

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Project title:** Reduce the impact and release of mercury and POPs in Viet Nam through lifecycle approach and Ecolabel | | | | | |
| Country: Viet Nam | **Implementing Partner (GEF Executing Entity):** Ministry of Natural Resources and Environment | | | | **Execution Modality**: NIM |
| **Contributing Outcome (UNDAF/CPD, RPD, GPD)**:  **UNDAF Outcome***:* OUTPUT 2.2 Accelerated implementation of policies and measures and enhanced awareness and engagement of stakeholders for low-carbon development, circular economy, environmental protection, and reduced environmental pollution.  **UNDP Country Program Outcome:** OUTPUT 2.2: Policies and solutions designed and implemented for transformation to low-carbon development, circular economy, and environmental protection | | | | | |
| UNDP Social and Environmental Screening Category: Moderate | | | **UNDP Gender Marker: (2)** | | |
| **Atlas Award ID:** 00128574 | | | **Atlas Project/Output ID:**00122537 | | |
| **UNDP-GEF PIMS ID number:** 6491 | | | **GEF Project ID number:** 10519 | | |
| **LPAC meeting date:** TBD | | | | | |
| Last possible date to submit to GEF: 3 Dec 2021 | | | | | |
| Latest possible CEO endorsement date: 3 Jun 2022 | | | | | |
| Project duration in months: 48 | | | | | |
| Planned start date: July 2022 | | | Planned end date: July 2026 | | |
| Expected date of Mid-Term Review: July 2024 | | | Expected date of Terminal Evaluation: May 2026 | | |
| **Brief project description:**  The objective of the project is to protect human health and environment and promote sustainable production and consumption through the reduction of the use of POPs, new POPs and mercury and the release of POPs, U-POPs and mercury throughout the lifecycle in key industrial sectors supported by Ecolabel system, Green Financing, and Procurement mechanisms.  The project intends to speed up the elimination of industrial POPs (SCCP, PFOS, PFOAs, HBCDD, PBDEs) from import and use, to reduce the release of mercury and U-POPs from industrial sources, to eliminate the manufacturing and use of mercury containing devices through a number of activities, including (a)the establishment of a Green Financing Mechanism (Grant and Loan) and Green Procurement, Ecolabel and Environmentally friendly productions; (b) the demonstration of POP-free manufacturing and design; (c) the demonstration of air pollution treatment devices for the abatement of U-POPs and mercury from the stack of industrial processes; (d) the removal of at least 35 tons of POPs, 20,000 fluorescent lamps, and 10,000 medical devices, their sound disposal and the replacement with non-mercury equipment; (e) and the improvement of the regulatory framework concerning POPs and mercury. The project builds on the experience gathered with the project “Application of Green Chemistry in Viet Nam to Support Green Growth and Reduction in the Use and Release of POPs/Harmful Chemicals“ (GEF9379) and the “Viet Nam POPs and Sound Harmful Chemicals Management Project’ (GEF5067). | | | | | |
| **Financing Plan** (only cash transferred to UNDPs bank account and included in the TBWP for this specific GEF project should be included under this section (1), all others should be included under section (2). | | | | | |
| GEF Trust Fund grant (specify if fund is LDCF/SCCF and include only the portion approved by GEF CEO under UNDP) | | | **USD 4,600,050** | | |
| 1. Total Budget administered by UNDP | | | USD 4,600,050 | | |
| Co-financiers that will deliver project results included in the project results framework (Funds not administered through UNDP accounts) | | | | | |
| VIETNAM PLASTICS ASSOCIATION (VPA) | | | USD 3,500,000 | | |
| VIETNAM CORROSION ASSOCIATION (VICORRA) | | | USD 3,000,000 | | |
| VINAFOAM VIETNAM CO. LTD | | | USD 2,000,000 | | |
| Vietnam Environment Protection fund | | | USD 5,000,000 | | |
| Vietnam Environment Administration | | | USD 11,750,000 | | |
| Vietnam Environment Administration | | | USD 200,000 | | |
| Ministry of Industry and Trade | | | USD 1,999,800 | | |
| Ministry of Health | | | USD 500,000 | | |
| Germany -EU/UNDP | | | USD 600,000 | | |
| 1. Total confirmed co-financing | | | **USD 28,549,800** | | |
| 1. Grand-Total Project Financing (1)+(2) | | | **USD 33,149,850** | | |
| Signatures: | | | | | |
| **Signature:** print name below | | Agreed by Government Development Coordination Authority | | **Date/Month/Year:** within 25 days of GEF CEO endorsement | |
| **Signature:** print name below | | Agreed by Implementing Partner | | **Date/Month/Year:** within 25 days of GEF CEO endorsement | |
| **Signature:** print name below | | Agreed by UNDP | | **Date/Month/Year:** within 25 days of GEF CEO endorsement | |
| Key GEF Project Cycle Milestones:  **Project document signature**: within 25 days of GEF CEO endorsement  **First disbursement date**: within 40 days of GEF CEO endorsement  **Inception workshop date**: within 60 days of GEF CEO endorsement  **Operational closure:** end date as per the approved duration of the project from date of the Project Document signature  **Financial closure:** within 6 months of operational closure | | | | | |

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**List of Acronyms and Abbreviations**

|  |  |
| --- | --- |
| ADB | Asian Development Bank |
| APCS | Air Pollution Control System |
| BDE | Bromo Diphenyl Ether |
| BFR | Brominated Flame Retardants |
| BIDV | Bank for Investment and Development of Vietnam |
| CAAP | Clean Air Action Plan |
| COP | Conference of the Parties |
| DONRE | Department of National Resource and Environment |
| EEE | Electric and Electronic Equipment |
| EOL | End of Life |
| EPR | Extended Producer Responsibility |
| EPS/XPS | Expanded or Extruded Polystyrene |
| ERC | UNDP Evaluation Resource Center |
| ESMF | Environmental and Social Management Framework |
| ESMS | Environmental and Social Management System |
| FSP | Full Sized Project |
| GEF | Global Environment Facility |
| GEFSEC | Global Environment Facility Secretariat |
| GM | Gender Mainstreaming |
| GoV | Government of Vietnam |
| HBB | Hexa Bromo Biphenyl |
| HBCDD | Hexabromocyclododecane |
| HCBD | Hexachlorobutadiene |
| HTI | High Temperature Incineration |
| IP | Implementing Partner |
| LED | Light Emitting Diode |
| LEP | Law on Environmental Protection |
| LPAC | Local Project Appraisal Committee |
| MCCP | Medium Chain Chlorinated Paraffins |
| MOC | Ministry of Construction |
| MOH | Ministry of Health |
| MOIT | Ministry of Industry and Trade |
| MOLISA | Ministry of Labour - Invalids and Social Affairs |
| MONRE | Ministry of Natural Resources and Environment |
| MTR | Mid-Term Review |
| NAP | National Action Plan |
| NGO | Non-Governmental Organisation |
| NIP | National Implementation Plan |
| NSEP | National Strategy on Environment Protection |
| PBDEs | Polybrominated Diphenyl Ethers |
| PCDD/F | Polychlorinated Dibenzo Dioxins / Furans |
| PCP | Pentachlorophenol and its salt and esters |
| PFAs | Polyfluoroalkyl substances |
| PFOAs | Perfluorooctanoic acid |
| PFOS | Perfluorooctane sulfonic acid |
| PIF | Project Identification Form |
| PIMS | Project Information Management System |
| PIR | GEF Project Implementation Report |
| POPP | Programme and Operations Policies and Procedures |
| POPs | Persistent Organic Pollutants |
| PPG | Project Preparation Grant |
| PTS | Persistent and Toxic Substances |
| REACH | EU Regulation EC 1907/2006 on the Registration, Evaluation, Authorisation of Chemicals |
| RF | Result Framework |
| ROHS | EU Directive 2011/65 / EU on the Restriction of Certain Hazardous Substances |
| SCCP | Short Chain Chlorinated Paraffins |
| SMEs | Small and Medium Enterprises |
| STAP | GEF Scientific Technical Advisory Panel |
| TE | Terminal Evaluation |
| TOC | Theory of Change |
| TOR | Term of References |
| UNDP | United Nations Development Programme |
| U-POPs | Unintentional Persistent Organic Pollutant |
| USD | United States Dollar |
| VEA | Vietnam Environment Administration |
| VEPF | Vietnam Environmental Protection Fund |
| VGGS | Vietnam Green Growth Strategy |
| VIHEMA | Vietnam Health Environment Management Agency |
| VINACHEMIA | Vietnam Chemicals Agency |
| VND | Vietnam Dong |
| WEEE | Wasted Electric and Electronic Equipment |

# Development Challenge

In Vietnam, the extremely fast development of the manufacturing sector occurred in the past 15 years has not been properly supported by regulatory tools to ensure product quality, reduction of hazardous chemicals in the manufacturing, and protection of the consumers, the workers, and the environment.

