedures, (vii) organizing and convening project coordination stakeholder meetings, and (viii) review of project outputs and other tasks as required by the project ; (ix) prepare required project reports (GEF, UNIDO and Philippine Government) and: (x) prepare publications and other publicity materials. The PEE is also responsible for the recruitment of experts and facilitation of the conduct of the midterm evaluation of the project and should provide all related information to the evaluation experts for any mid-term review and final evaluation.

172. A Project Steering Committee (PSC) will act as an advisory mechanism to maximize synergies and ensure the successful design and implementation of the project. The main role of the PSC is to provide operational guidance as well as overall, high-level coordination and project validation forum during the implementation of the project. The PSC will meet regularly and as necessary to track progress and provide opportunities for identifying potential synergies, as well as to increase uptake of lessons. DENR (Undersecretary level) will act as Chair of the PSC. UNIDO, EMB, FASPS, DOH and DBP will be institutional members. Other stakeholders maybe invited as members to the PSC as deemed necessary. The PSC will ensure that any proposed changes or amendments to the project and/or to the annual work plan (AWP) and budgets are done in accordance with the approved project document, the GEF policy C.39/inf 3 and UNIDO rules and regulations

173. Monitoring will be jointly undertaken by UNIDO and DENR-EMB in coordination with ERGONS. The Midterm Review and the FInal Evaluation of the project will be under the responsibility of UNIDO, in coordination with its Independent Evaluation Division. UNIDO shall keep the allocated resources for project evaluation.

Transfer of Assets

174. Full or partial ownership of equipment/assets purchased under the project may be transferred to national counterparts and/or project beneficiaries during the project implementation as deemed appropriate by the government counterpart in consultation with the UNIDO Project Manager.

Legal Clause

175. The present project is governed by the provisions of the Standard Basic Cooperation Agreement between the Republic of Philippines and UNIDO, signed and entered into force on 26 February 1993.

Coordination with other GEF initiatives and other similar initiatives

176. While the project addresses the obligation of the Philippine government to the Stockholm and Minamata Conventions, its envisaged outputs are compliant with the general objective of SAICM on sound management of chemicals and hazardous wastes. The project will coordinate with the current SAICM initiatives in the country and will provide its contribution specifically on the sound management of mercury and reduction of the use of disinfectant in the management of healthcare wastes.

177. UNIDO is currently implementing several projects with similar objectives as the current proposal. Coordination with these project will be undertaken:

? The GEF-funded project titled ?Environmentally Sound Management of Medical Wastes in India? (GEF 3803) is a collaboration between UNIDO and the Ministry of Environment, Forests and Climate Change (MoEFCC) and focuses on MW management in five (5) States namely Gujarat, Karnataka, Maharashtra,Odisha and Punjab. The project aims to reduce and ultimately eliminate releases of unintentionally produced persistent organic pollutants (U-POPs) and other global harmful pollutants into the environment through the incineration of Bio Medical Waste and protect the environment and human health through the environmentally sound management of MW by promoting countrywide adoption of best available techniques and best environmental practices (BAT/BEP) in the healthcare sector.

? In Senegal, the on-going GEF-funded project, ?Environmentally sound management of municipal and hazardous solid waste to reduce emission of unintentional POPs - Implementation Phase? (GEF 4888) started in 2014 in collaboration with the Ministry of Environment and Sustainable Development (MEDD), the Directorate of Environment and Hazardous Facilities (DEEC), and the Ministry of Planning and Local Governments, Senegal. With four components (one is the M&E component), this project covers (1) strengthening and sustaining the legal framework and institutional capacities for sound management of hazardous and other wastes; (2) engaging stakeholders in properly disposing, sorting and recycling hazardous and other wastes; and (3) improving the sound management operations of hazardous and other wastes. The project already supported the purchase of bins and microwave system for infectious hazardous waste disposal.

? A project in the Philippines under the UNIDO ? Government of Switzerland Global Quality Standards Programme on ?Standards and Conformity Assessment for PPE and Medical Devices? is expected to start implementation in 2021 with the Department of Trade and Industry as the national coordinating agency.

This project is expected help address the urgent need to provide adequate supplies of personal protective equipment (PPEs) in support of the country?s COVID-19 response, meeting the required global quality and safety product and manufacturing standards. This will be done through strengthening capacity of the national quality infrastructure to promote and verify compliance of PPE and medical devices with relevant quality and safety standards. The project will also develop forecast of demands for the different PPEs, medical devices, and sanitation products that can inform waste management strategies and identify the needed regulatory updates.

178. The proposed project will also seek synergy and coordination with the the agencies and entities involved on the following projects , especially on the capacity building and knowledge management efforts of the current project:

? GEF 10349 ?Demonstration of production phase-out of mercury-containing medical thermometers and sphygmomanometers and promoting the application of mercury-free alternatives in medical facilities in China? which aims to establishing the enabling environment to accelerate the transfer to the production of mercury-free medical devices, and to lay the foundation for market acceptance and growth for mercury-free devices in medical facilities, in order to meet associated phase-out deadlines under the Minamata Convention on Mercury

? GEF 10716 ?Phasing out mercury measuring devices in healthcare? , a global project with the objective of eliminating uncontrolled releases of mercury from healthcare settings.

179. The proposed project will build on previous and ongoing GEF projects in the Philippines, most relevant of which are:

? Global project (GEF 1802) on ?Demonstrating and Promoting Best Techniques and Practices for Reducing Healthcare Waste to Avoid Environmental Releases of Dioxins and Mercury? with Philippines as one participating country which contributed to the training on mercury devices and the installation of two non combustion technologies for the pre-treatment of HCW.

? Regional project on the ?Demonstration of BAT and BEP in Open Burning Activities in Response to the Stockholm Convention on POPS? (GEF 5082) which aims to assist in the rehabilitation of dumpsites and develop the municipal recycling facilities in target areas in the Philippines which would support the initiatives of the current project.

180. Also currently being implemented in the Philippines is the regional project on ?Contribution Toward the Elimination of Mercury in the Artisanal and Small Scale Gold Mining (ASGM) Sector: From Miners To Refiners? (GEF 9718). The project intends to contribute to the elimination of mercury in ASGM by applying a value chain approach and addressing root causes of high mercury usage and emissions in the ASGM sector which are largely related to poverty or a lack of economic opportunities; lack of awareness of the environmental and health dangers of mercury; and lack of knowledge of mercury-free alternative gold recovery methods in the informal mining sector. Full coordination will be undertaken with the project team to develop complementary activities as best possible.

181. Lessons learnt and outputs from previous projects would also be utilized as reference for the current project. Previous mercury-related initiatives in the Philippines funded by GEF include:

? UNIDO Project entitled ?Improve the Health and Environment of Artisanal and Gold Mining Communities in the Philippines by Reducing Mercury Emissions? (GEF 5216 - March 2013 to June 2016)

- The project aimed to improve the health and environment of artisanal gold mining communities in the Philippines by reducing mercury emissions. In particular, the project introduced a mercury-free technology in 2 small-scale mining areas and provided health training to rural health care workers in the proper diagnosis of mercury poisoning. A significant number of miners, including both males and females, have been trained to use mercury-free method to extract gold, and a number of them have already shifted to this mercury-free technique. As a result, the use of mercury for gold mining has been considerably reduced in the project areas, and the communities are fully aware of the dangers of mercury on human health and environment.

? Minamata Initial Assessment (MIA) (GEF 5863). MIA is an enabling activity financially ? supported by the Global Environment Facility (GEF) that assisted countries in: (1) strengthening national decision making toward ratification of the Minamata Convention on Mercury; and (2) building national capacities toward implementation of future obligations. Through this activity, the Philippines was assisted to assess its readiness for being a party to the Minamata Convention as indicated in Article 20 of the Convention text. The Policy, Regulatory, and Institutional Framework of the country was also evaluated. Further, it provided recommendation on policy and strategic decisions and identified priority activities within the country. Mercury inventory was also undertaken in this activity.

7. Consistency with National Priorities

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

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

182. The project is relevant to the action plans stipulated in the 2014 updated National Implementation Plans of the Philippines with regard the minimization of unintentionally-produced POPs in the uncontrolled burning of wastes, of which the health care waste sector is a contributor. It NIP stipulates the following priorities: adoption of BAT technologies, adoption of BEPs in relevant sectors, strengthening of national technical capability to manage uPOPs issues and strengthening of regulatory and analytical capacities.

183. The project will take off from the information provided in the Philippine Minamata Initial Assessment (MIA) and complement and support the activities identified in the NAP for MAPs. The MIA contains information regarding the estimated inventory of MAPs in the country which can further be verified and strengthened during the project preparation stage. It contains country baseline information and also also identifies priority areas, gaps in regulatory frameworks, and stakeholders relevant to mercury management. The NAP for MAPs, on the other hand, focuses on the country obligation to phase-out mercury-added products. Importantly, the NAP for MAPs bridges across various government offices responsible for mercury management especially for mercury-added products and provides a programmatic approach to the phase-out, taking into account the life-cycles of the MAPs from importation to disposal. Priorities under the NAP include efforts toward policy harmonization, strengthening of capacities, ensuring quality data and science-based evidences, and partnership advocacy.

184. The Philippine Development Plan, 2017 ? 2022, recognizes the critical role the environment and natural resources (ENR) sector plays in the country?s development. According to the national plan, it is crucial that environmental health is improved to support the accelerated economic growth, strengthen resilience against the impact of climate change and disasters (natural and human induced),and improve the welfare of the poor and marginalized members of society. Further, strategic efforts toward protecting both human health and the environment are prioritized, recognizing that these are areas of concern that are not necessarily mutually exclusive.

185. The 2020 midterm update of the PDP re-emphasizes the need to improve environmental quality through the (1) strengthening of the enforcement, regulation, and monitoring of environmental compliance and management interventions; and (2) adoption and implementation of innovative pollution abatement solutions. In fast-tracking the implementation of waste management measures for solid, toxic, and hazardous wastes, including electronic waste, especially at the local level, the country prioritizes the streamlining of the management of health care and infectious wastes.

186. The project also supports the provisions of "We Recover as One" which is a planning document formulated by the Philippine Government through the the Inter-agency Task Force Technical Working Group for Anticipatory and Forward Planning formulated. The document serves as a guide for country initiatives in line with efforts to address the impacts brought about by the COVID-19 pandemic, sending a clear message that only initiatives aligned with the guidance document will receive priority government support. In the context of the environment and health nexus, government recognizes that the new normal state will require a combination of strengthened, scaled up, and innovative actions and solutions to curb the elevated environmental, climate, and health risks posed by COVID-19.

187. As such, one priority strategy in the ?We Recover as One? document is the streamlining of the management of health care and infectious wastes, especially at the community and household levels. Priority actions to be taken include:

? Ensuring compliance of health care facilities and treatment technologies with the standards for hazardous waste management

? Modernizing and increasing the number of TSD facilities for hazardous healthcare wastesf

? Improving disposal of healthcare wastes at the household or barangay level ? Supporting ancillary remedial actions to improve environmental health and mitigate climate change

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.

188. A Knowledge Management infrastructure will be an important output of the project. The outputs and results of the project will be of importance to several stakeholders and will definitely provide addition to the global body of knowledge on the HCW sector. For this purpose, a project website will be built and linked to government dashboards directly informing the government?s Inter-agency Task Force on Emerging Infectious Diseases (IATF) that governs and directs the government?s COVID-19 efforts. It will also be linked to the Inclusive and Sustainable Industrial development (ISID) web platform being

hosted by the UNIDO Philippine Country O??ce, in collaboration with the National Economic and Development Authority (NEDA) and other public and private member agencies of the Steering Committee of the UNIDO Philippine Country Programming Framework, 2018 ? 2023, which includes the Philippine Chamber of Commerce and Industry (PCCI) and the Department of Environment and Natural Resources (DENR). The website will be established using a blog-type platform, allowing PMU and other project operators to update the website content in real-time. The website will be initially built with the support of a professional web-site builder. Subsequently, the website will be updated regularly by the PMU ? by assigning a person with the specific task of result dissemination. Even for the website, different level of access will be granted depending on the targeted stakeholders.

189. At end-of-project, management of the website may be handed over to an identified member agency of the Inter-agency Committee on Environmental Health (IACEH), a participating local government unit. Another option is to migrate the contents to existing government platforms.

190. The knowledge generated in the course of project implementation will be shared globally through participation in regional coordination meetings related to healthcare waste management and COVID-19 and international conferences. The project also aims to use available global and regional knowledge channels including the BRS Secretariat, BRS regional centers, the GEF and UNIDO websites, to disseminate project outputs. With the prominence of virtual platforms for information sharing, this would also facilitate reaching out to a wider global audience.