The structure of the manufacturing industry in Vietnam, although shifting towards large-scale organizations, is still affected by an excessive number of micro and small enterprises (around 120,000 SMEs in 2015). The presence of such large number of SMEs makes the enforcement of environmental regulation hard. Several small enterprises – especially in the field of waste recycling – are in the informal sector[[1]](#footnote-2), which means they are not registered and do not fulfill any environmental or quality standards.

Despite several progresses on the regulation front, there are still significant gaps in the current legislation concerning the threshold limit values for hazardous chemicals in products and in the manufacturing processes.

Limits for POPs have been established for the flue gas released by incinerators, steel industry, cement industry; however, there are no rules related to the limit of relevant POPs in consumer products.

Indeed, the use of POPs in the manufacturing industry has not been phased out and at the same time, not completely understood by the users themselves.

Worldwide, the production of several POPs (for instance the commercial penta and octa-BDE mixtures) has been discontinued since 2000. Others (like deca-BDEs, PFAs, HBCDD, SCCP) were still produced in large quantities until recently or are still manufactured and commercialized as additives in industrial processes, the manufacturing of paint, plastic components, polymers (like extruded and expanded polystyrene - EPS/XPS), foam and special purpose textiles and upholstery. Technical regulations, for instance, require that certain types of polyurethane foams used in mattresses, sofas, insulating materials, automotive seats, etc. fulfil specific low-flammability standards, which, at present, can only be achieved through their mixing or wrapping with flame retardants. Several specialized paints, like rubber-chlorinated, anti-rust, antifouling paints, makes wide use of SCCP in their formulation, in concentration up to 10%–12%. The use of PFOS as mist suppressant is considered as an “allowed use” under the Stockholm Convention, provided that they are used in a “closed-loop” process; however, currently all the hard-plating or chrome-plating processes in Vietnam are carried out as completely open processes and PFOS are used not only as mist suppressant, but also as etching chemicals in plastic plating.

The evidence that these chemicals are dangerous for the health and the environment has led to consumer concerns, with prioritization of initiatives aimed at chemical replacement, mandating intrinsic safety of materials and products, shifting towards natural fibers, etc.

Based on the Stockholm Convention risk profiles, around 18,000 tons of HBCDD was produced in 2010; around 1 million ton of chlorinated paraffins (inclusive of SCCP species not entirely classified as POPs) was produced in 2009. Based on research carried out by Oeko Institute for ACEA (the European Association of Car Manufacturers), up to 2017, deca-BDEs have been used in the manufacturing of specific car components (including cabling), in the 10%–21% concentration range.

Although in Vietnam, industrial POP chemicals like PBDEs, PFOS, HBCDD, SCCP, PFOAs were never produced, some of these substances (like deca-BDE and HBCDD) have been imported until 2016 and others (SCCP, PFOS) are still imported for use as additive in manufacturing processes, and are still present in materials and articles in use or at their end-of-life stage. Based on recent data gathered during project preparation, around 3000 tons/month of EPS/XPS is manufactured in Vietnam, with an amount of HBCDD in the order of 250–400 tons of HBCDD/yr.

Beside the safety aspects for consumer, workers, and the environment, the contamination by mercury and POPs is also currently hindering a full development of circular economy in Vietnam as the material potentially contaminated by POPs and mercury is unsafe for reuse or recycling into new products.

As recycled material (particularly plastic, as the amount of recycled yarn is minimal[[2]](#footnote-3)) is not checked for the presence of POPs, these substances may re-enter the cycle through the use of low-quality recycled material in the manufacturing sector. The plastic, which is not considered recyclable by the recycling industry, is often dumped in the environment, burnt in the open or used as secondary fuel, with the associated release of POPs and chlorinated and brominated dioxins and furans - PCDD/F.

**Consistency with National Priorities, including the Stockholm Convention**

The project is consistent with the mandate of MONRE, MOIT, and MOH. It should be noticed that VEPF is a branch of the MONRE and as such, it is a permanent institution with the main role to facilitate investment in the environmental field, through technical assistance and competitive loans on eligible environmental projects.

The Government of Vietnam (GOV) signed the Stockholm Convention on May 23, 2001 and ratified the Convention on July 22, 2002. After the first National Implementation Plan (NIP) submitted in 2007[[3]](#footnote-4), the reviewed and updated NIP, which addresses all the COP amendment including COP8, has been submitted to the Secretariat of the Stockholm Convention on September 26, 2018[[4]](#footnote-5).

The project should be considered as a fundamental and necessary step towards the implementation of activities aimed at addressing the key priorities identified by the NIP updated in 2018, as listed below.

* Priority 1: Developing, supplementing, and enhancing the effectiveness of regulations, policies, and institutions to meet the new requirements of the Stockholm Convention.
* Priority 7: Reduction of use of materials, articles containing POP-BDEs, HBCDD, and PFOS in Vietnam and selection of sustainable alternatives.
* Priority 8: Pollution control and treatment of materials and wastes containing POP-BDEs, PFOS, HBB, HBCDD, HCBD, PCP.
* Priority 10: Conduct education, communication, awareness raising, and enhancing the involvement of individuals, organizations and community on risk related to exposure of POPs and other hazardous chemicals.
* Priority 12: Sound management of chemicals, materials, equipment, and wastes related to POPs and mercury generated from the health-care sector.

The project is still relevant for continuing to address the priorities identified in the NIP completed in 2007 as NIP update in 2017, with specific reference to:

* Priority 1: Development and Finalization of Policies, Legislation, and Institutions for POP Management.
* Priority 8: Assessment, Study, Promotion, Assistance, and Management on Application of Best Available Techniques and Best Environmental Practices to Reduce and Finally Eliminate the Unintentional Production of POPs from Production and Living Activities.
* Priority 12: Strengthening Capacity for Managing and Controlling the Production, Import–Export, Use and Transport of Prohibited Chemicals including POPs in Vietnam.
* Priority 13: Study and Development of Emission and Technological Standards Associated with POPs in Line with Development and Integration Needs.
* Priority 15: Assessment of POPs Management in the Whole Country.

Furthermore, the project is fully in line with the national strategies and plans, such as the ones listed below.

1) National Strategy on Environment Protection (NSEP) to 2020, with Vision to 2030

2) Vietnam Sustainable Development Resolution to 2030

3) Vietnam Green Growth Strategy (VGGS)

4) National Action Plan for the Implementation of the 2030 Sustainable Development Agenda

5) National Action Plan on Sustainable Production and Consumption (2021–2030)

6) National Action Plan on Implementation of Stockholm Convention to 2025, Vision to 2030

7) The project – in its components and outcomes related to the phasing out of mercury products, the improvement of the regulation on mercury emissions, and the improvement of air pollution control systems to reduce mercury emissions – is obviously in line with the Minamata Convention on Mercury, which has been signed by the Government on October 11, 2013.

# Strategy

## 3.1 Description of the baseline situation and baseline associated projects

**3.1.1 Status of the current regulatory framework on POPs**

In Vietnam, a number of regulations concerning the phasing out of POPs, the management of POPs containing waste, and the maximum allowable concentration of POPs in soil and food chain have been established. However, regulations and technical guidelines for environmental levels of some new POPs such as PBDEs, HBCDD, HCBD, PFOS, PFOSF and HBB are still missing. Table 1 provides a commented summary of some recent regulations on chemicals in Vietnam, including their relevance to POPs.

Table 1: Regulations and technical guidelines on POPs

|  |  |  |
| --- | --- | --- |
| **No.** | **Name of regulations and technical guidelines** | **Main content** |
| **I** | **Field of environmental protection** |  |
| 1 | Law on Environmental Protection 2020 (will be enforced by January 1, 2022) | This defines terms of POPs and PTS (Persistent Toxic Substances) at Article 3.  Also, this Law regulates requirements of environmental protection on POPs and articles, products, goods, and equipment containing POPs (Article 69), as well as limits of POPs in articles, products, goods, and equipment (Article 97, 98). |
| 2 | Decision No. 184/2006/QD-TTg dated August 10, 2006 of the Prime Minister and its update, Decision No. 1598/2017/QD-TTg dated October 17, 2017 of the Prime Minister | Promulgates the National Implementation Plan (NIP) on POPs, of which implementation of activities aimed at addressing the key priorities on POPs. |
| 3 | Decision No. 16/2015/QD-TTg dated May 22, 2015 of the Prime Minister regulates withdrawal and treatment of disposed products | This makes provision to regulate the EOL collection of products like vehicles, tires, electronic devices, oil, batteries, for a more efficient recycling of materials.  This regulation may constitute a valuable resource for setting up an environmentally sound recycling scheme, with benefits also on the reduced release of POPs. The enforcement of this decision is, however, still low. |
| 4 | Circular No. 10/2021/TT-BTNMT dated June 30, 2021 of MONRE stipulates environmental monitoring techniques and management of information and data on environmental quality monitoring | This is a new circular combining and updating several previous circulars on environmental monitoring activities covering POPs also. It sets official environmental monitoring techniques and methods, including POPs in environmental components and materials, articles, products, goods, and equipment. It also contains provisions for monitoring techniques of new POPs such as PBDEs, PFOS, and HBCDD. |
| 5 | QCVN 15:2008/BTNMT - National technical regulation on the pesticide residues in the soils | Includes maximum allowable concentration of HCB, Aldrin, Endrin, DDT, Endosulfan, Dieldrin, Lindane (all were banned for use) in soil. |
| 6 | QCVN 07:2009/BTNMT - National technical regulation on hazardous waste thresholds | Regulates threshold of several organic hazardous parameters such as Aldrin, Endrin, PCB, and Chlordane. |
| 7 | QCVN 40:2011/BTNMT - National technical regulation on industrial wastewater | Regulates threshold of PCB on industrial wastewater. |
| 8 | QCVN 41:2011/BTNMT - National technical regulation on co-processing of hazardous waste in cement kiln | Regulates maximum allowable concentration of PCDD/F in emission and PCB in hazardous waste. |
| 9 | QCVN 02:2012/BTNMT - National technical regulation on solid health care waste incinerator | Regulates maximum allowable limits of PCDD/F in emission of solid health care waste incinerator. |
| 10 | QCVN 30:2012/BTNMT - National technical regulation on industrial waste incinerator | Regulates maximum allowable limits of total PCDD/F in emission of industrial waste incinerator. |
| 11 | QCVN 45:2012/BTNMT - National technique regulation on allowed limits of dioxin in soils | Regulates allowable values of PCDD/F in various types of soils. |
| 12 | QCVN 50:2013/BTNMT - National technical regulation on hazardous thresholds for sludges from water treatment process | Regulate threshold of Lindan, Endrin, etc. in sludges from water treatment process. |
| 13 | QCVN 54:2013/BTNMT - National technical regulation on remediation target values of persistent organic pesticides according to land use | This is a milestone in establishing standard rules for the remediation of sites contaminated by POP pesticides in Vietnam |
| 14 | QCVN 56:2013/BTNMT - National technical regulation on waste oil recycling | Regulates allowable values of PCB and Pentachlorobenzene in waste oil recycling process. |
| 15 | QCVN 43:2017/BTNMT - National technical regulation on sediment quality | Regulates threshold of PCB, DDT, Dieldrin, Endrin, Lindan, PCDD/F, etc. in sediment quality. |  |
| 16 | QCVN 51:2017/BTNMT - National technical regulation on emission for steel industry | Regulates allowable limits of total PCDD/F in air emission for steel industry. |  |
| 17 | Several relevant technical guidelines for POPs substances management | - Technical guidance on emission inventory and environmental protection for industrial production activities using POPs;  - Technical guidance on monitoring and assessing pollution and environmental risks due to the residues of some POPs used in agriculture;  - Guiding techniques for inventorying and assessing risks to the environment caused by unintentional emissions of POPs generating from industrial production activities;  - Technical guidance on inventory and safety management and risk control for Perfluorooctane sulfonic acid and salts and Perfluorooctane sulfonyl fluoride (PFOS). |
| **II** | **Field of chemicals management** |  |
| 18 | Law on Chemicals 2007 | This focuses on 3 groups of chemicals: conditional chemicals, restricted chemicals, and banned chemicals. POPs are not always classified in the right place, as POPs are sometimes put under the restricted list.  The Law does not stipulate safety requirements for any specific chemical group that are of global concerns such as POPs, mercury, persistent toxic substances (PTS), etc. |
| 19 | Decree No. 113/2017/ND-CP dated October 9, 2017 of the GoV regulates details and guides some articles implementation of Law on Chemicals 2007 | List of chemicals restricted from production and trading in the industrial sector (Annex II); List of chemicals declaration (Annex V).  Most of the POPs that belong to Annex A of the Stockholm Convention are listed under Annex II. In some cases, POPS are put in as POPs should be banned and not restricted. |
| 20 | Circular No. 30/2011/TT-BCT dated August 10, 2011 of Ministry of Industry and Trade regulates temporary allowable concentrations of some toxic chemicals in electric, electronic products | Provides temporary allowable concentrations of some toxic chemicals such as Polybrominated biphenyl (PBB) and Polybrominated diphenyl ethers (PBDE) in electric, electronic products. However, this is temporary so as to meet the international requirement of import/export. The Circular needs to be updated and supplemented with further substances following a scientific-based approach. |
| **III** | **Field of agriculture** |  |
| 21 | Circular No. 10/2020/TT-BNNPTNT dated September 9, 2020 of Ministry of Agriculture and Rural Development promulgates list of pesticides used and prohibited for use in Vietnam | This regulates a list of pesticides prohibited for use in Vietnam (Annex II), including several POPs such as Aldrin, Lindane, Chlordane, DDT, Dieldrin, Endosulfan, Endrin, Heptachlor, Pentachlorophenol, and Hexachlorobenzene. |
| **IV** | **Field of health** |  |
| 22 | Circular No. 11/2020/TT-BYT dated June 19, 2020 of Ministry of Health stipulates list of substances prohibited in insecticides and disinfectant chemicals in household and medical field | It regulates some POPs in the list of substances prohibited in insecticides and disinfectant chemicals in household and medical field (Annex 1) such as Aldrin, Chlordance, Chlordecone, DDT, Dieldrin, Mirex, Perflurooctan sulfonic acid and its salt, PCB, Toxaphene. |

**3.1.2 Current regulatory framework on mercury**

There is no specific regulation on mercury in Vietnam. Mercury containing waste is considered hazardous waste. However, no specific provision for the disposal of mercury waste has been established. This adds to the issues related to the management of hazardous waste in general.

Although theoretically beneficial for the environment, the legislations and guidance documents are not easily implementable in the absence of specific provisions for the management of mercury waste. Table 2 indicates some regulations on mercury in Vietnam.

Table 2: Regulations on mercury

|  |  |  |
| --- | --- | --- |
| **No.** | **Name of regulations** | **Main content** |
| 1 | Resolution No. 52/NQ-CP dated June 21, 2017 of the GoV on approving the Minamata Convention on mercury | Approving the Minamata Convention on mercury |
| 2 | QCVN 02:2020/BCT - National technical regulation on mercury content in fluorescent lamp | This regulates mercury content in various types of fluorescent lamps. |
| 3 | QCVN 06:2009/BTNMT - National technical regulation on hazardous substances in ambient air | This regulates maximum allowable concentration of hazardous substances in ambient air, including mercury (metal and compound) |
| 4 | QCVN 07:2009/BTNMT - National technical regulation on hazardous waste thresholds | Regulates threshold of mercury parameter in hazardous waste as an inorganic substance |
| 5 | QCVN 40:2011/BTNMT - National technical regulation on industrial wastewater | Regulates threshold of mercury on industrial wastewater |
| 6 | QCVN 41:2011/BTNMT - National technical regulation on co-processing of hazardous waste in cement kiln | Regulates maximum allowable concentration of mercury in emission |
| 7 | QCVN 02:2012/BTNMT - National technical regulation on solid health-care waste incinerator | Regulates maximum allowable limits of mercury in emission of solid health-care waste incinerator |
| 8 | QCVN 30:2012/BTNMT - National technical regulation on industrial waste incinerator | Regulates maximum allowable limits of mercury in emission of industrial waste incinerator |
| 9 | QCVN 44:2012/BTNMT - National technical regulation on off-shore water quality | Regulates limits of mercury in off-shore water quality |
| 10 | QCVN 50:2013/BTNMT - National technical regulation on hazardous thresholds for sludges from water treatment process | Regulate threshold of mercury in sludges from water treatment process |
| 11 | QCVN 08-MT:2015/BTNMT - National technical regulation on surface water quality | Regulates limits of mercury in surface water quality |
| 12 | QCVN 09-MT:2015/BTNMT - National technical regulation on ground water quality | Regulates limits of mercury in ground water quality |
| 13 | QCVN 10-MT:2015/BTNMT - National technical regulation on marine water quality | Regulates limits of mercury in off-shore marine water quality |
| 14 | QCVN 61-MT:2016/BTNMT - National technical regulation on domestic solid waste incinerator | Regulates limits of mercury in emission of domestic solid waste incinerator |

**3.1.3 Policies on environmental incentives in Vietnam**

On September 25, 2012, the Prime Minister signed Decision No. 1393/QD-TTg approving the National Strategy on Green Growth for the period 2011–2020 and a vision to 2050. Since then, a series of relevant concepts has emerged such as green economy, green finance, green tax, green credit, and green bonds.