191. The contribution of the project to knowledge generation on healthcare waste management will be highly significant, especially with the impact of the current global pandemic. It will generate knowledge products which maybe adopted to address similar situations in other countries. The KM infrastructure will be utilized to share the outputs and lessons learned on healthcare waste management especially during this pandemic. The technical documents and reports generated will be made available in the project website and disseminated to the proper channels. The partners and other relevant stakeholders will also be encouraged to participate in relevant webinars, trainings, etc. that will be provided by other entities. The project will also endeavor to utilize available social media platforms like Facebook and Twitter to further disseminate relevant information on the project activities. At national level, with specific reference to the awareness raising initiatives, communication will be ensured through the establishing of a proper Training of Trainers initiative, and through communications ensured through mobile apps (social), newspaper and TV broadcasting

192. Furthermore, the relevant documents will be published on the UNIDO open data platform but also through the Global Network for Resource Efficient and Cleaner Production (RECP net) of UNIDO and the Green Growth Knowledge Platform (GGKP) to further facilitate inter-regional and South-South cooperation. The results, lessons learnt will as well be presented and shared at relevant regional and international meetings and conferences among others to contribute to the revision of relevant guidelines under Minamata and Basel Convention. This will also ensure that there will be proper depository of project outputs which could be easily accessible to interested stakeholders.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

193. Monitoring and evaluation (M&E) of project development is a key element of the project design and will be performed at project outcome, project output and project activity levels as well as at functional and management levels. The main purpose of the M&E program will be to measure and document implementation progress towards outcomes and objectives according to verifiable indicators and related means of verification. Evaluation of performances will assist in monitoring effectiveness and results, identifying underperforming activities and suggesting remediating actions, monitoring project risks and flagging project risks early on, refining further work in order to ensure a coherent, coordinated and timely achievement of project objectives in accordance with the project results framework.. At the same time, it will support the communication and coordination mechanism of the project network, the compilation of lesson learned from the project and the dissemination to the primary stakeholders as well as the international community of the knowledge and experience acquired during the project lifetime.

The M&E activities with corresponding budget are provided in the table below:

M&E activity	Responsible Parties	Indicative costs to be charged to the Project budget (USD)		Timeframe
		GEF grant	Co-financing	
Design and implementation of M&E system	PMU in consultation with other project partners	5,000		Within the first 3 months
Monitoring indicators and project progress	PMU, local and international consultants as needed	10,000		Regularly, with an annual review prior to the finalization of APR/PIR
Third-party monitoring and project audit	PMU, local consultant	20,000		As required, biennial suggested.
Visits to demo sites to monitor progress and assess delivery of services	PMU, local and international consultants as needed	37,550		As required, minimum once a year.
Monitoring of Gender Action Plan, ESMP and SEP	PMU in consultation with other project partners	15,000		Regularly, with an annual review prior to the finalization of APR/PIR
Independent mid-term evaluation (external) and management response	UNIDO, PSC, PMU, independent external evaluators.	34,100		Midpoint of project implementation

Independent final evaluation (external) and management response	UNIDO, PSC, PMU, independent external evaluators.	54,100		At least two months before end of project
Total indicative cost		**175,750**		

194. According to the Monitoring and Evaluation policy of the GEF and UNIDO, follow-up studies including Country Portfolio Evaluations and Thematic Evaluations can be initiated and conducted. All project partners and contractors are obliged to (i) make available studies, reports and other documentation related to the project and (ii) facilitate interviews with staff involved in the project activities.

195. The project results will be monitored annually and evaluated periodically during project implementation as part of the planning processes undertaken by the project team in accordance with established GEF and UNIDO monitoring and evaluation procedures.. The evidence of outputs such as the number of participants in training activities, the release of reports and manuals, site visits at demonstration facilities, etc. will confirm the congruence of outcomes and objectives.

196. Day to day monitoring of project execution progress will be performed by the PEE according to the work plan and identified indicators reported in the project's Annual Work Plan. The Project Team will inform UNIDO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely manner.

197. Annual monitoring and evaluation will occur through PSC meetings which will take place once a year, at a minimum. The first such meeting will be held within twelve months of the start of full project implementation. The final evaluation will be performed at the end of project life and will consider the implementation of the project as a whole, paying attention to whether the project has achieved its stated objectives and contributed to the global environmental objective.

Project Management Activities

Inception Phase

198. An Inception Workshop (IW) will be held within the first 3 months of project start. The IW aims to introduce, finalize and approve the implementation structure of the project, define the exact role, function and responsibility of the project team (government counterparts, UNIDO, PSC, PMU, co-financing partners, project execution partners, relevant stakeholders, etc.), and plan the first year Annual Work Plan (AWP) including appropriate indicators and related means of measuring performance. This would require a review of the indicators, targets and their means of verification reported in the project

results framework, and recheck assumptions and risks. A detailed schedule of project review meetings and related M&E requirements and reporting activities, including the scheduling of the mid-term and final evaluation, will also be developed during the IW. Subsequent meetings of the PSC will be planned and scheduled, too. The first PSC meeting should be held within the first 12 months following the IW. During the IW, the project related administrative and financial requirements and procedures will be reviewed and agreed. The IW will also provide the opportunity to discuss and agree on the strategy for the dissemination of project results and other strategies related to the project such as the gender and the socioeconomic strategies. As an overall objective, the meeting will provide an opportunity to all partners to better understand and assimilate the goals and objectives of the project and take ownership of the project. The PEE will draft the Inception Report within a month from the meeting. The draft will be circulated for comments by project partners.

Annual monitoring and evaluation

199. An annual meeting for the review of project progress and the planning of activities for the coming year will be organized by the PMU with the participation of executing partners before the annual meeting of the Project Steering Committee. Input to the annual PIR will be provided by the PEE, UNIDO and all project partners. The PEE will ensure that all relevant input will be provided timely and well in advance of the submission deadline.

Periodic monitoring.

200. Periodic monitoring will be performed through site visits at the project demonstration facilities by UNIDO, the PEE and other relevant stakeholders. These site visits will be aimed at assessing project progress based on the agreed schedule in the project's Inception Report/Annual Work Plan. A Field Visit Report will be prepared by the PMU.

Terminal Project Workshop

201. During the last three months, the project management unit will prepare the Project Terminal Report (PTR), which will be the last PIR. It will be a comprehensive report summarizing the results achieved, areas where results may not have been achieved and lessons learned. The Project Terminal Report and the final evaluation (FE) report will form the final project documentation package to be discussed with the PSC during the Terminal Project Workshop.

202. The Terminal Project Workshop (TPW) will be held in the last month of project implementation. The TPW will be aimed at assessing the implementation of the project as a whole and if it has achieved its stated objectives and contributed to the broader environmental objective. Particular focus will be given to lesson learned and opportunity for sustainability and replicability of the project?s results.

Reportorial Requirements

203. Regular reporting of the achievement of the project objectives and activities forms part of the monitoring and evaluation process. During project lifetime, the project team in conjunction with the PSC members and UNIDO will prepare and submit the following reports:

Inception Report (IR)

204. A Project Inception Report (IR) will be prepared at the beginning of project implementation and immediately following the Project Inception Workshop (PIW). It will include: (i) a description of the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project-related partners; (ii) finalization of project design and approval of the overall work-plan, including related Monitoring and Evaluation activities; (iii) a timeframe of project review meetings for PSC and others project's decision-making structures and/or coordination mechanisms; (iv) a detailed Annual Work Plan (AWP) for the activities of the first year of the project; (v) a fine-tuning of verifiable indicators and corresponding means of verification to effectively measure project performance during the targeted 12-month timeframe of the AWP; (vi) Terms of Reference (TOR) for effective coordination of the activities and for sub-contractual services and project consultants; (vii) a detailed project budget for the first year of implementation, prepared on the basis of the AWP. When finalized, the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, UNIDO will review the document.

Project Implementation Report (PIR)

205. The Project Implementation Report (PIR) is an annual management and monitoring process. It is an essential monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project will be under implementation for a year, the project team shall complete the PIR. The annual PIR is the main tool used by the GEF for monitoring its portfolio and reviews financial status, procurement data, impact achievement and progress in implementation. Final PIR will be submitted to GEF as per standard procedures.

Project Terminal Report

206. The Project Terminal Report (PTR) will be the definitive statement of the Project?s achievements. This comprehensive report will be the overall evaluation of the project and will summarize all activities, outputs and outcomes of the Project, objectives met (or not met), structures and systems implemented, etc., paying particular attention to whether the project has achieved its immediate objectives and contributed to the global environmental objective. It will also serve as a source of lessons learned and will lays out recommendations for follow-up activities that may need to be taken to ensure sustainability and replicability of the Project?s activities. The project team will prepare the PTR during the last three months of the project lifetime. It shall be prepared in draft sufficiently in advance to allow review and technical clearance prior to the final PSC meeting.

Thematic Reports

207. As and when called for by UNIDO, the project team will prepare specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNIDO and will clearly state the issue or activities that need to be reported on. These reports will be used as a form of lessons learned exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered.

Technical Reports

208. Technical Reports are detailed, comprehensive documents covering specific areas of research within the framework of the overall project. The key areas where Technical Reports are expected to be prepared during the course of the Project will be individuated during the Project Inception Workshop and during annual PSC meetings. Technical Reports may also be prepared by external consultants and will be used as working documents for the Project implementation as well as to disseminate relevant information at local, national and international levels.

Project Publications

209. Project Publications in the form of articles in academic and peer-reviewed journals, multimedia publications, informational texts or other forms of distribution, will represent a method for a widely dissemination of relevant results and achievements of the Project. Publications can be based on Technical Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if Technical Reports merit formal publication, and will also (in consultation with UNIDO, the governments and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Publications setting out methodologies adopted in this project, achieved results and lessons learnt will be distributed to the industry, governments, Parties to the Convention. Any publication will observe UNIDO and GEF advocacy guidelines.

210. News, articles, and other inputs to social media cards/postings and the Philippine ISID website in relation to the project accomplishments for coordinated UN-wide communication should also be delivered as required.

Other Required Reports/Publications

211. The PEE is also expected to provide other reports, articles or publications, not identified above, as requested by the donor, the national government and UNIDO.

Independent Evaluations

The project will be subjected to two independent external evaluations managed by UNIDO: a Mid-term Review and a Final Evaluation.

Midterm Review

212. The mid-term review (MTR) will be undertaken at mid-term (between the second and third year of project implementation) by an independent consultant to review the progress of each project activity and assess effectiveness of implementation according to the project?s indicators presented in the Project Results Framework. The The Terms of Reference for this mid-term evaluation will be prepared in accordance with the generic TORs developed by the UNIDO Independent Evaluation Division.

213. The MTR will review the effectiveness, efficacy and timeless of project execution, evaluate the effectiveness of the Partnership composition and of the interaction between partners, identify potential issues which could prevent optimal development of the project. This assessment will be extended to the administrative aspects and will also consider the provision of financial resources and co-financing provided by the project partners. The MTR findings could propose recommendations and remedial actions to be incorporated as improvement in the implementation strategy and execution for the remainder of the project?s duration, if necessary. This evaluation will also highlight initial technical achievements, achievement of GEBs and lessons learned derived from project implementation.

Final Evaluation

214. The final evaluation (FE) is under the responsibility of UNIDO and will, ideally, begin three months before the completion of the project and after the end of the main planned project activities. This will allow the independent consultant to carry out the evaluation when major activities are already completed but with the project team still in charge. The final evaluation will focus on the same issues as the mid-term evaluation. However, since all the planned project activities set-out in the Project Results Framework will be completed at the start of the evaluation, a greater focus on identifying and extracting project impacts including the contribution in building local capacity, the achievement of global environmental goals, lesson learned, sustainability and replicability of project results will be assessed. This evaluation will be performed on the basis of the delivery of the project?s results as initially planned, eventually as corrected after the mid-term evaluation, if any such correction took place. The FE will also provide recommendations on how to disseminate products and outputs of the project most efficiently within and outside the country. The Terms of Reference for this evaluation will be prepared by UNIDO in accordance with the generic TORs developed by its Independent Evaluation Division.

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)?

215. The project envisages several areas which will bring socio-economic benefit along with the global environmental benefit pursued by the project:

Environmentally sound waste management of Health Care and Covid-19 related waste.
The development and consolidation of technologies and procedures for the environmentally sound management of waste can bring a number of social and economic benefit associated with 1) the

minimization of environmental and health risk associated to the improper management of infectious and hazardous waste which eventually represent a cost for the society; 2) the minimization of the management cost of hazardous and infectious waste, due to a better segregation, the use of more efficient pre-treatment technologies, the enhancement of recycling and reuse whenever technically and legally acceptable, etc; 3) the increase of the capacity of environmentally sound disposal of hazardous and infectious waste, resulting in the increase of job opportunities. The achievable GEB (reduction of U-POPs and mercury release in the environment) is directly related to the social and economic benefit which can be achieved, and in this sense may be considered as a win-win mechanism.

Support to enterprises to access environmental funds and to improve the circularity of their processes.
Under Output 1.1.5, the project will provide Support to small manufacturers and women enterprises to increase the production of fabric reusable PPEs. This is a key output of the project which benefits could extend well beyond the pandemic emergency, due to the fact that PPEs market will likely remain very promising even after the This activity aims at providing support to small manufacturers on the production of non-medical face masks which may be effective, suitable, made of material which are durable and can stay in contact with the skin, effectively reusable for a number of times, improving therefore the circularity of such products.

Similarly, under output 1.1.6, the project intends to provide technical assistance to MSMEs in the healthcare sector, including TSDs and manufacturers of PPEs and other non-mercury-containing medical devices, to access existing green financing schemes. This will ensure that the use of existing financial resources is optimized and that the rate of applications to existing green fund increases, through improving communication and awareness raising about green financing opportunities and providing technical assistance in the application process.

Initiatives aimed at promoting gender equality and reducing gender gaps.
The project activities have been designed to ensure the key involvement of women as project leaders and as beneficiaries. In the course of the project design, a detailed gender analysis and a specific gender mainstreaming work plan, with gender-sensitive targets and indicators, has been developed and integrated in the project results framework.

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	Medium/Moderate		

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.