As the most important capital channel for the economy, the Vietnam banking system plays a key role in the process of transforming the national economy into a development model towards green growth and carbon emission reduction. Accordingly, credit institutions actively participate in building a green financial system including: (1) green credit; (2) green bonds; (3) green stock; (4) green financial fund; and (5) green insurance, for mobilizing and encouraging social resources to invest in green manufacturing industries while reducing investments polluting the environment. Based on the survey, it has been found that by the end of June 2019, credit balance for green projects was about 317,600 billion VND, in which medium- and long-term loans accounted for 76% of green credit balance; short-term green loan interest rate is 5%–8%/year, medium- and long-term is 9%–12%/year. The proportion of green credit also increased strongly in the period from September 2016 to June 2020, from 1.5% to 4.1% of the total outstanding loans of the whole economy. Compared with the need of $30.6 billion for green finance to 2020, the proportion is already a significant source of domestic capital for green growth. Banks like VPBank, Sacombank, and BIDV in Vietnam have developed Green Loans to support several “green” activities for project, production, trading, and consumption to prevent climate change, reduce carbon emissions, and promote the transition to sustainable, environmentally friendly economy or to support activities capable of protecting natural resources and environment.

**3.1.4 Policies on Eco-labeling initiatives in Vietnam**

The market for Eco-labeled products in Vietnam is still limited. This situation arises from different reasons as listed below.

* Vietnamese consumers, including organizations, individuals, and businesses, do not prioritize the use of environmentally friendly products. Differently from the market related to the labelling for energy saving, which at least gives the consumer some financial return in terms of saving, eco-labelling offers basically safe and healthy products in a market where these values are not yet well understood. Therefore, eco-labeling does not represent a significant market advantage for the manufacturers.
* Up to now, the regulations on incentives and supports for environmentally friendly product investment and production as well as green procurement are still complicated, unclear, not specific and not properly enforced, so businesses have no motivation to apply Vietnam Green Label for products. For instance, the regulations on incentives and supports for environmentally friendly products under LEP 2014, Decree No. 19/2015/ND-CP refer mainly to secondary legal documents, which, in turn, only include general statements, or delegate state agencies to specifically regulate or decide on incentive and support rate. This is discouraging for any enterprise applying for incentives and supports related to Eco-Labeling. Most of the Vietnamese enterprises lack the knowledge needed to invest in environmental-friendly manufacture, including the manufacture of products meeting the requirements of Vietnamese Green Label. Although the green procurement and green public procurement policies are being formed by the authority, the market for environmentally friendly products is still limited.
* Since 2008, the MONRE has issued only 17 criteria for certain types of products: (1) Powder laundry detergent; (2) Fluorescent lamps; (3) Biodegradable plastic shopping bag; (4) Synthetic paper food packaging; (5) Ceramic building materials; (6) Accumulators; (7) Paper office; (8) Haircare products; (9) Solid soap; (10) Hand dishwashing detergent; (11) Architectural coating products; (12) Laptop; (13) Toner cartridge; (14) Printer; (15) Batteries; (16) Photocopier; and (17) LED lights. Then, the Circular No. 41/2013/TT-BTNMT dated December 02, 2013 of MONRE regulates order, procedures and certification of eco-labels for eco- friendly products. Vietnam Green Label Criteria and the Circular No. 41/2013/TT-BTNMT are the legal basis for enterprises and state agencies to consider, assess, and evaluate whether a product is environmentally friendly. Total 53 products have achieved the Green Label certification by MONRE, however these certifications are not renewal. If the criteria of Vietnam Green Label for a certain product or product group have not been issued, then this product or group will not have a chance to be labeled as Vietnam Green Label and to be recognized as environmentally friendly product.
* In 2020, LEP is renewed, and the “eco-label criteria” are replaced by the “green label criteria”, environmentally friendly products certification is built up as well as incentives mechanisms and green procurement promotion. This year (2021), the MONRE would set up and submit the drafts of the secondary legal system on processing, documents, and responsibility to certify eco-label products. Only after that, they would fulfill the gaps between eco-label regulations and reality, create the chance for developing the green procurement, and achieve the Green Growth Strategy implementation.

**3.1.5 Use of POPs in manufacturing industry in Vietnam**

**PFOS in steel plating and SCCP in the paint industry.** The use of PFOS and Short Chain Chlorinated Paraffins (SCCP) have been recently confirmed in Vietnam by industries participating in the project “Application of Green Chemistry in Vietnam to support green growth and reduction in the use and release of POPs/harmful chemicals”. Although the figures are still preliminary, evidence showed that the consumption of PFOS in a medium-sized hard-plating factory may be in the order of 0.6 tons/year, whilst the consumption of SCCP in the formulation of chlorinated paint reached 3.5 tons/year in a medium-sized paint manufacturing industry. Information on the number of industries operating in these two sectors is, however, not available, and there is a large heterogeneity of processes.

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| Figure 1: SCCP used in a paint factory in Vietnam | Figure 2: SCCP drums in a paint factory in Vietnam, ready to be used |

**SCCP import in Vietnam.** Based on information gathered through consultation with Vinachemia and the General Department of Vietnam Customs, out of 5687 documents sent to Vinachemia for registration, 242 items are classified as “chlorinated paraffine” with different names, but with same HS code (3824.9999) and the same CAS number (85535-84-8), which corresponds to chloro alkanes with C10-C13. The total imported volume of this chemical into Vietnam in 2019 has been relatively high, up to few thousand tons. Reviews and validation activities have been conducted to assess the SCCP usage by different sectors in the country.

**HBCDD**. It is likely that a significant amount of POPs is also used in the building sector, and more precisely in the manufacturing / import of Expanded or Extruded Polystyrene (EPS/XPS) as insulating materials. Based on a report from BCRC Asia, in 2018, there were around 110 companies manufacturing XPS and EPS panels/sheets in Vietnam. The average production capacities of the companies were around 100–200 tons/year. All XPS and EPS materials are imported from Taiwan. Currently, there are no alternatives to HBCDD in the manufacturing of EPS; therefore, it is likely that a large part of this material is treated with HBCDD.

Vietnam Polystyrene Company has a capacity of 40,000.00 TPA of Expanded Polystyrene. 50% of this alone meets the entire need of the Local Market while the rest is produced for the exports. So, if the content of HBCDD in XPS is 1% (on an average), the total use of HCBDD of this company is about 400 tons.

**PFOS/PFOAs.** The rate of use and import of PFOS and PFOAs in Vietnam is still unclear. Based on the NIP estimates, PFOS stockpiles are associated mostly in textile and upholstery (0.15–3.45 tons), paper and paperboard (0.2–4.8 tons), chemicals (for instance as varnish remover, 0.062 tons), and firefighting foam (10–15 tons). However, these estimates are uncertain, and it is not possible to track PFOS stockpile for their disposal, therefore, the only option is to monitor the presence of these chemicals near potential sources, and prevent their import and use. According to the 2017 NIP, there are nearly 150 establishments working in metal plating, of which about 30% are involved in chrome plating. In addition, there are many metal plating facilities at household scale, which have not been registered. These establishments are potential sources of PFOS emission, and a survey conducted in 2015 by Hanh Thi Duong et al[[5]](#footnote-6) has found the existence of PFOS in water bodies near industrial sites. The greatest concentrations of PFOA (53.5 ppt) and PFOS (40.2 ppt) were found in a surface water sample collected from a channel that receives wastewater treatment plant discharges. PFOS and PFHxS were found as the predominant PFAS substances in sediments.[[6]](#footnote-7)

PFOAs have been recently added to the Annex A of the Stockholm Convention, and no information is available at this time on the presence of this class of chemicals in articles or waste. Although information does exist on the level of contamination found in surface water, groundwater, soil, sediment, sludge, wastewater and even fish, in-depth data on the weight of each group of articles and chemicals containing PFOS, as well as data on concentrations of PFOS are needed.

Except for the import data for SCCP mentioned above, there are no consolidated and reliable estimates related to the presence of SCCP, HBCDD, and HCBD in Vietnam. Although listed in Annex A from 2013 to 2017, these substances have not been assessed in the 2017 NIP; however, Annex A has included a plan for their management and control.

**POP flame retardants in recycled plastic.** The NIP estimated that around 100,000 tons of PBDE-contaminated plastics is present in Vietnam in the EEE / WEEE sector, with a similar amount in the automotive and End-of-Life Vehicle (ELV) sector. Therefore, it should be assumed that recycling of materials coming from these sectors could represent a health and environmental issue in the absence of procedures for the verification of POP contamination. This estimation has not yet included the presence of deca-BDE, which was listed under Annex A of the Stockholm Convention only recently (see the Vietnam NIP updated in 2017).

The Vietnam plastics industry is still a relatively new sector compared to the other more traditional sectors; however, based on figures from the sector associations[[7]](#footnote-8) it has an annual estimated growth rate of 16%–18%, with around 2200 plastics companies delivering plastic components for sectors like power, electronics, telecommunication, communication and transportation, aquatic products, and agriculture.

Currently, the Vietnam plastic industry has significant manufacturing capacity for primary plastic such as PVC, PET, PP, and PS. Other primary plastic materials including PE, the most important material for packaging plastic, are imported.