The identifed risks and impacts of the projects and the management measures to address the risks are provided in detail in the attached **Annex M Environmental and Social Management Plan (ESMP).**

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
ANNEX M Environmental and Social Management Plan	**CEO Endorsement ESS**	
UNIDO_E+S_Screening_PHIL_HCW	**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).

ANNEX A: PROJECT RESULTS FRAMEWORK

The project results framework is also provided as **Annex A** in the attached documents.

Project Development Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Protection of human health and the environment through the reduction of unintentionally-produced POPs and mercury in the healthcare waste sector promoting environmentally-sound approaches	Amount of U-POPs avoided through ESM of HCW; Amount of mercury and mercury waste disposed of in an Environmentally Sound Manner Number of direct beneficiaries disaggregated by gender	U-POPs: from 384 to 464 GTeq/yr associated with HCW; Up to 1.1kgTeQ/yr associated to disinfection of waste with chlorine Mercury: 10,4 tons as from MIA inventory; Direct beneficiaries: N/A Indirect beneficiaries: N/A	U-POPs avoidance: 26.3 gTeQ from direct implementation of ESM of HCW; up to 445gTeQ/yr associated to Indirect reduction of U-POPs through proper awareness raising and technical assistance on HCW, avoidance of chlorinated disinfectant when unnecessary and reusable face mask Mercury disposal: 10,4 tons as from MIA inventory. Direct beneficiaries from training, job opportunities and better condition at workplace: 400 male 400 female	See below	See below

Expected Outcome/Output/Activity	Indicators	Baseline	Targets for Midterm and End of Project	Sources of verification	Assumptions and Risks
Component 1.a Unintentionally produced POPs release reduction in the healthcare waste sector					
Outcome 1.1 Policies and environmentally sound procedures developed and adopted for the minimization of health care wastes, focusing on the wastes generated during pandemic, and in support of MSMEs					
Output 1.1.1 Strengthening of relevant national policies on healthcare wastes management with special focus on responses during pandemics					
Activity 1.1.1.1 Gap analysis of national policies on healthcare waste	Availability of regulatory gap analysis report, with one section analysing the gender gap therein	The relevant regulation in the Philippines (RA 6969 (Toxic Substances and Hazardous Waste Management Act of 1990; Clean air act; Sanitation Code of the Philippines (PD 856); DOH HCW manual need to be updated to take into account COVID-19 impact on waste management and rules on U-POPs and Mercury reduction. Estimates on the additional waste generation related to COVID-19 are missing of inconsistent therefore the associated management plans may be unsustainable. There are no rules related to the management of COVID-19 waste generated from household.	Mid-Term: gap analysis completed	Gap analysis report, meeting minutes	Assumptions: relevant GoP departments (DENR, DOH) are aware of the need to improve the current management and regulation on healthcare waste management, and are committed to undertake such effort. An effective project team composed by expert aknowledgeable in the relevant fields of will interact effectively with GoP departments to undertake this task. Risk: difficulties to reach consensus on improved regulation could lead to delay in the achievement of this target. Social and environmental aspects of the
Activity 1.1.1.2 Preparation of an improved draft on HCW policies aimed at minimising release of U-POPs and mercury	Availability of a draft on improved policy on HCW management with specific provision on HCW and mercury reduction with GM aspects, i.e. engaging female scientists, decisionmakers, and entrepreneurs towards this reduction goal		Mid-Term: draft on improved policy on HCW including COVID-19 waste, rules for house-hold COVID-19 waste, revised rules on mercury management.	Draft report on improved policy on HCW including COVID-19 waste, rules for house-hold COVID-19 waste, revised rules on mercury management	
Activity 1.1.1.3 Consultation on the improved draft on HCW policies including gender mainstreaming	Availability of a consultation report on HCW management including aspects related to GM, addressing the provision of different sized PPEs and other aspects of gender-specific demands arising from existing HCW practices;		Mid-Term: regular expert meetings carried out, at least two workshops on the discussion of the HCW policy (draft and final) held. End of project: Official consultation carried out on the final policy on the government website.	Minutes of expert meetings and consultation workshop minutes. Report from the official consultation held on the government website	

Activity 1.1.1.4 Finalisation and endorsement of the new HCW policies	Availability of a set of new HCW policies endorsed by the government, with focus on to COVID 19 waste; Availability of a set of proposals of a) gender-specific guidelines on the handling of COVID-19 waste and b) guidelines addressing the safe handling of HCW within the household		End of project: final revision of HCW policies endorsed by the government	Official acts demonstrating the endorsement of the final draft of the HCW policies	new regulation not fully captured due to the need to compromise aMong interests of different stakeholders
Output 1.1.2 Inventory procedures and guidelines for the calculation of additional waste generated during pandemic, with special reference to the current COVID-19 pandemic established					
Activity 1.1.2.1 Development of standard calculation methods for HCW generation	Availability of one methodological report on the calculation method for HCW generation	Some estimates are available, however an official method for the assessment of COVID-19 generated waste is missing.	Midterm: official method developed and piloted, assessment completed. End of project: official method updated based on the result of the pilot.	Meeting minutes Project Methodological Reports Draft and final guideline documents	Assumptions: Data related to waste generated by healthcare facilities are available. Statistical data concerning consumption of PPEs from household are available or can be derived with good reliability. Risk: difficulties to cooperate with HCFs on the collection and management of data due to the lacking of personnel
Activity 1.1.2.2 Piloting of the Inventory in at least 10 healthcare facilities and in an urban area	Availability of one inventory report for the calculation method of HCW associated to COVID-19		Mid-Term: a pilot inventory completed for 5 healthcare facilities and initiated for an urban area. End of project: pilot inventory completed for 10 healthcare facilities and one urban area	Meeting minutes. Inventory reports for HCFs. Inventory report for one urban area	

Activity 1.1.2.3 Finalisation and endorsement of the guidelines	Availability of official guidelines for the estimation of the generation of COVID-19 waste from HCF and households		Mid-term: draft of the official guidelines completed. End of project: official guidelines endorsed	Meeting minutes. Inventory reports for HCF. Inventory report for one urban area	associated with COVID-19 pandemic.
Output 1.1.3 Assessment of the lifecycle impact of PPEs and protective measures with reference to the consumption of material and generation of potentially contaminated wastes and POPs completed.					
Activity 1.1.3.1 Selection of a suitable LCA software and associated database compliant with ISO or equivalent standards based on knowledge exchange and consultation with LCA experts	Availability of an LCA software and associated database	No LCA study carried out so far on PPE equipment in the Philippines	Mid-term: LCA model and associated database selected and tested for PPE typologies	Meeting minutes Technical Reports LCA databases and report	Assumptions: a team with good capability on LCA can be found and recruited. An LCA database suitable for the Philippine situation is available or can be developed. Risks: LCA objectives not properly identified - results not properly communicated and understood. Assumptions: a firm capable to undertaking tests of the technical performance of PPEs can be found. Riks: high cost of PPEs testing
Activity 1.1.3.2 Conduction of LCA for at least 3 different PPE types with at least 2 manufacturing alternatives considered for each product in compliance with the objective to reduce waste and U-POPs generation	Number of PPEs categories subjected to LCA	No LCA study carried out so far on PPE equipment in the Philippines	Mid-Term; at least 2 types of community reusable face masks and at least 2 types of single use face masks subjected to LCA. End of project: in addition to LCA conducted at Mid-Term, at least 2 types of disposable gowns and gloves subjected to LCA	Meeting minutes Draft and final LCA report	
Activity 1.1.3.3: Assessment, based on official standard methods, of the technical performance at least 2 types of community reusable face masks, at least 2 single use face masks, and at least 2 types of disposable gowns and gloves	Number of PPEs categories assessed based on the standard method	Currently standard methods for technical performance are only available for some professional PPEs	Mid-Term: standard methods for the certification of PPEs identified. At least 2 types of community face masks assessed and certified.	Meeting minutes Technical Reports Certification Reports	

Output 1.1.4: Analysis of the impact of different chemical disinfection procedures for waste and objects with specific consideration for sensitive groups and women, and associated generation of U-POPs in the air and water completed.					
Activity 1.1.4.1 Identification and collection of physical, chemical and biological properties of commercial products for viral disinfection available on the Philippine market (hazard characterisation)	Availability of one report on the available data for hazard characterisation of disinfectants,	Existing assessments are available from international agencies but need to be tailored to the situation of the country.	Mid-Term: hazard characterisation of selected disinfectants completed	Preliminary and final report. Meeting and workshop minutes	Assumptions: a professional and highly skilled staff capable to analyse existing data from the literature and to undertake chemical risk assessment of virus disinfectant is available. Risks: no significant risks identifiable for this output.
Activity 1.1.4.2 Exposure assessment to chemicals contained in disinfectant disaggregated by age and gender following US-EPA or EU-REACh chemical risk assessment procedures	Availability of one exposure assessment report on the safety of selected disinfectants including assessments by age, sex and sensitive groups as recommended by international standards.	Existing assessments are available from international agencies but need to be tailored to the situation of the country.	Mid-Term: exposure assessment of selected disinfectants completed	Preliminary and final report. Meeting and workshop minutes	
Activity 1.1.4.3 Recommendation on the use of anti-viral disinfectants based on the result of the studies and knowledge exchange with national and international experts	Availability of a technical report updating the information on the virus survival and on the socio-economic accessibility of disinfectant recommended in the Philippine	Existing assessments are available from international agencies but need to be tailored to the situation of the country.	End of project: Recommendation report on the use of disinfectant against viruses completed.	Preliminary and final report. Meeting and workshop minutes	
Output 1.1.5: Support to small manufacturers and women enterprises of community facemask to improve the production of reusable fabric non-medical PPEs based on WHO guidelines.					

Activity 1.1.5.1 Consultation with PPE manufacturers and importers	Availability of a consultation report with PPE manufacturers and importers; gender parity achieved during the consultation process	N/A	Mid-Term: PPE manufacturers and importer identified, including small manufacturers and the ones led by female entrepreneurs. Consultation with PPE manufacturers started. End of project: Consultation with PPE manufacturers completed and consultation report drafted	Minutes of consultation with PPE maufacturers. Site and consultation reports	Assumption: professional trainers acknowledgeable on the specific matter of manufacturing of standard-compliant community face masks are available to provide training. LCA activities on PPEs capable to provide insights on a more environmentally safe manufacturing of face masks Assumption: small enterprise manufacturing community face masks willing to attend the training and get the certification
Activity 1.1.5.2 Analysis of the PPE manufacturing scenario in the Philippines	Availability of a PPE manufacturing analytical report: quality, quantity, sustainability, social aspects ? analysing a) the feasibility of manufacturing different sized PPEs and b) identifying entry points for gender mainstreaming	N/A	Mid-Term: first draft report completed based on available statistic data. End of project: analytical report on the PPE manufacturing and import completed including result of the consultation.	Draft and final analytical report on the sustainability of PPE manufacturing and import	Risk: the guidance document developed n?by the project does not capture the specific social, environmental and business reality of small enterprises. Enterprise representatives not fully involved in the process of

Activity 1.1.5.3 Preparation of Clean Production and Circular Economy guidelines for reusable PPE in the Philippine	Availability of a guidance document on the sustainability of PPE manufacturing with recommendations and guidelines for reusable PPE in the Philippine, identifying entry points to support female entrepreneurship and to promote female role models regarding the research, manufacturing, and recycling of sustainability of PPE	N/A	Mid-Term: first guideline completed on the basis of literature data. End of project: a guidance document on the sustainability of PPE manufacturing with recommendations and guidelines for reusable PPE in the Philippine prepared and approved	Guidance document with recommendations and guidelines for reusable PPEs	guidance development, therefore the guidance document perceived as difficult or too expensive for implementation. Difficulty to identify enterprises willing to partner with project to implement measures for sustainable production and circular economy.
Activity 1.1.5.4 Support at least two manufacturers to implement clean production and circular economy in the manufacturing of reusable PPE	Availability of a report concerning training implementation of a plan for sustainability improvement for 2 manufacturers; Female decisionmakers and entrepreneurs engaged fully throughout the training, with achieving gender parity as an ideal scenario	N/A	Mid-Term: two manufactuters identified for training and technical support. End of project: sustainability plan for the manufacturing of PPE developed and approved by the supported manufacturers. Technical training delivered.	Meeting minutes with the selected manufacturers. Sustainability plans for the supported manufacturers. Training minutes	
Output 1.1.6 Technical assistance to help Treatment, Storage and Disposal (TSD) facilities and manufacturers of PPEs, to access green financing schemes.					

Activity 1.1.6.1. Analysis of current financial opportunities and development of guidance materials to facilitate the access to green financing for TSD and PPE manufacturers	Availability of an Analysis and guidance report on the current financial opportunities to support green financing in the HCW sector.	In the Philippines there are a number of green financing schemes, including The Green Jobs financing mechanism (Philippine Green Jobs Act of 2016 (RA 10771)) and the PEPP - Philippine Environmental Partnership Programme which may represent an opportunity also for the HCW sector. However the number applications submitted to this two schemes is very limited.	Project Mid-Term: the analysis of current financial opportunities for HCW sector in the Philippines explored and a guidance report drafted. End of project: this activity to be completed at Mid-Term. No further actions envisaged	Guidance report on financial opportunities for HCW sector	Assumptions: through communication , guidance and technical assistance to prepare applications the number of applicants submitting proposals for the environmentall y safe management of HCW will increase. Risks: current green financing schemes not considered suitable by enerprises in the HCW sector to increase their capacity. Application rules too cumbersome or strict to be solved by the project
Activity 1.1.6.2. Assistance to TSD and PPE manufacturing enterprises, in coordination with financing institutions, in the preparation of applications to be submitted to financing institutions to support initiatives on ESM of HCW and manufacturing of PPEs	Number of MSME assisted in the preparation of applications for green financing, with at least 30% of applying the MSMEs chaired by female heads	The number of applications to green financing schemes in the Philippines is low	Project Mid-Term: at least 5 enterprises are supported to apply to existing green financing schemes. Project ends: at least 15 enterprises are supported to apply to existing green financing schemes	Applications submitted to existing financing schemes.	
Component 1.a Unintentionally produced POPs release reduction in the healthcare waste sector					
Outcome 1.2. Environmentally-sound technology for the collection, treatment and recycling of wastes generated during pandemic implemented.					
Output 1.2.1 Technologies and procedures upgraded to be BAT/BEP compliant					

Activity 1.2.1.1 Assistance to EMB for the widening and improvement of the online TSD database in the Philippines.	Availability of an improved TSD database	A TSD inventory database is available under the EMB website, which need to be extended and improved.	Mid-Term: a plan for the improvement of the existing TSD in the Philippine agreed with the GoP. Project end: the TSD database has been widened and improved	Meeting minutes. Inventory Improvement plan Improved TSD database	Assumptions: healthcare facilities and TSD facilities will be collaborative in sharing information concerning their capacity on waste management Risk: improved database on TSD facilities and strategy document for the improvement of HCW treatment not fully capturing the technological and financial needs of TSD enterprises and / or social and environmental aspects.
Activity 1.2.1.2 Preparation of a strategy document for the improvement of the HCW treatment and transportation sector including description of suitable technologies	Availability of a Strategy document for the improvement of the HCW treatment and transportation	N/A	Mid-Term: first draft of the strategy document prepared and discussed with stakeholders. Project end: strategy document finalised	Meeting minutes. Draft and final strategy document	
Output 1.2.2 Low or zero emission technologies for the pre-treatment and disposal of wastes generated during pandemic, implemented in a cluster of health care facilities and TSDs					
Activity 1.2.2.1 Validation of the proposed intervention at HCF and TSD level	Availability of a list of proposed intervention confirmed	N/A	Mid-Term: list of healthcare facilities completed and endorsed.	Meeting minute. Preliminary and final list of facilities Endorsement letters	Assumptions: the deployment of technologies and system for the pre-treatment of COVID-19 related waste tailored to the needs of each hospital facility are effective for reducing the amount of
Activity 1.2.2.2 Drafting of technical specification for BAT medical waste storage and treatment technologies at both HCF and TSD level	Availability of technical specification and of bidding documents	N/A	Mid-Term: list of healthcare facilities completed and endorsed.	Meeting minute. Preliminary and final list of facilities Endorsement letters	

Activity 1.2.2.3 Demonstration of BAT/BEP waste management technologies for HCW for an overall amount of at least 18t/day of HCW waste	Amount of waste treated or disposed of with environmentally safe technologies	Beside landfilling, steam autoclave and pyrolytic thermal destruction are currently the most common technologies for the pre-treatment or disposal of HCW in the Philippines	Mid-Term: technologies implemented for at least 4t/day of HCW. Project end: technologies implemented for at least 18t/day of HCW.	Meeting minutes. HCW treatment technology testing and acceptance reports HCW treatment reports	hazardous waste to be disposed of and for reducing risk of infection of workers. These systems will also allow to save treatment cost and will ultimately allow to achieve the avoidance of U-POPs release from improper waste generation. Risk: as most of the investment under this activity will be co-financed by TSDs or HCF, difficulties may aris+F41e in ensuring that technological investments comply with social and environmental standards required by the project. Furthermore, there is a risk that . financing resources mobilised by the project are not sufficient to catalyze the interest of the HCFs and TSDs.
Component 2a: Management of mercury, mercury-added products (MAPs) and mercury wastes in the healthcare sector according to the Minamata Convention on Mercury and the Philippine National Action Plan for MAPs phase-out					
Outcome 2.1 Improved synergies to support the phase-out of Mercury-added Product (MAPs) and environmentally-sound management of mercury and mercury wastes, especially in the healthcare sector.					

Output 2.1.1 Harmonized policies and updated action plans on mercury, MAPs, and mercury wastes across concerned and mandated agencies developed					
Activity 2.1.1.1 Validation / updating the Philippine Minamata Initial Assessment and assessment of the implementation of the 2010 National Action Plan on Mercury and Mercury-containing Wastes Management	Availability of a report on the Validation / updating the Philippine Minamata Initial Assessment and an assessment report of the implementation of the 2010 National Action Plan on Mercury and Mercury-containing Wastes Management	The Philippine MIA activity has been launched on 20 March 2019 under the GEF/UNIDO project 5863 and is currently being finalized. 43. The DENR has developed a National Action Plan on Mercury and Mercury-containing Wastes Management in 2010.	Project Mid-Term: Assessment report of the 2010 NAP on mercury completed. Project end: validation and updating of the Philippine MIA report completed.	Nap assessment report. Updated MIA report	Assumptions: data for validation and updating of the Philippine MIA are made available by the relevant GoP departments. Effective collaboration between project team and GoP representatives may be established for the update of the NAP on mercury a good cooperation between project team and relevant GoP departments is established to support GoP on the issues of MAP and ESM of mercury in the HC sector- . Risk: difficulties to reach
Activity 2.1.1.2 Formulation of policies and action plans that need to be revised and new regulations to support the phase-out of MAPs and the environmentally-sound management of mercury and mercury wastes in the healthcare sector	Availability of gap analysis, revised policies, action plans and regulations on mercury, including gender-specific gaps and policy revisions relating to gender mainstreaming	Available policies, action pans and regulation are established by DENR, DOH and DepED and need revision based on the outcome of the MIA	Project Mid-Term: a gap analysis to identify the policies to be revised completed and endorsed by the relevant GoP institutions. Project end: Policies, action plans and regulation revised as per the gap analysis	Gap analysis report, Draft and final version of revised policies, action plan and regulation revised	

Activity 2.1.1.3 Support to government agencies that are members of the Hg-IATWG under the IACEH to prepare and update work and financial plans compliant with the National Action Plan for MAPs Phase-out	Availability of reports and minutes concerning the support provided by UNIDO to governmental agencies MAP phase-out	Inter-agency Technical Working Group on Mercury (Kg-IATWG) under the Inter-agency Committee on Environmental Health (IACEH) led by the Department of Health and the Department of Environment and Natural Resources has been established.	Project Mid-Term: an agenda for the support to member of the Hg-IATWG established. Draft work plan and financial plan for MAPs phase out prepared. Project end: work plan for MAPs phase out implemented.	Meeting minute of the Hg IATWG member representatives with the project team Work plan for MAPs phase out	consensus on improved policies and action plans could lead to delay in the achievement of this target. Social and environmental aspects of the new policies and action plans not fully captured due to the need to compromise among interests of different stakeholders.
Output 2.1.2 Inventory and monitoring systems for MAPs and mercury wastes, emissions, and releases institutionalized					
Activity 2.1.2.1 Develop a material flow analysis for MAPs in the Philippine (additional activity to be reflected in the budget)	Availability of a material flow analysis report on MAP	A material flow analysis of MAPs in the Philippine is missing	Mid-Term: concept for material flow analysis completed. End of project: material flow analysis of MAPs in the Philippine is completed and a final report drafted and delivered	Meeting minutes. Report on mercury monitoring, tracking and reporting.	Assumptions: a good cooperation between project team and relevant GoP departments is established to support GoP on the issues of inventory of MAP and mercury emissions. Training agenda is tailored to fulfill stakeholder needs, so that to ensure good participation to the training.

Activity 2.1.2.2. Review and Improvement of the Guidelines of "Self-Monitoring Report (SMR)" for industries	Report on the review and assessment of the current Guidelines of SMR and existing SMR for industries Proposed improved Guidelines of SMR for industries	SMR do not include some information including mercury	Mid-Term: Memorandum issuance of Improved Guidelines of SMR for industries drafted for adoption End of project: SMR for industries has been updated	Meeting minutes Improved Guidelines of SMR for Industries Memorandum Circular of Improved Guidelines of SMR of industries Sample updated SMR	Risk: OPMS and other databases not fully operative; information and reporting available under these systems is limited. Training not fully capturing social and environmental needs of the stakeholders.
Activity 2.1.2.3. Strengthening the ?Online Permitting and Monitoring System? (OPMS) and the other existing databases	Number of databases improved with mercury information	OPMS do not include mercury information	Mid-Term: plan for OPMS database improvement drafted End of project: the OPMS database has been improved	Meeting minutes Draft and final plan for OPMS improvement. Functioning OPMS	
Activity 2.1.2.4 Support to gather accurate and timely information regarding mercury and mercury wastes monitoring, tracking, and reporting	Number of institutions supported with accurate and timely information on mercury	While the Philippine Clean Air Act and Clean Water Act have identified both air and water quality standards that include mercury as a critical parameter, monitoring of mercury levels in emissions, releases, air, and water bodies is not conducted regularly	Mid-Term: agenda for government support on mercury issues agreed. First report on mercury monitoring, tracking and reporting delivered. End of project: mercury reports updated and submitted in compliance with the Minamata convention	Meeting minutes. Report on mercury monitoring, tracking and reporting.	Assumptions: TSD and laboratory personnel interested and committed to attend the training. Training materials and trainers up to the required quality standards and international guidelines on the matter. Laboratory undertaking the monitoring

Activity 2.1.2.5. Training on monitoring of mercury levels in emissions, releases, air, and water bodies	Number and percentage of participants to training courses who successfully passed the final test disaggregated by gender; Gender-specific information, risks, and handling guidelines offered during the training, whereas applicable	N/A	Mid-Term: training course material prepared. One training course involving representatives of at least 10 TSD held. Project end: One training course involving representatives of at least additional 10 TSD held.	Training materials List of participants Participant evaluation sheets	activities are certified to conduct the required monitoring activities. Early planning of the procurement of laboratory service will avoid risk of delay. Risk: no significant risks for this activity. Effort should be paid to ensure gender balanced participation to the training.
Activity 2.1.2.6. Environmental monitoring of mercury levels in emissions from HCW facilities (10 monitoring campaigns), environmental air (20 samples), water bodies (50 samples)	Number of samples and analytical determination of mercury performed	There are no evidences of monitoring campaign conducted on mercury levels in HCW facilities	Mid-Term: sampling plan and sampling methodology developed for at least 10 HCW facilities. End of project: Monitoring campaigns conducted in 10 HCW, with at least 20 air samples and 50 water samples	Meeting minutes Monitoring plans Monitoring report	
Component 2b: Management of mercury, mercury-added products (MAPs) and mercury wastes in the healthcare sector according to the Minamata Convention on Mercury and the Philippine National Action Plan for MAPs phase-out					
Outcome 2.2 Demonstrated capacity to adopt best available technologies and best environmental practices for the environmentally sound management of mercury wastes from the healthcare sector					
Output 2.2.1 Capacity of mercury waste service providers upgraded to be BAT/BEP compliant.					

Activity 2.2.1.1 Assessment of existing facilities (TSD) in terms of procedures and technologies being adopted and the potential need for upgrading in order to become BAT/BEP compliant	Availability of an assessment report with recommendation on mercury management in TSD	Internal assessment reports related to the need of investment to expand capacity of TSD have been completed by the larger TSD.	Mid-Term: assessment criteria for TSD developed and approved; End of project: all the TSD facilities licensed for HCW assessed for mercury management; an assessment report with recommendation for upgrade drafted.	Meeting minutes Assessment report on mercury in TSDs	Assumptions: healthcare facilities and TSD facilities will be collaborative in sharing information concerning their capacity on mercury management Risk: survey on mercury management in TSDs and HCFs and assessment report for the improvement of mercury waste management not capturing the technological and financial needs of TSDs and HCFs and / or social and environmental aspects.
Activity 2.2.1.2 Assessment of selected mercury waste management at hospital level and the potential need for upgrading to comply with BEP procedures.	Availability of an assessment report with recommendation on mercury management in HCF	Internal assessment reports related to the need of investment to expand capacity of HCF on HCW management have been completed by the most important HCFs	Mid-Term: assessment criteria for HCF developed and approved; End at least 50 healthcare facilities assessed for mercury management; an assessment report with recommendation for upgrade drafted.	Meeting minutes Assessment report on mercury in HCFs	
Output 2.2.2 Environmentally sound management of MAPs and mercury stockpiles in the healthcare sector demonstrated					

Activity 2.2.2.1 Training on the safe management of MAP in selected healthcare waste facilities.	Number and percentage of participant to training courses who successfully passed the final test disaggregated by gender; Gender-specific information, risks, and handling guidelines offered during the training, whereas applicable	Although training of HCW management is carried out in most of the interviewed HCF, apparently there is limited training on mercury management in normal and emergency situations, if any.	Mid-Term: training course material prepared. One training course involving representatives of at least 10 healthcare facilities. Project end: One training course involving representatives of additional at least 10 healthcare facilities held.	Training materials List of participants Participant evaluation sheets	Assumptions: HCF personnel interested and committed to attend the training. Training materials and trainers up to the required quality standards and international guidelines on the matter. Risk: no significant risks for this activity. Effort should be paid to ensure gender balanced participation to the training
Activity 2.2.2.2 Drafting of plans and procedures to demonstrate the management of MAPs in selected pilot facilities	Number of plans and procedures for MAP management in pilot facilities	Several HCF have reported they have already phased out mercury devices. Some HCFs have mercury stored in burial pits. Others declared they sell mercury sphygmomanometers to junk shops	Mid-Term: plans and procedures drafted for selected pilot facilities who are either using mercury devices or have mercury waste stored at sites: End of project: plans and procedures for MAP phase out implemented in selected HCFs	Meeting minutes Plans and procedures for MAP management	Assumptions: a good cooperation between project team and pilot facilities is established to support on drafting and implementing plan and procedures for the ESM of MAP. Risks: environmental