In 2018, 8.3 million tons of plastic products was produced from 6.9 million tons of resins and around 1.4 million tons of imported recycled plastic scrap. PE is the most imported materials in value and weight (1.9 billion US$ and 1.5 million tons). The second was PP. Domestically sourced plastic materials for industrial use (including primary and recycled) meet only 20% of the demand.

By 2025, Vietnam can manufacture up to 4 million tons of virgin resin if all investment projects come into operation as planned. However, the demand in 2018 was already 5.9 million tons.

The large majority of the recycled plastic in Vietnam comes from informal recycling. Some well-known recycling villages are processing a huge amount of plastic, and in many cases, it is unlikely that this amount is entirely coming from the collection activities. For instance:

* The Minh Khai plastic recycling village (Hung Yen province) alone, near Ha Noi, processes 650–1000 tons per day of plastic waste. This amount is larger than the amount of plastic waste generated in the whole city of Ha Noi. Out of this amount, a percentage exceeding 20% of the processed waste is discarded as non-recyclable and burnt on site or just dumped in the environment.
* The recycling village of Khieu Truc processes daily around 174 tons of plastic waste, and discharges about 15–51 tons of plastic waste per day.

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| Figure 3: Family-run plastic recycling factory in Minh Khai village, Hung Yen province | Figure 4: Non-recyclable plastic abandoned in the Minh Khai village, Hung Yen Province |

Basically, there is no quality control in the processing of plastic from these informal centers. Due to lack of quality control, PBDEs and other pollutants contained in plastic remain in the cycle and they are improperly disposed in the environment.

Information on the use of POPs, especially PBDEs and SCCP, in the plastic sector in Vietnam is, however, scarce, and mostly based on indirect information (i.e., NIP estimates based on the UNEP guideline). Notably, a guideline for the inventory of SCCP is still missing, and indeed the use of indirect statistics to calculate the amount of PBDE in EOL products generates quite uncertain estimates. Evidence shows that deca-BDEs were officially imported in Vietnam until 2017, and that products treated with deca-BDEs were commercialized until recently.

**3.1.6 Inventory of mercury in Vietnam**

The existing legislation still does not envisage the phasing out of mercury products such as medical devices and fluorescent lamps. However, the Vietnamese Government has supported the use of LED lighting through two major projects – Vietnam Energy Efficient Public Lighting Project (VEEPL) and Vietnam National Energy Efficiency in Vietnam. LED technology was first introduced in traffic lights and the advertisement industry. Across Vietnam, incandescent bulbs, especially in streetlighting, are being replaced with LED bulbs. The LED market in Vietnam is expected to grow at a compound annual growth rate (CAGR) of 18.2% from 2016 to 2022, reaching $729 million by 2022, according to the report “Vietnam LEDs market - drivers, opportunities, trends & forecasts: 2015–2022”.

The lighting segment is expected to make a large contribution to economic growth due to the entry of large multi-national companies, decreasing LED prices, and industrial development of the Vietnamese market.

Many international players have already established factories in the country. Some of the more prominent players in the Vietnam LED market are Osram, New Light LED Technology Ltd, and Viribright.

Based on the above, it is evident that Vietnam is preparing the shift from CFL to LED, which will be further driven by the need to comply with the requirement of the Minamata Convention.

Although mercury devices in many hospitals have been gradually replaced by electronic devices, the use of mercury thermometers is still common. Mercury thermometers are available in pharmacies all around the country, and are perceived as being more accurate compared to electronic thermometers. The awareness on the danger associated with mercury thermometers in case they break is low; several hospital and clinics are not equipped with mercury spill kits, and in case of replacement of mercury devices, a strategy for the collection and safe disposal of these devices is missing.

The baseline risk of exposure to mercury at households or in hospitals due to the breaking of thermometers, which the project intends to reduce, is high. In Vietnam, according to information from Ms. Nguyen Thi Lien Huong, Vihema under the MOH, through a quick survey by UNDP in 2007 in 18 health facilities, the average rate of thermometers broken is 18.8% and the average amount of mercury released by broken thermometers is 1.7 g/bed/year. With the number of hospital beds nationwide at 196,311 (2007), the estimated total number of broken thermometers annually is 447,588 units and the total amount of mercury released from broken thermometers is 334 kg/year. In 2018, the number of hospital beds nationwide was 285,821 beds. If the ratio of thermometer breakage and mercury emissions remained constant, up to 485 kg of mercury could be released into the environment.

As of now, the regulation only establishes the maximum allowable amount of mercury in fluorescent lamps. The only mercury containing waste currently regulated are medical waste, under the Joint Circular No. 58/2015/TTLT-BYT-BTNMT dated December 31, 2015 of MOH and the MONRE regulates medical waste management, including mercury devices. The disposal of hazardous wastes, in general, and medical waste containing mercury, in particular, is carried out according to provisions of Circular No. 36/2015/TT-BTNMT dated June 30, 2015 of MONRE on hazardous waste management that defines clearly the responsibility of waste source owners for the collection, transport, and disposal of hazardous wastes. However, in practice, the classification, collection, storage, and treatment of medical waste containing mercury in health facilities is still inadequate due to lack of equipment and awareness by waste source owners. Moreover, the fact that there are no general regulations for the management of mercury containing waste has resulted in the persistence of improper segregation and disposal of such waste, with mercury entering the general environment and food chain. EOL fluorescent lamps and mercury thermometers are easily dumped in municipal landfills and illegal dumping sites. Based on the Vietnam Minamata Initial Assessment, around 21,000 fluorescent tube lights and 72,000,000 compact fluorescent lamps have been imported in Vietnam in 2016 and 2014, respectively. However, the market for fluorescent lamps is progressively shrinking, as the production and use of mercury containing lamps is being phased out worldwide. The expected release of a huge amount of EOL fluorescent lamps in the coming years has not yet been addressed by an accompanying prioritization of the development of proper waste management technologies to prevent release of mercury contained in discarded bulbs to the environment.

**3.1.7 Air pollution and the release in the atmosphere of mercury and U-POPs**

The air quality has been affected by human emission sources and natural meteorological conditions. The main sources causing an increase in PM2.5 are transportation, construction, industry, and other domestic activities in urban and rural areas. Besides, the transboundary air pollution has also affected the air quality in Vietnam.

From 2015 to 2020, the air pollution has been a hot issue in Vietnam and other ASEAN countries. More specifically, high levels of PM10 and PM2.5 in metropolitan areas like Hanoi and Ho Chi Minh City were recorded frequently. The level of air pollution increased from 2017 to 2019 and was highest in 2019. In 2020, dust and PM pollution levels were lower. Other pollutants like NO2, O3, CO, and SO2 were close to the limits established by the national technical regulation - QCVN 05:2013/BTNMT. In the rural and mountain areas, the air quality is still good.

LEP 2014 and newer LEP 2020 regulate management of air quality at Government and local levels. In 2021, the Government released a draft of the Decree that guides LEP 2020 with detailed regulations of targets, tasks, measures, and responsibility for air environmental protection at authority and stakeholder levels. Besides, the Prime Minister approved the National Action Plan on Air quality management up to 2020, vision 2025 under Decision No. 985a/QD-TTg dated June 01, 2016. Directive No. 03/CT-TTg dated January 18, 2021 continues to strengthen the control of air pollution. Then, the MONRE promulgated the Technical Guidance on building up the air quality management plan at the provincial level according to the LEP 2020. There are useful regulatory tools for increasing the air pollution control and improvement air quality management in Vietnam.

However, the legislation on mercury emissions in the atmosphere is incomplete. Emission limits for mercury emissions have been established for incinerators (QCVN 30:2012/BTNMT, QCVN 02:2012/BTNMT) and cement kilns burning waste (QCVN 41:2011/BTNMT). However, there are no specific rules to limit the emission of mercury from industrial sectors like power plant, cement kilns, incinerators, non-ferrous and ferrous steel works, etc. Based on the sampling and analysis work carried out under the GEF/UNDP POPs and Sound Harmful Chemicals Management Project (PHCM) project, it has been estimated that power plants release around 5077 kg Hg/year, waste incineration activities release 10,613.3 kg Hg/year, non-ferrous metal production 2691 kg Hg/year, and cement production 9402 kg Hg/year. In terms of emission intensity, recent sampling and analysis carried out under the UNDP/GEF project on chemical management[[8]](#footnote-9) at industrial facilities (power plants, incinerators, cement kiln, and non-ferrous metal plants) has shown that the mercury concentration at the stack exceeds international (EU) reference standards in incineration facilities, power plants, and non-ferrous metal plants. These data are of concern, and the implementation of better APCSs and control of fuel and raw material could have a significant impact in the reduction of mercury release in the environment. However, industry has no motivation to invest in such equipment until a proper regulation is in place and properly enforced.