Activity 2.2.2.3 Environmentally safe management of mercury waste and MAP	Amount (tons) of MAP and mercury waste managed in an environmentally safe way	Some TSDs have equipment for the treatment of mercury lamps. Other adopts encapsulation methods for the permanent storage of mercury thermometers. The amount of mercury disposed by such facilities is uncertain.	Mid-Term: at least 2 tons of MAP and mercury waste managed in an environmentally safe way. Project end: additional 10.5 tons of MAP and mercury waste managed in an environmentally safe way.	Site visit reports. Waste manifest and certificate of disposal	and health risk associated to the management of mercury waste. MAP stockpile not fully identified / inventoried so that mercury associated risk is not fully addressed.
Component 3: Capacity building, awareness raising and knowledge management					
Outcome 3.1 Enhanced capacities to implement policies and workplans for the environmentally-sound management of infectious and hazardous wastes in the healthcare sector					
Output 3.1.1 Capacity building activities related to the environmentally-sound management of infectious and hazardous wastes in the healthcare sector for government authorities, staff of healthcare facilities and TSDs, and civil society organizations undertaken					
ty 3.1.1.1 Training on wastes management in the healthcare sector, including national regulation and WHO Bluebook on the management of HCW	Number and percentage of participant to training courses who successfully passed the final test disaggregated by gender; Gender-specific information, risks, and handling guidelines offered during the training, whereas applicable	N/A	Mid-Term: training course material prepared. One training course involving representatives of at least 10 healthcare facilities and 20 participants from government (DENR, DOH) held. Project end: One training course involving representatives of at least 10 additional healthcare facilities and 20 additional participants for government (DENR, DOH) held	Training materials List of participants Participant evaluation sheets	Assumptions: HCF and TSD personnel interested and committed to attend the training. Training materials and trainers up to the required quality standards and international guidelines on the matter. Risk: no significant risks for this activity. Effort should be paid to ensure gender balanced participation to the training

Activity 3.1.1.2 Training on wastes management for authorised TSD facilities, including analysis of HCW management technologies (handling, collection, transportation, pretreatment and disposal), national regulation and WHO Bluebook on the management of HCW	Number and percentage of participant to training courses who successfully passed the final test disaggregated by gender; Gender-specific information, risks, and handling guidelines offered during the training, whereas applicable	N/A	Mid-Term: training course material prepared. One training course involving representatives of at least 10 TSD and 20 participants from government (DENR, DOH) held. Project end: One training course involving representatives of at least 10 additional TSD and 20 additional participants for government (DENR, DOH) held	Training materials List of participants Participant evaluation sheets	
Activity 3.1.1.3 Platform to enhance the coordination among member agencies of the Inter-Agency Committee on Environmental Health (IACEH) to ensure compliance with Minamata and Stockholm convention	Availability of a functional platform among the IACEH member on Minamata and Stockholm convention	N/A	Mid-Term: the structure and organigram of the platform discussed among members of the IACEH. End of project: the coordination platform established. At least 4 decisions adopted with support from the platform..	Meeting minutes. Platform organigram. Record of decisions	Assumption: member agencies of the IACEH committed to coordinate among them. Risks: the different missions of the member agencies could result in downplaying of the activities related to compliance with Minamata and Stockholm Convention.
Outcome 3.2 Increased awareness and knowledge on infectious and hazardous wastes to promote a whole-of-nation approach towards health and environmental protection					
Output 3.2.1 Awareness raising and advocacy programs targeting the general public, community leaders, schools, enterprises, private sector players, and other stakeholders conducted					

Activity 3.2.1.1. Baseline and post-impact survey among general public and households using KAP or similar methods.	Availability of baseline and post impact KAP survey, gender-disaggregated data collected	N/A	Mid-Term: Baseline KAP survey carried out. End of project: post impact KAP survey carried out.	Baseline and post-impact KAP survey reports Gender-disaggregated data	Assumptions: team in charge of KAP survey up to the quality standard required. Risk: no significant risk for this activity. Effort to be paid to ensure that the survey will capture gender mainstreaming aspects
Activity 3.2.1.2 Preparation of training modules on mercury, PPEs and management of HCW to be incorporated in the K to 12 education system.	Availability of training modules incorporated in the K to 12 education system, promoting female role models among scientists, entrepreneurs, and other practitioners	N/A	Mid-Term: all the training material prepared. Training modules for K to 12 developed. End of project: structure of the training modules K to 12 adopted and demonstrated in additional 2 education institutes of each category	Training materiials. Training report and attendance data by age and sex	Assumptions: HCF and TSD personnel interested and committed to attend the training. Training materials and trainers up to the required quality standards and international guidelines on the matter. Risk: no

Activity 3.2.1.3 Conduction of at least 4 training and 4 awareness raising workshops	Number of training and awareness raising workshops with attendance list of participants disaggregated by gender and age,	N/A	Mid-Term: 2 training workshop and 2 awareness raising workshop carried out with the aim to achieve gender parity among attendants; gender-specific information and handling guidelines incorporated into the training. End of project: additional 2 training workshop and 2 awareness raising workshop carried out with the aim to achieve gender parity among attendants; gender-specific information and handling guidelines incorporated into the training	Training materials. Training report and attendance data by age and sex	significant risks for this activity. Effort should be paid to ensure gender balanced participation to the training

Activity 3.2.1.4. Broadcasting of awareness raising and communication events.	Number of online (TV, Web, workshops) events held.. Size of the audience reached by category.	N/A	At project Mid-Term: at least 2 broadcasting events held on the web. At project end: additional 2 broadcasting events held on the web and one event on a national TV channel. Broadcast timing of the events should suit the availability of the female, elderly, and marginalised communities or should be repeated[CL1]	Awareness raising material Awareness raising attendance data disaggregated by gender and category	
Output 3.2.2 Knowledge management system established					
Activity 3.2.2.1. A Formulation of a Knowledge Management plan	Availability of a KM plan including policies for equal access to information.	N/A	At Mid-Term: Knowledge Management Plan with GM policies drafted and endorsed. At project end: Report on the implementation of the KM plan (to be included in the Project Terminal Report).	KM plan Chapter related to KM report in the Project Terminal Report	Assumption: the team drafting the plan is acknowledgeable on both the technical aspects related to the project and on communication aspects: it will therefore be a multi-

Activity 3.2.2.2. Building and maintenance of the Project Website	Availability of a project website designed for both computer and mobile access, with ease of access policies, and continuously updated with project materials;	N/A	At inception: structure of the project website introduced during the Inception Workshop. At Mid-Term: the project website is fully functional and updated with information generated by the project. At project end: the project website contains all the project information generated during project life	Project website and access statistics	disciplinary team. Risks: COVID-19 pandemic still affecting the implementation of knowledge exchange workshop and traveling of international experts and representatives of other countries govts, hindering a full exchange of information on the matter.
Activity 3.2.2.3 Creation, publication and dissemination of Information, Education and Communication (IEC) materials and relevant reports	Availability of IEC materials as from the KM plan	N/A	At Mid-Term: IEC materials related to project activities prepared and disseminated. At project end: IEC materials related to project results and lesson learned prepared and disseminated	Project website, leaflets, PDF and printed documentations.	
Activity 3.2.2.4. Holding of International knowledge exchange workshops at Mid-Term and at project end	Number of workshops held; number of participants disaggregated by gender	N/A	At Mid-Term: Mid-Term workshop held with gender parity among participants. At project end: final project workshop held with gender parity among participants	Workshop minute and materials. Workshop attendance sheet disaggregated by gender	
Component 4: Monitoring and Evaluation					
Outcome 4.1 Project Monitoring and Evaluation based on lesson learnt ensured					

Output 4.1.1 Project Inception and Monitoring carried out					
Activity 4.1.1.1. Holding of the Inception workshop and preparation of the inception report.	Number of workshops held; number of participants disaggregated by gender,	N/A	At project inception: inception workshop held with the goal to achieve gender parity among attendants.	Inception report Inception workshop minutes	Assumption: project staff and evaluation experts are acknowledgeable in the preparation of all the project-related monitoring, evaluation and planning activities. Risks: no significant risks envisaged for this activity. Effort should be paid to ensure proper gender balance in project management activities
Activity 4.1.1.2. Preparation and approval of Periodic Project reports (PIR, QPR, AWP, QWP) and risk monitoring	Availability of project monitoring and planning documentations .	N/A	Yearly: project reports and workplans as from monitoring procedures established. Visits to project sites	Meeting minutes. PIR, APR, AWP, QPR, QWP Report of visits to project sites	
Output 4.1.2 Independent Mid-Term Review and Terminal Evaluation undertaken					
Activity 4.1.2.1 . Conduction of Independent Mid-Term review and Terminal Evaluation	Availability of Mid-Term Review (MTR) and Terminal Evaluation (TE) reports	N/A	At Mid-Term: Project MTR carried out. At project end: Project TE carried out	MTR report TE report	

[CL1]Target, not an indicator

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).

Annex B: Response to Project Reviews
(from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion, and responses to comments from the Convention Secretariat and STAP at PIF).

A. GEF Secretariat Comments at PIF/Work Inclusion

Comments	Response

Please take into consideration the comments for the preparation for CEOER in above boxes and the below. 1. GEBs: Please further improve the estimation of all indicators under 9 and 10, including avoided mercury emissions (flow) by this project and u-POPs emissions reduction in terms of percentage of waste reduction during the period of each intervention.	A detailed discussion of the project?s GEB is presented in Section F of the project document. The estimate, updated to January 2022, consider the waste generation from ordinary beds and from COVID-19 beds. Estimates of UPOPs reduction were also based on direct (pilot facilities) and indirect contribution of project activities. The project will strongly support proper management of HCW and mercury waste through waste prevention, segregation, and non-burning pre-treatment. Also, limited intervention in landfills, to increase safety and prevent deliberate or accidental open burning, is envisaged. These are seen as main contributory to UPOPs and mercury reduction. The estimates did not include the reduction of U-POPs and mercury from the stack of existing pre-treatment facilities as the main way to achieve GEBs considering that HCW incinerators are not available as a disposal option in the Philippines.
2. Component 1: Please elaborate what measures to be placed to prevent unnecessary disinfection with chlorine-based disinfectant and improper management of waste in the two locations and beyond with more accurate estimated reduction of u-POPs.	The indiscriminate use of disinfectant on healthcare waste is seen as one of the alarming issues on this sector. As there are very few references on this subject, the project aims to provide practical studies and guidelines on the use of disinfectants on HCW. The measures to be undertaken are presented in Output 1.1.2 para 86-87.
3. Component 2: Please further elaborate tracking mercury containing waste from collection to final disposal with different facility capacities in the two locations and beyond.	Tracking mercury wastes from generation to disposal will be fully supported through Output 2.1.2 and the activities thereof. The project aims to improve the Self-Monitoring Report of generators and strengthen the online permitting and monitoring system of DENR-EMB. Adoption of methodologies and possibly software for accurate and timely information regarding mercury-containing wastes/articles will be undertaken.

4. Component 3: Please further elaborate procurement guidance and financial schemes for mid- and long-term period besides short-term loans (co-financing).	Procurement guidance to be developed shall be based on Republic Act 9184 or the Act Providing for the Modernization, Standardization and Regulation of the Procurement Activities of the Government and Other Purposes; promoting transparency and optimizing the government funds i.e three quotations (canvass sheet) from service providers or supplier. One of the issues relayed by government hospitals is the reliability of waste management contracts due to government procedures, thus the project will assess possibility of improving procurement guidelines to ensure that services are continuously provided. Financial schemes can be non-collateral based for short term loans or often called revolving loans. For mid and long term collateral loans requiring real property mortgage. In the case of the project, the short term co-financing can be used as seed money to initiate the project; i.e. initial working capital. For mid to long term, it is focused on infrastructure and innovation. These loans can be availed through financial partners such as DBP under the SWEEP/green financing loan. Manuals and guidance documents will be prepared to facilitate accessing the loans and other financial packages.
5. Further details on Investment mobilized	Detailed discussion on investment mobilized is reflected in the document. Investment mobilized is sourced out mainly from the Sustainable Waste-management for Enhanced Environmental Protection ?SWEEP? loan program of the Development Bank of the Philippines. The loan framework intends to address the challenges posed by the lack of facilities for the environmentally sound disposal of hazardous wastes and maybe accessed by local government units and treatment, storage and disposal facilities (TSD). Participating LGUs and TSD facilities will also mobilize investments to upgrade their equipment and infrastructures primarily addressing healthcare wastes. Partner hospitals have also committed equity investments providing baseline funding in the form of facilities and infrastructures.

B. Council Members? comments posted on 23 March 2021

1. USA

Comments	Response
The project team may wish to consider additionally working with NGOs EcoWaste Coalition and Pure Earth. Both organizations are USAID grantees, under the Municipal Waste Recycling Program and Toxic Site Identification Program (TSIP), respectively	The project will consider working with the suggested NGOs at implementation stage, for specific tasks. UNIDO is already working in the Philippine with EcoWaste Coalition, in the project ?Implementation of PCB Management Programs for Electric Cooperatives and Safe e-wastes Management?