Concerning U-POPs, based on the updated NIP inventory, which used statistical data of industrial sectors and UNEP toolkit emission factors, the waste incineration sector still accounts for the largest amount of release of PCDD/F in the environment (288 g/Teq in the air and 178 g/Teq in the waste). The metal industry contributes an overall amount of 48 g/Teq, and cement production with 18 g/Teq.

Recent sampling and analysis carried at the stack of waste incinerators and industrial plants in the Binh Duong province under the aforementioned UNDP/GEF project revealed that 8 out of 9 incineration plants have PCDD/F flue gas concentrations in the range of 1.23–40 times the regulatory limit of 0.6 ngTeq/m3 set by QCVN 30:2012/BTNMT; and metal production facilities have the PCDD/F level of 2.18–2.57 times higher than the regulatory limit of 0.6 ngTeq/Nm3 set by QCVN 51:2017/BTNMT. Considering that the regulatory limit is already 6 times higher than the recommended Stockholm Convention BAT value, these data are obviously worrisome.

*Cost of Air Pollution Control Systems (APCSs) in Vietnam.* An analysis of the cost of APCS system in Vietnam has been carried out in the course of project preparation (Annex 17). Based on that analysis, the investment cost, expressed as USD/Nm3/hr/h, is higher for small plants (over 12 USD/ Nm3/hr/h for a small incinerator in Vietnam), while it is relatively low for large plants (2.6 USD/ Nm3/hr/h for a large glass factory). Investment for the treatment of an overall amount of 1,000,000 Nm3/hr/h would cost in the order of 2.6– to 12 million USD in Vietnam, depending on the typology of plants to be retrofitted.

## 3.2. Baseline associated projects

**Green Labeling and Eco-Labeling in Vietnam.** MONRE has released Green Label criteria for 17 products in 2008. These products are (1) Powder laundry detergent; (2) Fluorescent lamps; (3) Biodegradable plastic shopping bag; (4) Synthetic paper food packaging; (5) Ceramic building materials; (6) Accumulators; (7) Paper office; (8) Haircare products; (9) Solid soap; (10) Hand dishwashing detergent; (11) Architectural coating products; (12) Laptop; (13) Toner cartridge; (14) Printer; (15) Batteries; (16) Photocopier; and (17) LED lights.

**Private initiatives on Eco-Labeling.** In Vietnam, according to QCVN 01:2017/BCT on contents of formaldehyde and certain aromatic amines derived from azo colorants in textile products (MOIT issued under Circular No. 21/2017/TT-BCT dated October 23, 2017), a number of eco-labels (according to the list in Appendix III of this QCVN) are being applied[[9]](#footnote-10)

**Existing Green Funds initiative from state or private banks in Vietnam.** A direct consultation with the key financial institutions has been carried out during the project preparation (Annex 16) , and has provided evidence that a not only VEPF, but several banks like BIDV, Sacombank, VPBank, have already in place green credit projects, although these do not envisage privileget loans. VEPF is currently revising the “List of environmental protection activities eligible for preferential support” under Annex III of Decree No. 19/2015/ND-CP dated 14/02/2015, so that more initiatives can be considered eligible for Green Loans.

**Action Plan on sustainable production and consumption.** The Prime Minister recently ratified a 2021–2030 National Action Plan on Sustainable Production and Consumption (under Decision 889/QD-TTg dated 24 June 2020), which is enforced and being implemented. The Prime Minister has assigned MONRE and MOIT to be main players to implement activities of promoting Eco-labeling and sustainable production, consumption, and exportation in the Plan. Therefore, activities in the Component of the project will provide support to MONRE and MOIT in meeting the needs in the Plan.

**Voluntary projects on the reduction of U-POP release in the air.** Despite air pollution being one of the main environmental concerns in Vietnam, there are no information related to industries going beyond their regulatory obligation to directly prevent release of pollutants in the air.

Some initiatives have, however, an indirect effect on the prevention of air pollution:

* In 2015, VEA and Clean Air Asia finalized a cooperation plan, which outlines priority activities to strengthen AQM in the country, the development of emission inventory guideline document.
* In 2015–2017, the co-benefit cooperation project between VEA and the Japan Ministry of Environment (MOEJ), researched for the methodology regarding the air emission inventory, pilot for thermal plants.
* In 2016, VEA and Clean Air Asia came together for the project Pollution Management and Environmental Health Partnership, which developed regional plans aimed at reaching national air quality standards and objectives, focusing initially in the larger Hanoi metropolitan area (Hanoi and its two satellite cities).
* Nestlé through its Plastic Neutrality Roadmap initiative has committed to remove from the environment an overall amount up to 25,000 tons of plastic waste by 2025. This includes the removal of non-recyclable plastic waste from plastic recycling village and their use as secondary material and fuel in cement kilns, with an estimate saving of CO2 and PCDD/F.
* At the governmental level, Can Tho has been “the first city in the country to join the continuously growing Breathe Life Network. This is a network of cities, regions, and countries demonstrating their commitment to bring air quality to safe levels by 2030 and collaborating on the clean air solutions that will help achieve the 2030 target. Can Tho, the fourth largest city in Vietnam and the largest city in the Mekong Delta, has a comprehensive Clean Air Action Plan (CAAP) in place, which prioritizes the monitoring of air quality and reduction of its major sources of emission, particularly transportation and industry.”[[10]](#footnote-11)

## 3.3 Project strategy and Theory of Change (TOC)

The project intends to address the intentional or secondary contamination of POPs (PBDEs, PFOS, PFOA, HBCDD, SCCP) in plastic, foam, paint, chrome plating, incineration, leather, and other related sectors, with the general objective to protect human health and the environment. More specifically, through training, technical assistance, awareness raising, and the implementation of a high-leverage financing mechanism, the project intends to:

* Promote sustainable production and consumption through application of Green Finance Framework and the use of eco-labeling on products.
* Implement Eco-labeling programs (including EPR schemes) aimed at ensuring that the environmental costs associated to the manufacturing of plastic, polymers, and other goods are fully internalized, with specific reference to the use and release of POPs and other chemical of concerns, and waste management.
* Promote environmentally friendly design where the technical properties of POPs or other chemical of concerns are not anymore needed as they are replaced by intrinsic properties of the products or the materials.
* Speed up the replacement of specific mercury-containing products.
* Support industrial initiatives aimed at the production of POPs and mercury-free products with a circular economy approach taking care of the consumption of chemicals and resources throughout the full production chain.
* Support the installation of modern Air Pollution Control Systems (APCSs) for the reduction of mercury and U-POP emissions.

The general logic of the project is to provide the relevant stakeholders and partners with the needed technical and financial support so that they can address the root causes and barriers, which are currently hindering the improvement of the baseline, to achieve the desired results and global environmental benefits. To do that, a number of assumptions have been adopted. Furthermore, the project should ensure the compliance with gender mainstreaming criteria at any stage.

**Stakeholders:** The project intends to work with the following stakeholders and partners[[11]](#footnote-12).

* The general public and consumers
* Entrepreneurs and workers in the manufacturing sector
* The government, and more specifically, MONRE (VEA, VEPF), MOIT, MOH and relevant agencies (General Department of Vietnam Customs - MOF, Police Department of Fire Prevention, Fighting and Rescue - MOPS)
* International donors and agencies, financial institutions, commercial banks
* NGOs
* Associations
* Recyclers.

**Baseline situation:** The baseline situation and the baseline projects – as already reported in detail in the chapter “Description of the baseline situation and baseline associated projects.” of this project document – can be summarized as follows:

* There is evidence that industrial POPs are still imported and used in Vietnam at a significant scale, although the awareness of enterprises and their willingness to disclose information about use of POPs in their processes is low.
* Medical devices using mercury (thermometers and sphygmomanometers) are still being used in hospitals and households; mercury-containing lamps are widespread and not disposed of properly when reaching their EOL.
* At the same time, most POPs are being regulated by the Government and their import and use will be restricted, although not completely. This could entail a significant risk for enterprises when the POPs and mercury regulation will be effectively enforced, as they are not ready to shift towards alternative processes or chemicals and could be forced to stop their production.
* Several industrial plants still release of mercury and PCDD/F in the atmosphere at a concentration higher than the internationally accepted BAT and BEP limits, while air pollution in Vietnam cities is severe.
* There are a number of Green Label criteria in Vietnam that assess and evaluate whether a product is environmentally friendly, but Eco-label regulations and Eco-labeled products are still limited.
* Green financing initiatives have been established by public (VEPF) and private financing institutions, however, none of them has explicitly supported the phasing out of POPs or mercury.

**Risk/Barriers:** The main barriers hindering the reduction of the use and release of POPs and mercury in the manufacturing and recycling sector in Vietnam are as listed below.

On the manufacturing side:

* Several micro and small enterprises do not have the technical and financial resources to implement environmentally safe measures in their manufacturing processes, including the selection of safe chemicals or the replacement of hazardous with less hazardous chemicals.
* Lack of adequate knowledge at both authority and industry levels on the content the industrial products that may contain POPs.
* Several mixtures used in industrial processes are often provided without the relevant documentation on chemical content.

At the regulatory level:

* The regulation concerning the threshold limits for new POPs in articles and products is still missing.
* Although significant gaps concerning the regulation of new POPs and mercury exist, the relevant legislation on chemical and waste is not properly enforced yet.
* There are no incentive or disincentive mechanisms in place to prevent the use and placing on the market of mercury containing articles like mercury thermometers or fluorescent lamps, which may be still easily purchased in shops.
* There are no quality standards (either voluntary or mandatory) or certification processes to promote the manufacturing of POP-free products (BFR-free plastic, HBCDD-free foams, SCCP-free paints, PFOS/CrVI-free plating, PFOS/PFOAS-free food containers or pans, etc.) with the result that some POP substances may still be contained in products.

On the side of the recycling of materials:

* The recycling procedures are mostly carried out through elementary processes in recycling villages, without any procedure to segregate contaminated plastic, resulting in the release of U-POPs in the environment and in the cross-contamination of plastic.
* There is a gap of communication between recyclers and manufacturers due to their different organizational features and due to lack of technical knowledge.
* There are no procedures or technologies in place to ensure that mercury containing waste materials are segregated and processed in an environmentally sound way.
* There is low awareness of the potential presence of POPs in some plastic, foam, paint, chrome plating, and polymer articles and the associated risk for the health and the environment.

**GEF and co-financing inputs:** Through the implementation of the project, inputs consisting in technical assistance, knowledge sharing, financial contribution (grants from the GEF and from Vietnamese institutions, in-kind co-financing), technology and equipment, legal assistance to update relevant regulations will be provided.

**Assumptions**. The project has been designed based on the following assumptions:

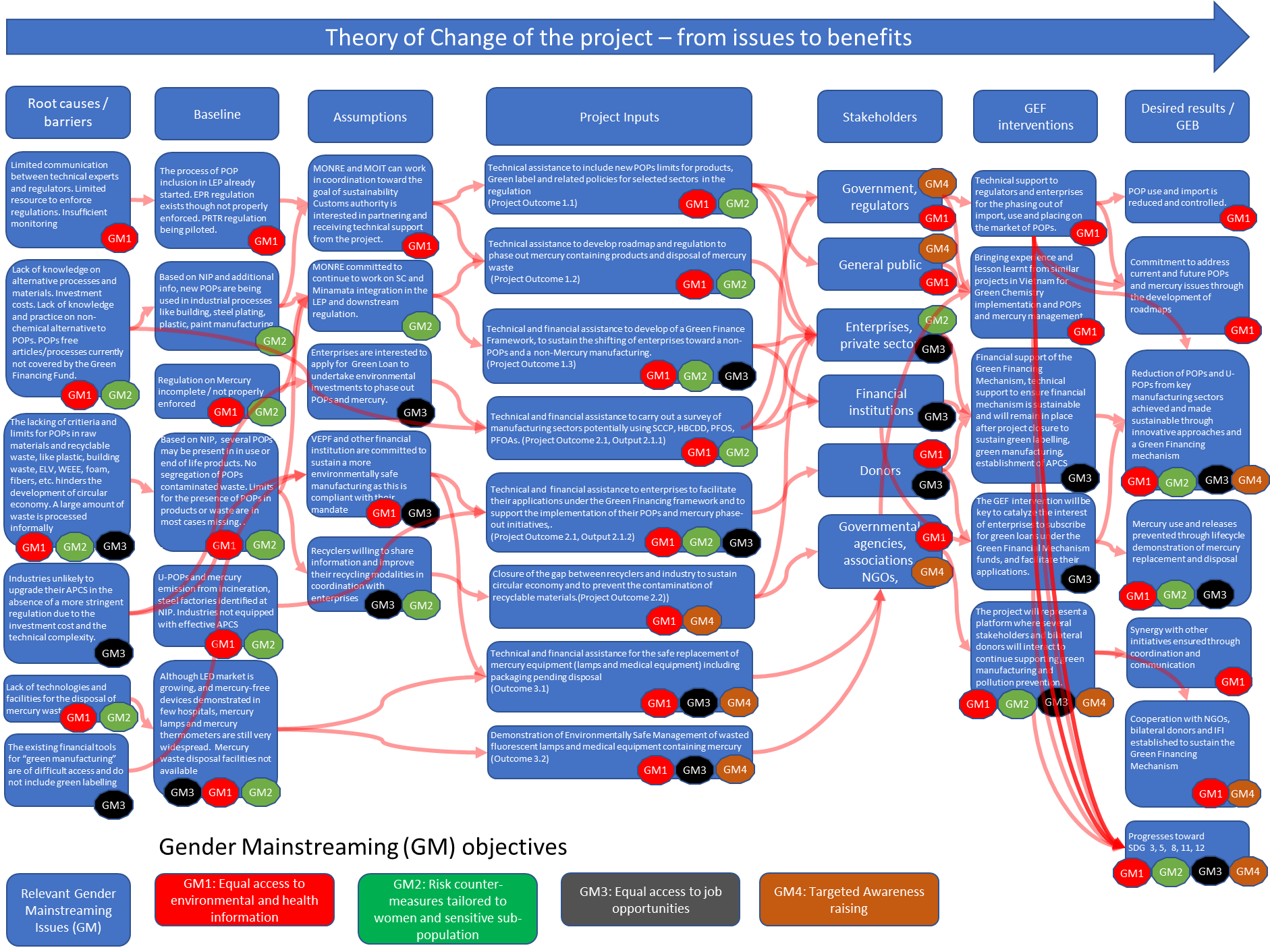
* As the project entails initiatives that will impact manufacturing enterprises, it is assumed that both MOIT and MONRE and their associated provincial departments can coordinate and work together so that the objectives related to the safeguarding of enterprises’ business and protection of the environment and human health are simultaneously achieved.
* MONRE has already proved its significant and continuous commitment towards the implementation of the Stockholm Convention and MOIT has undertaken a significant effort towards the implementation of the Minamata Convention. There is no doubt that these efforts will be continued during and beyond project implementation.
* It is assumed that the Green Financing Mechanism will be designed and implemented in such a way that enterprises find the conditions attractive enough to dismiss – through conventional or innovative approaches – the use of POPs in their manufacturing process, or install APCS to reduce their mercury or U-POP emissions.
* The APCS technology for reducing U-POPs and mercury from industrial emission is readily available. Therefore, it is assumed that there would be no technical difficulties in achieving this target.
* Vietnam is already familiar with eco-label schemes; therefore, it is assumed that lessons learnt from existing schemes could facilitate the creation of a new scheme, which includes POPs.

**Activities/Outputs:** The project intends to address the existing barriers and to integrate the existing baseline projects through the implementation of an alternative scenario, which is based on a number of activities as summarized below:

* Technical assistance to include new POP limits for articles and products, Eco-Label and related policies for selected sectors in the regulation; and to develop roadmap and regulation to phase out mercury containing products and ensure the safe disposal of mercury waste.
* Technical and financial assistance to carry out a survey of manufacturing sectors potentially using SCCP, HBCDD, PFOS, PFOAs, and PBDEs.
* Technical and financial assistance to develop of a Green Finance Framework, to sustain the shifting of enterprises towards a non-POP and non-mercury manufacturing.
* Technical and financial assistance for enterprises to facilitate their applications under the Green Financing framework and to support the implementation of their POP and mercury phase-out initiatives, as well as installing more efficient APCS devices, bringing experience and lessons learnt from similar projects in Vietnam for Green Chemistry implementation and POP and mercury management.
* Closure of the gap between recyclers and industry to sustain circular economy and to prevent the contamination of recyclable materials.
* Technical and financial assistance for the safe replacement of mercury equipment (lamps and medical equipment) including packaging pending disposal.
* Demonstration of environmentally safe management of defunct fluorescent lamps and medical equipment containing mercury.
* The project will represent a platform where several stakeholders and bilateral donors will interact to continue supporting green manufacturing and pollution prevention.

**Impact on climate change.** In terms of climate change effect, no activities / infrastructures will be built that could be impacted by climate change in the long term. The project will mainly work by promoting POP-free technologies, processes, and materials, and by improving the environmental performance of existing plants. The resilience of these plants to possible effect due to climate change will be one of the selection criteria. For instance, the project would not invest in area prone to flooding. Nevertheless, extreme weather conditions are more frequent in the last year and may potentially affect any place in Vietnam. Technology and materials developed under the project to replace POPs and minimize the use or generation of POPs will also be assessed in terms of potential increase or decrease of energy consumption and release of GHGs throughout their entire lifecycle.

Figure 5: Theory of Change.