2. DENMARK

Comments	Response
We recognise that the Philippines must address a number of barriers to ensure that the health care waste is managed in an environmental, social and economic sustainable manner, due to in general an inadequate waste management system. This in combination with the COVID-19 pandemic that has caused a significant ramp-up of the generation of waste entails expected increase in the emissions of UPOPs and mercury. It is vital to avoid an increase in the amount of UPOPs generated in the waste and mercury emissions from waste. ? This necessitates good systems for handling of mercury-containing thermometers, sphygmomanometers, mercury reagents from laboratories, and mercury stockpile for dental procedures. We strongly support the efforts to phase-out of Mercury-added product and environmentally sound management of mercury and mercury waste. To prevent the generation of UPOPs is also central, thus we support the actions included in the project.	UNIDO and the Government of the Philippines express their appreciation to Denmark for its support to the project.

3. GERMANY

Germany approves the following PIF in the work program but asks that the following comments are taken into account:

Comments	Response
A further clarification how this project?s design ensures that the measures are sustainably aligned with the Strategic Approach to International Chemicals Management (SAICM) and its priorities would be highly appreciated.	While the project mainly addresses the obligation of the Philippine government to the Stockholm and Minamata Conventions, its envisaged outputs are compliant with the general objective of SAICM on sound management of chemicals and hazardous wastes. The project will coordinate with the current SAICM initiatives in the country and will provide its contribution specifically on the sound management of mercury and reduction of the use of disinfectant in the management of healthcare wastes. (Para 171) This project is compliant with the GEF7 strategy on chemical and waste, with the focus on the environmentally sound management of healthcare waste and mercury waste, with associated reduction of U-POPs and mercury, and is relevant to the objectives of SAICM In addition to the overall compliance with SAICM objectives, the project will conduct specific activities which are directly related with the SAICM objectives to reduce chemical of concern, through the analysis of the impact of different chemical disinfection procedures for waste and objects, which will be conducted through a formal risk assessment procedure (based either on the US-EPA or EU-REACh standards) and the recommendation of less impacting anti-viral disinfectants based on the result of the studies and knowledge exchange with national and international experts (Output 1.1.4). Furthermore, the project intends to achieve more insights on the environmental levels of mercury associated with the use and disposal of mercury in healthcare facilities and TSDs, through the conduction of environmental monitoring envisaging samples in flue gas of treatment plants, soil, sediment and water. This specific activity will be rendered sustainable through a propaedeutic training and capacitation activity (Output 2.1.2), so that not only the knowledge on the environmental level and releases of mercury will be enhanced, but also the institutional capacity to carry out such monitoring activities.

As correctly mentioned in the proposal, ?it is very difficult to estimate how many patients will need to be treated in the hospitals, until the end of the current pandemic?. Since, the program focuses on the pandemic situation, Germany asks to explain whether the project can be scaled/adjusted in case the number of patients is much higher or lower than estimated once implementation begins.	Data related to COVID-19 patient have been continuously updated from the initial concept development until January 2022, to ensure as much as possible that the project captures the evolution of the pandemic and the associated needs in term of healthcare waste management. Such data are reported in detail in the project baseline. In summary, two key facts led to the consideration that the existing additional HCW capacity would not exceed the requirements: 1) The vaccine represented a powerful tool to reduce the mortality associated to the COVID-19, but did not prevent completely infection and hospitalization associated with virus mutation (i.e. Omicron); therefore it should be expected that the resources deployed through the project will remain useful for many years. 2) In any case, beside the COVID-19 emergency what has been found during project preparation is a significant shortage in term of safe management of HCW. The additional capacity which will be directly implemented by the project would not completely cover the current gap at country level; the project intends to establish synergies with existing financial scheme in the Philippine to ensure that much more environmentally sound HCW treatment capacity can be established, beyond project duration and resources.

4. CANADA

Comments	Response
Canada supports this project as it is in line with Stockholm Convention text, and proposed actions to the GEF in the 2018-2022 priority areas as it relates to uPOPs. Canada supports efforts to update the Philippines NIP (compliance with Stockholm Convention Article 7) and notes that this project is in line with the Minamata Convention text as it relates to mercury containing medical instruments.	UNIDO and the Government of the Philippines express their appreciation to Canada for its support to the project.

B. STAP Comments issued on 18 May 2021

Comments	Response

This project has some important, timely features of responding to the sudden rise in medical wastes following the advent of the COVID 19 pandemic. It also links to international environmental agreements ? the Minamata Convention and the Stockholm Convention. However, while the evidence on mercury reduction and associated Global Environmental Benefits (GEBs) is clear, this is not the case for the linkage to UPOP reduction. The project's focus on facemasks and its proposed linkage to UPOP reduction are not clearly made. Reviewing the scientific literature on this topic suggests that while there is a range of chemicals released by facemasks, the UPOP component is not a significant issue in terms of environmental exposure. There may be occupational exposure to the mask wearer directly of some masks (which ones also needs to be more clearly argued as there is such a wide range of materials used). If there is clear research indicating levels of UPOP release from mask burning, that should be identified so that the global environmental benefits can be noted. This is implied in the proposal, but no clear evidence is provided.	The impact of the COVID-19 on plastic pollution has been diverse and complex, as testified by several research articles published in 2021 (Silva et al., Increased plastic pollution due to COVID-19 pandemic: Challenges and recommendations, Chem Eng J. 2021 Feb 1; 405: 126683; European Evironment Agency, https://www.eea.europa.eu/highlights/covid19-in-europe-increased-pollution, etc.). The relationship between the open burning of certain types of plastic waste and the release of U-POPs (chlorinated and brominated dioxin and furans) is also well documented in the literature (see for instance Rinku Verma, K.S. Vinoda, M. Papireddy, A.N.S. Gowda, Toxic Pollutants from Plastic Waste- A Review, Procedia Environmental Sciences, Volume 35, 2016, Pages 701-708); USEPA https://www.epa.gov/dioxin/dioxins-produced-backyard-burning?; Velis CA, Cook E. Mismanagement of Plastic Waste through Open Burning with Emphasis on the Global South: A Systematic Review of Risks to Occupational and Public Health. Environ Sci Technol. 2021 Jun 1;55(11):7186-7207. doi: 10.1021/acs.est.0c08536. Epub 2021 May 18. PMID: 34003007.) and many others. PVC is rarely a component of face masks, PVC is commonly used for the manufacturing of vinyl gloves. Obviously, whilst it is clear that the abandonment of COVID-19 waste, a large fraction of which is made out of plastic, may release U-POPs as a result of accidental or deliberate open-burning, the quantification of the amount of U-POPs release is uncertain and had to rely on assumptions. The detailed calculation of the generation of U-POPs is provided in Section F of the document. In the absence of any study on the matter, U-POPs is calculated from the assumption that a certain amount of healthcare wastes get burnt in the open (which is likely given the general situation of waste management in the Philippine), therefore the U-POP is calculated / estimated based on the emission factor adopted by UNEP for the combustion of medical waste in the absence of an air pollution control system. UPOPs generation estimate is based on only 10% of the additional healthcare wastes (not only facemasks) generated during the pandemic. While a good percentage of the wastes are

The proponents deserve commendation for a good theory of change diagram covering global environmental benefits, risk screening, and gender mainstreaming. The theory of change could be further improved by including the underlying assumptions that will lead to desired outcomes and alternative pathways. STAP's theory of change primer (https://stapgef.org/resources/advisory-documents/theory- change-primer) can be a helpful guide in this regard	The project proponents note the suggestion of the STAP and have further strengthened the TOC. Please see para 71-79
It is not clear from the proposal how the proposed "assistance to small manufacturers of reusable non-medical fabric masks" (paragraph 48 and 58) will contribute to chemicals and waste benefits (i.e., uPOP or Hg emissions reduction). We recommend that this should be made more explicit. Further, given the industrial focus of the project in terms of domestic producers of PPE, the project should have a more clearly articulated private sector engagement strategy.	This was further evaluated to consider the new rules from the inter-agency tasks force in the Philippines. During the start of the pandemic, single use face masks are very common and usually ends up with general wastes. The project proponents during the project design aims to introduce the manufacture of re-usable non medical fabrics as alternative to prevent additional wastes generation. These are further elaborated in several sections of the document including the baseline situation (para 25-31, para 36-37) , alternative scenario (para 91). Private sector engagement strategy is further elaborated. Please see para 161.

Component 3 of the project (capacity building and awareness-raising) will require a change in behavior across the public and private sectors and among citizens to be successful. Therefore, we recommend that the proponent review STAP's recent advisory on behavior change, which highlights six strategic levers for changing behavior, to provide further insight into designing this component. (https://stapgef.org/resources/advisory-documents/why-behavior-change-matters-gef-and-what-do-about-it). There are a few preliminary studies that the World Economic Forum identified around microplastics pollution and face masks, but the UPOP link is not clear: How face masks, gloves, and other coronavirus waste is polluting our ocean (https://www.weforum.org/agenda/2020/06/ppe-masks-gloves-coronavirus-ocean-pollution/). The following open access article with a focused case analysis of how medical waste in the Philippines may be converted to energy generation may provide some further innovation ideas for the project to be considered. Medical waste treatment and electricity generation using pyrolyzer-rankine cycle for specialty hospitals in Quezon City, Philippines ? (https://iopscience.iop.org/article/10.1088/1755-1315/463/1/012180).	Thank you for the reference. We confirm that the project is promoting behavioral change in the public and private sector through the levers of financial incentives (Output 1.1.6 Technical assistance to help Treatment, Storage and Disposal (TSD) facilities and manufacturers of PPEs, to access green financing schemes) , information and training (the whole Component 3-. Training, awareness raising and Knoweledge Management) as well as improvement of the current regulation on healthcare waste (Output 1.1.1 Strengthening of relevant national policies on healthcare wastes management with special focus on responses during pandemics). Suggested literature study on waste-to-energy conversion of healthcare waste are noted. It is also noted that there is limited information related to the Air Pollution Treatment System (APCS) for the equipment described in the paper , and that the proposed temperature (800?C) would not completely prevent the denovo formation of PCDD/F in the destruction process. One pyrolytic equipment has been visited in the course of the project preparation, and based on the information provided by the operators, it was affected by technical issues and discontinuous operation. Further analysis on the technical specifications related to the minimum requirement in term of APCS and continuous operation capacity will be gathered in the course of project implementation, Activity 1.2.2.2 (Drafting of technical specification for BAT medical waste storage and treatment technologies at both HCF and TSD level)

Part I: Project Information B. Indicative Project Description Summary	**What STAP looks for?**	**Comment/Reviewer?s Response**	**Agency Response**
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 ? though the connection between changes in production and use of Face Masks and its linkage to UPOPs is unclear, whereas mercury reduction is clearer from medical devices.	The increase in the number of face masks (or PPEs) use may contribute to domestic and healthcare wastes which, when improperly disposed (open burned)and under certain circumstances, may generate UPOPs. Production of re-usable facemask and other PPEs with the same layer of protection as those which are disposable may reduce the use and therefore, disposal of facemasks. These are further elaborated in several sections of the document including the baseline situation (para 25-31, para 36-37) , alternative scenario (para 91).

Outcomes	A description of the expected short-term and medium-term effects of an intervention. Do the planned outcomes encompass important environmental benefits? Are the global environmental benefits likely to be generated?	Yes, for the mercury aspect of the project. The UPOPs and face mask aspects need to be further clarified.	Please see response above.
Outputs	A description of the products and services which are expected to from the project? Is the sum of the outputs likely to contribute to the outcomes?	Yes, for the mercury aspect of the project. The UPOPs and facemask aspects need to be further clarified.	Please see response above.
Part II: Project justification: A simple narrative explaining the project's logic, i.e. a theory of change.			
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? Are the barriers and threats well described and substantiated by data and references? 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?	Yes ? the mercury aspect is adequately presented. The UPOPs element needs to be further clarified.	The UPOPs elements have been detailed in relevant section including sections mentioned above and Section 6: Global environmental benefits (para 130-133).

2) the baseline scenario or any associated baseline projects	Is the baseline identified clearly? Does it provide a feasible basis for quantifying the project's benefits? Is the baseline sufficiently robust to support the incremental (additional cost) reasoning for the project? 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; are the lessons learned from similar or related past GEF and non-GEF interventions described; and how did these lessons inform the design of this project?	Yes, there are citations to earlier UNIDO studies and materials provided.	UNIDO studies and several relevant sources have been used and cited.

3) the proposed alternative scenario with a brief description of expected outcomes and components of the project	What is the theory of change? What is the sequence of events (required or expected) that will lead to the desired outcomes? ? What is the set of linked activities, outputs, and outcomes to address the project's objectives? ? Are the mechanisms of change plausible, and is there a well- informed identification of the underlying assumptions? ? Is there a recognition of what adaptations may be required during project implementation to respond to changing conditions in pursuit of the targeted outcomes?	Yes, the theory of change is nicely presented and includes risk analysis and linkage to gender mainstreaming, which are good synergistic features of the diagram. It can be further improved by including underlying assumptions and alternative pathways.	The Theory of Change has been fully elaborated on para 71-79
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? LDCF/SCCF: will the proposed incremental activities lead to adaptation which reduces vulnerability, builds adaptive capacity, and increases resilience to climate change?	Partially presented	Incremental reasoning was expanded and fully elaborated on Section E para 129.

6) global environmental benefits (GEF trust fund) and/or adaptation benefits (LDCF/SCCF)	Are the benefits truly global environmental benefits, and are they measurable? Is the scale of projected benefits both plausible and compelling in relation to the proposed investment? Are the global environmental benefits explicitly defined? Are indicators, or methodologies, provided to demonstrate how the global environmental benefits will be measured and monitored during project implementation? What activities will be implemented to increase the project's resilience to climate change?	Yes ? if there is an overall reduction in UPOPs and mercury, the impacts can be global. But clear information is needed to UPOPs benefits of the project.	The UPOPs elements have been detailed in relevant section including sections mentioned above and Section 6: Global environmental benefits (para 130-133).
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? Is there a clearly-articulated vision of how the innovation will be scaled-up, for example, over time, across geographies, among institutional actors? Will incremental adaptation be required, or more fundamental transformational change to achieve long term sustainability?	Moderately innovative in terms of the use of pollution prevention approaches and efforts at behavioral change regarding mask wearing and reuse.	The comment is noted. Innovativeness section has been appropriately strengthened.

1b. Project Map and Coordinates. Please provide geo-referenced information and map where the project interventions will take place.		Yes	
2. Stakeholders. Select the stakeholders 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.	Have all the key relevant stakeholders been identified to cover the complexity of the problem, and project implementation barriers? 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?	Yes	

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 indicators? yes/no /tbd**	Have gender differentiated risks and opportunities been identified, and were preliminary response measures described that would address these differences? Do gender considerations hinder full participation of an important stakeholder group (or groups)? If so, how will these obstacles be addressed?	Gender issues are clearly noted in the theory of change as a major lens through which the project would see its objectives realized.	Gender elements have also been fully evaluated through a detailed gender analysis and streamlined in the project logical framework.

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? Are there social and environmental risks which could affect the project? For climate risk, and climate resilience measures: ? 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? ? 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?	Climate risk is mentioned in the risk section, but detailed risk screening still needs to be developed. .	Detailed Environmental and Social Management Plan was developed which incorporated a risk screening matrix.

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? Is there adequate recognition of previous projects and the learning derived from them? Have specific lessons learned from previous projects been cited? How have these lessons informed the project's formulation? 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?	Private sector engagement should have been noted more clearly given that this involves waste reduction efforts which has a direct industry nexus.	The project proponents endeavored to have a strong private sector engagement in the project and resulted to increased cofinancing commitment for the project. This is envisaged to strongly support the baseline project.
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.	What overall approach will be taken, and what knowledge management indicators and metrics will be used? What plans are proposed for sharing, disseminating and scaling-up results, lessons and experience?	Yes noted	

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

The PPG fund utilization is summarized in the table below:

PPG Grant Approved at PIF: **USD 150,000**			
Project Preparation Activities Implemented	***GETF/LDCF/SCCF/CBIT Amount ($)***		
	Budgeted Amount	***Amount Spent To date***	***Amount Committed***

Meetings and workshops (inception meeting, focus group discussions, coordination meeting, consultative workshops, validation workshops)	25,000	4,728.63	20,271.37
Baseline data collection and analysis (visit to facilities, exchange visit, preliminary analysis and experts? mission)	80,000	38,389.10	41, 610.9
Selection and Assessment of PEE	5,000	2,868.08	2,131.92
Preparation of environmental and social management framework, stakeholder engagement plan and gender study	20,000	17,142.24	2,857,76
Development of the logical framework and project document	20,000	10,925.79	9,074.21
Total	**150,000**	**74, 053.84**	**75,946.16**

Note: In accordance with the Guidelines on Project and Program Cycle Policy (2020 Update), the committed funds will be spent on eligible expenditures in the project start-up phase, within the 1st year of implementation.

ANNEX D: Project Map(s) and Coordinates

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

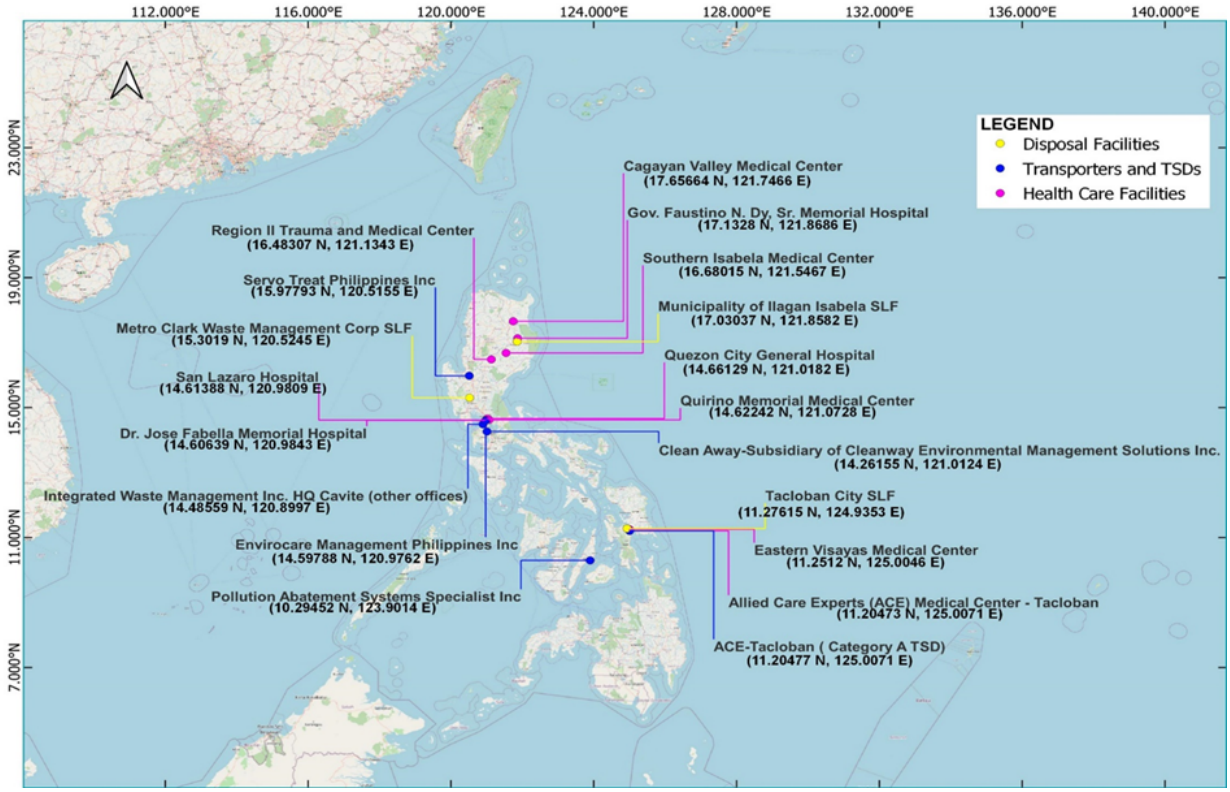
The proposed project sites are Region 2 (Cagayan Valley), Region 8 (Eastern Visayas), and the National Capital Region (Metro Manila). The selection is primarily based on the following criteria: (i) number of COVID-19 cases; (ii) lack of TSD facilities (Category A, B, and E) for M501 wastes in the region or the treatment capacity of TSD facilities could not accommodate the infectious wastes generated per day.

? The National Capital Region registered the highest COVID-19 cases. Moreover, its three TSD facilities, having a total treatment capacity of 58 tons per day cannot accommodate the 404.7 tons daily generation rate

? Region 2 does not have a single treatment facility. M501 wastes are stored in septic vaults. Most of the hospitals send wastes to Region 3, NCR or Region IVA (Calabarzon) for treatment.

? For Region 8, there is no facility to treat M501 wastes in the region. The existing TSD facility is Category F that collects M501 wastes for temporary storage prior to treatment and disposal in Region IVA. Other hospitals have their wastes collected and treated by a TSD facility based in region 7 (Central Visayas).

The site coordinates are given below:



ANNEX E: Project Budget Table

Please attach a project budget table.

Below is a summary of the budget table. For more information on the budget, calculation of expenses, cost distribution of PMC, etc. please refer to the uploaded Annex E.

Expenditure category	Detailed description *	Component 1	Component 2	Component 3	Component 4	Subtotal (Component 1 - 4)	M&E	
International Consultants	1, 5, 8, 13, 17, 21, 25, 28, 34, 37, 42, 45, 49, 53, 57, 61	227,400	81,000	45,000	50,400	403,800	50,400	
National Experts	2, 6, 9, 14, 22, 26, 29, 35, 38, 43, 50, 54, 58, 62	224,000	192,000	66,800	69,600	552,400	69,600	2
Subcontracts	10, 23, 30, 39, 46, 51, 55, 59, 66	293,150	618,000	270,000	0	1,181,150	0	
Travels	3, 7, 11, 15, 18, 24, 27, 31, 36, 40, 44, 47, 52, 56, 60, 63	135,250	111,600	58,800	33,400	339,050	33,400	
Sundries		0	0	0	0	0	0	
Equipment	19, 32, 48, 64	1,585,200	500,000	0	8,000	2,093,200	8,000	
Workshop/Training	4, 12, 16, 20, 33, 41, 65	23,550	4,600	37,900	14,350	80,400	14,350	
Grand Total		**2,488,550**	**1,507,200**	**478,500**	**175,750**	**4,650,000**	**175,750**	**2**

Budget notes

1	2 International consultants providing expertise and sharing knowledge on international policies and regulation on healthcare waste for a total number of 8 working days at 600 USD/day. 1 International consultant providing technical assistance and expertise on regulation for the prevention of U-POPs and mercury from healthcare waste management for a total number of 8 working days at 600 USD/day.
2	1 Local Consultant performing gap analysis on national policies on healthcare waste for a total number of 20 working days at 200 USD/day. 1 Local Consultant preparing an improved draft on HCW policies aimed at minimising release of U-POPs and mercury for a total number of 30 working days at 200 USD/day. 1 Local Consultant organizing a consultation on improved draft on HCW policies for a total number of 10 working days at 200 USD/day. 1 Local Consultant providing technical assistance to the government on the finalisation and endorsment of HCW policies for a total number of 30 working days at 200 USD/day.
3	25 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 1 International Travel estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package.
4	One small workshop on the consultation on the improved draft on HCW polices for an overall amount of 2300 USD.
5	1 International consultant providing technical assistance and expertise on on methods for the calculation of medical waste amounts generated in HCF and households for a total number of 10 working days at 600 USD/day.1 International consultant supervising on inventory of HCW in healthcare facilities and urban areas for a total number of 20 working days at 600 USD/day.1 International consultant providing technical assistance and expertise on the drafting of HCW inventory guidelines for a total number of 10 working days at 600 USD/day.
6	1 Local Consultant working on the definition of official calculation methods for estimating HCW generated from HCFs and households for a total number of 30 working days at 200 USD/day.2 Local Consultants carrying out the inventory of HCW in at least 10 HCFs and one urban area for a total number of 100 working days at 200 USD/day.2 Local Consultants drafting the Guidelines on the inventory of HCW for a total number of 20 working days at 200 USD/day.

7	24 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 1 International Travel estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package..
8	1 International consultant working on the selection and testing of LCA models and database for different PPEs for a total number of 30 working days at 600 USD/day.1 International consultant providing technical assistance and sharing knowledge on the supervision and reporting of LCA assessment for at least 3 different PPE typologies with at least 2 manufacturing alternative considered for each product in compliance with the objective to reduce waste and U-POPs generation for a total number of 30 working days at 600 USD/day. 1 International consultant providing technical assistance and sharing knowledge on standard methods for the assessment and certification of PPEs for a total number of 10 working days at 600 USD/day.
9	1 Local Consultant providing technical assistance on the selection and testing of an LCA model and the specific database for a total number of 10 working days at 200 USD/day.1 Local Consultant working on LCA for at least 3 different PPE typologies with at least 2 manufacturing alternative considered for each product in compliance with the objective to reduce waste and U-POPs generation for a total number of 60 working days at 200 USD/day.1 Local Consultant coordinating assessment of technical performance of PPEs for a total number of 20 working days at 200 USD/day.
10	1 Subcontract for providing package including training of a small group and LCA software for an overall amount of 10000 USD.1 Subcontract for setting out the LCA databases and carrying out the LCA analysis for at least 3 typologies of PPE with at least 2 manufacturing alternatives for an overall amount of 78150 USD.
11	10 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 3 International Travel estimated as one round flight at 2500 USD plus 10 days with a DSA of 250 USD/day for each travel package.
12	One workshop on the result of LCA analysis for PPEs for an overall amount of 2300 USD.
13	1 International consultant undertaking on hazard characterisation and data collection for at least 10 chemical disinfectants for a total number of 35 working days at 600 USD/day.1 International consultant undertaking on exposure assessment to chemicals contained in at least 10 disinfectant based on EU or US-EPA chemical risk assessment procedures for a total number of 35 working days at 600 USD/day.1 International consultant providing technical assistance and sharing knowledge on the drafting of recommendations on the use of antiviral disinfectant based on the result of the studies and knowledge exchange with national and international experts for a total number of 10 working days at 600 USD/day.
14	1 Local Consultant undertaking the hazard characterisation of viral disinfectant in cooperation with the international consultant for a total number of 40 working days at 200 USD/day.1 Local Consultant undertaking exposure assessment to chemicals contained in disinfectant in coordination with the international consultant for a total number of 40 working days at 200 USD/day.1 Local Consultant drafting a recommendation report on the use of anti-viral disinfectants for a total number of 20 working days at 200 USD/day.
15	4 National Travels estimated each as one round flight at 200 USD plus one day accommodation at 250 USD/day.
16	One workshop on the recommended disinfection procedures and chemicals in the Philippines for an overall amount of 2300 USD.

17	1 International consultant participating in on consultation with PPE manufacturers and importers for a total number of 5 working days at 600 USD/day.1 International consultant providing technical assistance and sharing international knowledge on PPE manufacturing and importing for a total number of 10 working days at 600 USD/day.1 International consultant providing technical assistance and sharing international knowledge on standards for reusable "community" PPE for a total number of 5 working days at 600 USD/day.1 International consultant providing technical assistance and sharing international knowledge on clean production and circular economy approaches on manufacturing of reusable PPEs for a total number of 30 working days at 600 USD/day
18	1 Local Consultant organizing a consultation with PPE manufacturers and importers for a total number of 10 working days at 200 USD/day.1 Local Consultant performing an analysis of the PPE manufacturing scenario in the Philippines for a total number of 20 working days at 200 USD/day.1 Local Consultant drafting guidelines on clean production and circular economy for reusable PPE in the Philippine for a total number of 20 working days at 200 USD/day.1 Local Consultant providing technical assistance and knowledge on clean production and circular economy in industrial manufacturing processes (PPEs) for a total number of 140 working days at 200 USD/day
19	20 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 2 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package
20	1 Equipment and furniture sets for improving the quality and sustainability of the manufacturing of PPE in the Philippines based on the guidelines developed under output 1.1.5 for an overall amount of 100200 USD
21	One small workshop on the consultation with PPE manufacturers and importers for an overall amount of2300 USD.
22	1 International consultant Providing technical assistance and supervision on analysis of current financial opportunities at national and international level for a total number of 10 working days at 600 USD/day. 1 International consultant Providing technical assistance and supervision on Assistance to (MSME) in the preparation of applications to be submitted to financing institutions to support initiatives on ESM of HCW, manufacturing of PPEs, or replacement of MAP non-mercury products for a total number of 10 working days at 600 USD/day
23	1 Local Consultant carrying out an analysis of current financial opportunities and development of guidance materials to facilitate the access to green financing for MSMEs for a total number of 140 working days at 200 USD/day. 1 Local Consultant providing technical assistance to MSME in the preparation of applications to be submitted to financing institutions on ESM of HCW, manufacturing of PPEs, or replacement of MAP with non-mercury products for a total number of 50 working days at 200 USD/day
24	1 Subcontract for to assist in the preparation of technical specification, plans and drawings required for the application under existing incentive scheme for BAT compliant HCW disposal technologies for an overall amount of 40000 USD
25	2 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day
26	1 International consultant providing technical assistance and international knowledge on survey of existing TSD in the Philippines for a total number of 20 working days at 600 USD/day. 1 International consultant providing technical assistance and international knowledge on on the strategy document for the improvement of the HCW treatment and transportation sector for a total number of 30 working days at 600 USD/day
27	2 Local Consultants carrying out the survey of existing TSD in the Philippines for a total number of 100 working days at 200 USD/day. 2 Local Consultants drafting a strategy document for the improvement of the HCW treatment and transportation sector for a total number of 60 working days at 200 USD/day
28	20 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day.

	1 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package
29	1 International consultant providing technical assistance and international knowledge on the validation of the proposed intervention for HCF and TSD facilities to be supported with ESM technologies for a total number of 3 working days at 600 USD/day. 1 International consultant providing technical assistance and international knowledge on drafting of technical specifications and bidding documents for HCW treatment technologies for a total number of 10 working days at 600 USD/day. 2 International consultants providing technical assistance and international knowledge on supervision of procurement, installation, testing and operation of the HCW disposal technologies for a total number of 40 working days at 600 USD/day.
30	1 Local Consultant developing the validation of the proposed intervention for HCF and TSD facilities to be supported with ESM technologies for a total number of 10 working days at 200 USD/day. 1 Local Consultant supporting the drafting of technical specifications and bidding documents for HCW treatment technologies for a total number of 60 working days at 200 USD/day. 2 Local Consultants undertaking supervision of procurement, installation, testing and operation of the HCW disposal technologies for a total number of 80 working days at 200 USD/day.
31	Contractual services for installation and testing of BAT technologies for HCW treatment and disposal (USD 150.000)
32	40 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. . 6 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package.
33	BAT equipment for HCW treatment and disposal (USD 1.485.000).
34	Two small workshop on the technical specification for medical waste treatment technologies at TSD level for an overall amount of4600 USD. One multi-day workshop for the selection of the provider of disposal technologies and / or selection of beneficiary of waste disposal subsidies for an overall amount of 9750 USD.
35	1 International consultant providing international experience and knowledge on Minamata initial assessment and related requirements for a total number of 10 working days at 600 USD/day. 1 International consultant provide international experience and knowledge on policies and action plans on MAPs phase out, as well as ESM of mercury waste for a total number of 15 working days at 600 USD/day. 1 International consultant provide international experience and knowledge on support to Hg-IATWG governmental agencies for a total number of 20 working days at 600 USD/day
36	2 Local Consultants working Minamata initial assessment update including its implementation and related requirements for a total number of 40 working days at 200 USD/day. 2 Local Consultants working formulation of policies and action plans that need to be revised and new regulations to support the phase-out of MAPs for a total number of 60 working days at 200 USD/day. 3 Local Consultants providing support to Hg-IATWG governmental agencies for a total number of 100 working days at 200 USD/day
37	20 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day.
38	1 International consultant providing international experience and knowledge on information related to mercury and mercury waste monitoring, tracking and reporting for a total number of 20 working days at 600 USD/day. 1 International consultant providing international experience and knowledge on environmental monitoring in enterprises with special reference to mercury for a total number of 5 working days at 600 USD/day. . 1 International consultant conducting training and supervision on monitoring of mercury levels in emissions, releases and water bodies for a total number of 10 working days at 600 USD/day. 1 International consultant revising report on environmental monitoring of mercury levels in 10 monitoring campaigns for a total number of 10 working days at 600 USD/day

39	2 Local Consultants supporting GoP on gathering information on mercury monitoring, tracking and reporting for a total number of 100 working days at 200 USD/day. 1 Local Consultant undertaking the revision and update of the "Self-Monitoring Reports (SMR)" for industries and other reporting mechanisms for a total number of 80 working days at 200 USD/day. 1 Local Consultant supporting the government on OPMS and the other existing databases for a total number of 80 working days at 200 USD/day. 1 Local Consultant providing technical support on the collation and systematisation of mercury data for a total number of 80 working days at 200 USD/day. 2 Local Consultants coordinating. and conducting training and supervision monitoring of mercury levels in emissions, releases and water bodies for a total number of 20 working days at 200 USD/day. 1 Local Consultant coordinating sampling and monitoring activities undertaken by the laboratory firm for a total number of 20 working days at 200 USD/day
40	1 Subcontract for undertaking 10 sampling and analysis of flue gas at 2000 USD each, 40 of environmental air at 1000 USD each, 50 of water bodies and 50 soil samples for mercury levels at 150 USD plus reporting (4300 USD/site) for an overall amount of 118000 USD
41	22 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 1 International Travel estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package.
42	2 small workshops for a total number of 2 working days at 200 USD/day
43	1 International consultant providing international experience and knowledge on mercury disposal technologies suitable for TSD facilities for a total number of 10 working days at 600 USD/day. 1 International consultant providing international experience and knowledge on mercury management in healthcare facilities for a total number of 10 working days at 600 USD/day
44	2 Local Consultants carrying out assessment of existing facilities (TSD) in terms of procedures and technologies being adopted and the potential need for upgrading in order to become BAT/BEP compliant for a total number of 80 working days at 200 USD/day. 4 Local Consultants carrying out assessment of selected mercury waste management at hospital level and the potential need for upgrading to comply with BEP procedures. for a total number of 80 working days at 200 USD/day
45	80 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 4 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package
46	1 International consultant undertaking training on the safe management of MAP in healthcare facilities for a total number of 5 working days at 600 USD/day. 1 International consultant providing international experience and knowledge on plans and procedures for the management of MAPs in pilot facilities for a total number of 10 working days at 600 USD/day. 1 International consultant supervising and drafting report on Environmental safe management of mercury waste and MAP for a total number of 10 working days at 600 USD/day
47	2 Local Consultants undertaking training on the safe management of MAP in healthcare facilities for a total number of 40 working days at 200 USD/day. 2 Local Consultants drafting plans and procedures to demonstrate the management of MAPs in selected pilot facilities for a total number of 80 working days at 200 USD/day. 2 Local Consultants coordinating and supervising Environmental safe management of mercury waste and MAP for a total number of 100 working days at 200 USD/day
48	Disposal services for the environmental safe disposal of MAPs and mercury waste (500,000 USD)
49	26 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 4 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package
50	Equipment: TSDs and / or HCFs technologies for the environmental safe disposal of MAPs and mercury waste (500,000)

51	1 International consultant providing training on wastes management in the healthcare sector, including national regulation and WHO Bluebook for a total number of 6 working days at 600 USD/day. 1 International consultant providing training on waste management for authorised TSD facilities, including analysis of HCW management technologies for a total number of 6 working days at 600 USD/day.
52	1 Local Consultant coordinating and providing training on wastes management in the healthcare sector, including national regulation and WHO Bluebook for a total number of 20 working days at 200 USD/day. 1 Local Consultant coordinating and providing training on waste management for authorised TSD facilities, including analysis of HCW management technologies for a total number of 20 working days at 200 USD/day. 1 Local Consultant providing technical assistance to the platform to enhance the coordination among member agencies for a total number of 20 working days at 200 USD/day
53	1 Subcontract for hosting, organising and carrying out training on wastes management in the healthcare sector, including national regulation and WHO Bluebook for an overall amount of 20000 USD. 1 Subcontract for hosting, organising and carrying out training on wastes management for authorised TSD facilities, including analysis of HCW management technologies for an overall amount of 20000 USD. 1 Subcontract for ensuring the operation of the platform including the management of the website and of the IT system over project lifetime for an overall amount of 40000 USD
54	6 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 2 International Travel estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package.
55	1 International consultant on supporting the development of awareness raising material for a total number of 15 working days at 600 USD/day. 1 International consultant revising training modules on mercury, PPEs and management of HCW for a total number of 12 working days at 600 USD/day. 1 International consultant participating in at least 4 training and 4 awareness raising workshops for a total number of 12 working days at 600 USD/day
56	1 Local Consultant on developing awareness raising material for a total number of 24 working days at 200 USD/day. 1 Local Consultant preparing training modules on mercury, PPEs and management of HCW for a total number of 25 working days at 200 USD/day. 1 Local Consultant participating in at least 4 training and 4 awareness raising workshops for a total number of 25 working days at 200 USD/day
57	1 Subcontract for carrying out Baseline and post-impact survey among general public and households using KAP or similar methods for an overall amount of 80000 USD. 1 Subcontract for hosting, organising and carrying out 4 training and awareness raising workshops for an overall amount of 50000 USD
58	14 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 2 International Travel estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package.
59	1 International consultant to provide international experience and knowledge on the development of materials and reports for the knowledge management unit for a total number of 10 working days at 600 USD/day. 1 International consultant revising on documents and material before publication on the website for a total number of 10 working days at 600 USD/day. 1 International consultant participating in the IKEW and developing PPTs on for a total number of 4 working days at 600 USD/day.

60	2 Local Consultants undertake day to day supervision of the knowledge management unit, including the collation of relevant materials to be published and the coordination of training and awareness raising initiatives for a total number of 100 working days at 200 USD/day. 1 Local Consultant collating and revising documents and material before publication on the website for a total number of 40 working days at 200 USD/day. 2 Local Consultants coordinating the IKEW and developing PPT for the speech of the PMU for a total number of 20 working days at 200 USD/day. 2 Local Consultants participating and preparing materials and deport in awareness raising and communication events for a total number of 40 working days at 200 USD/day
61	1 Subcontract for developing communication materials for an overall amount of 20000 USD. 1 Subcontract for developing, publishing and mantaining the project website for an overall amount of 40000 USD. .
62	44 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 2 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package.
63	Two international workshops in mixed modality (remote and in presence) including workshop facilities and translation service for an overall amount of 19500 USD. 4 Awareness raising events and 4 communication events for an overall amount of 18400 USD
64	1 International consultant participating in the inception workshop preparation and reporting for a total number of 7.3 working days at 600 USD/day. 1 International consultant providing international experience and knowledge on indicator development, monitoring and planning activities for a total number of 10 working days at 600 USD/day. 2 International consultants undertaking on mid term review and terminal evaluation as per GEF rules for a total number of 70 working days at 600 USD/day
65	2 Local Consultants participating in inception workshop preparation and reporting for a total number of 13 working days at 200 USD/day. 3 Local Consultants undertaking day to day monitoring and adaptive management based on lesson learnt, monitoring of Gender Action Plan for a total number of 100 working days at 200 USD/day. 2 Local Consultants undertaking mid term review and terminal evaluation as per GEF rules for a total number of 140 working days at 200 USD/day
66	Subcontract to perform 3rd party monitoring and verification exercise
67	52 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. 3 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package
68	Inception workshop expenses for an overall amount of 9750 USD. . Two small workshops for the presentation of the results of the mid term review and terminal evaluation for an overall amount of 4600 USD
69	Contractual services for implementation partner, including salary cost for project management staff, supplies, travel, project financial auditing, equipment and sundries as detailed

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.

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 Agencys 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.

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).