# Results and Partnerships

**Project Objective**: *Protect human health, environment and promote sustainable production and consumption through the reduction of the use of POPs, new POPs and mercury and the release of POPs, U-POPs and mercury throughout the entire lifecycle in key industrial sectors supported by Eco-label system, Green Financing, and Procurement mechanisms*

## 4.1 Expected Results

The following text is a summary of the project outcomes, outputs, and activities, which will be undertaken in the course of project implementation to achieve the expected results.

The project is structured in three technical components and one management component, which includes project monitoring and evaluation and knowledge management.

***Component 1: Promote sustainable production - consumption in key sectors through Eco-labeling, Green Financing, and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors.***

The projects intend to support the detailed regulations of the Decree guiding LEP 2020: “List of environmental protection activities eligible for preferential support”, “List of environmental protection projects for green credit, green bonds”, with the intent to identify criteria for supporting POPs and mercury-free production processes and products, and to enhance the support for the establishment of APCSs. Eco-labeling criteria for alternatives to mercury products (lights, thermometers, sphygmomanometers) and POP-free alternative products for plastic, paint, foam, polymers, chrome plating, leather, incineration, and other sectors will be developed and proposed for inclusion under the list of eligible projects to be funded with the Green Financing Framework. Simultaneously, the project also supports to develop and revise the regulations/procedures for loan mechanism according to LEP 2020 and Decree guiding LEP 2020, including Green Finance Mechanism. Therefore, activities in Component 1 will provide support to MONRE and MOIT, MOH in meeting the needs in their Plans and operational documents as well as ensure compliance with gender mainstreaming criteria at any stage to properly cover the release reduction and phasing out of mercury and POPs in processes, products, and recycled materials.

This component will be based on the following outcomes and outputs:

**Outcome 1.1. Environmental regulation upgraded to include new POPs; Eco-label and related policies on POPs and mercury lifecycle management developed and implemented. (Note: original PIF’s Outcome 1.1 and 1.2 merged together to fulfil UNDP template requirements)**

Under this outcome, the country regulation relevant to new POPs will be updated, covering such aspects as restriction of the use and import of POPs not yet regulated (like PFOAs and HBCDD), quality standards in terms of concentration limits for additives and harmful chemicals, Eco-labeling criteria and certification systems for manufacturers, products, and recyclers. Quality standards and Eco-labeling criteria, including concentration of POPs brominated flame retardants and plasticizers, POPs precursors and other substances of concern in products and processes, will be developed.

This outcome will be achieved through the following outputs:

Output 1.1.1. Review, amendment of existing, or creation of new legislation related to POPs and new POPs in key sectors (e.g., plastic and polymers, metal plating, paint/solvents, etc.), including ensuring inclusion of provisions to support, *inter alia* exemption register of import for new POPs; concentration limits for POP (BFR, HBCDD, SCCP, etc.) and other POPs/PTS in products and waste; development of Eco-labeling schemes; new EPR schemes developed and enforcement of existing EPR schemes improved.

The criteria for the selection of sectors in the project are basically of two types. (1) Confirmed use of POPs in the process (either from the NIP, from ongoing projects, or from official sources of information) and (2) Economic relevance of the sector in Vietnam. On this basis, the tentative sectors to be considered are plastic (including building foam), polymers, metal plating, paint/solvents, and fire-fighting foam. Additional sectors may be considered at project implementation.

The existing legislation related to the intentional or unintentional use of POP chemicals manufacturing processes (plastic, polymers, hard-plating, paint) will be assessed. When necessary, specific restrictions will be proposed for the presence of specific chemicals in articles, products, like PBDEs, SCCP, HBCDD, PFOS and PFOAs, considering also that restrictions to the use of PBDEs and PFOS are already established under the REACH regulation and the ROHS directive in Europe, potentially affecting Vietnamese exporters of plastic and polymers articles and products.

Under this output, the national technical regulation on thresholds for the presence of SCCP, PBDEs, HCBD, PFOS, PFOAs in articles and products will be developed and proposed.

The current Eco-labelling criteria in place in Vietnam will be updated to include thresholds for POPs in the certification schemes, in line with existing international Ecolabelling schemes (like Oeko-tex 100).

Under this output, in addition of the development of new EPR schemes for specific product categories (for instance, plastic packaging), a better enforcement of the Decision No. 16/2015/QD-TTg, which regulates the collection after use of products like vehicles, tires, electronic devices, oil, and batteries, will be also supported. The following activities will be undertaken to achieve this output:

* Activity 1.1.1.1. Develop and implement the secondary law/regulations related to POPs and Eco-labeling scheme; review and develop the national technical regulation on thresholds for POPs and Eco-labeling criteria for articles and products.
* Activity 1.1.1.2. Develop and implement provision for exemption register of POPs as substance or mixtures to be revised to ensure elimination or restriction of POPs once exemption period expires.
* Activity 1.1.1.3. Develop technical guidance for assessment of Eco-labeling criteria including POP limits and EPR.
* Activity 1.1.1.4. Support and consult the manufacturers in terms of technology improvement to achieve the POPs limits and Eco-labeling criteria including EPR.
* Activity 1.1.1.5. Development of gender-specific sections related to risk management of POPs and mercury to be included in the relevant legal documents.

Output 1.1.2. Roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established.

This output intends to remove the barriers currently hindering the replacement of certain mercury products, and to enhance the legislation dealing with mercury in products, in waste, and release of mercury from industrial sources. It is based on analysis and upgrade of existing legislation, development of a roadmap for the phasing out of mercury in products, and development of regulation concerning the modality for mercury waste handling and disposal.

A roadmap towards the complete replacement of fluorescent lamp import and manufacture will be drafted. This will include the following aspects:

* Deadlines for the progressive replacement of the manufacturing of fluorescent lamps.
* Obligations for the manufacturers and intensive users.
* Investment plans for clean-up of mercury contaminated area and disposal of mercury stockpiles.
* Investment plans for the deployment of safe technologies for collection and recycling of fluorescent lamps.

The Minamata Convention has also banned the production, import, and export of blood pressure monitors and clinical thermometers. The use of mercury thermometers is common in Vietnam. The roadmap for the replacement of mercury devices will include the following steps.

* Plan for nationwide awareness raising on the use of non-mercury clinical devices, the risk posed by mercury, emergency response, and disposal.
* Develop an inventory of Vietnamese factories manufacturing mercury thermometers.
* Set deadlines for the progressive replacement of the mercury thermometers (manufacture, import, and use).
* Monitor the plan to verify mercury contamination and presence of stockpile of phased-out mercury devices in hospitals, and investment plans for mercury clean-up and disposal.
* Investment plan for the deployment of technologies for collection and recycling of mercury containing devices, with safe segregation and storage of mercury.

The following activities will be carried out under this output:

* Activity 1.1.2.1. Development of the sectorial plan for the replacement health-care mercury devices.
* Activity 1.1.2.2. Development of the sectorial plan for the replacement of mercury containing lamps.
* Activity 1.1.2.3. Development of the roadmap for the establishing of mercury disposal infrastructures.
* Activity 1.1.2.4. Develop a plan for cleaning mercury contaminated areas and unused mercury or mercury-containing equipment storages.
* Activity 1.1.2.5. Development of the gender mainstreaming section in the mercury roadmap, through consultation of female workers and gender experts.

Output 1.1.3. Review of the existing legislation related to mercury in products and mercury emission carried out, to help develop and/or strengthen, and ultimately enforce regulations concerning technical standards for mercury waste management.

Under this output, emission limits for the mercury emission from key industrial sources like cement kilns, municipal waste incinerators, power plants, non-ferrous metal, iron and steel works will be reassessed, developed, and proposed. Draft regulation for the complete phasing out of mercury thermometers and sphygmomanometers will be also developed and proposed.

The existing regulation on waste will be amended to include the following: (1) classification of mercury containing waste; (2) accepted collection and recycling methods for mercury containing waste, with safe segregation of mercury during collection / recycling operation; (3) accepted disposal and long-term storage methods for mercury stockpiles; (4) licensing aspect for waste disposal service providers.

The following activities will be undertaken under this output:

* Activity 1.1.3.1. Drafting of secondary law/regulations related to mercury concentration limits in articles and products.
* Activity 1.1.3.2. Update national technical regulations related to mercury concentration limits in environment and waste.

Activity 1.1.3.3. Update secondary law related to the treatment and disposal of waste to include provisions on mercury.

* Activity 1.1.3.4. Development of specific personal protective measures against mercury identified for women at workplace in the relevant legal documents, through consultation with women workers.

**Outcome 1.2. Development of a Green Finance Framework, to sustain the shifting of enterprises towards a non-POPs and a non-mercury manufacturing.**

This outcome will focus on the development of the fund's internal regulations on green credit, according to which non-POPs and mercury-free projects will be entitled to preferential loans with the lowest interest rate, long loan period.

Under this outcome, the policy proposal on green credit for commercial banks and the financial support mechanisms for a number of selected typical enterprises in accordance with the project's objectives will be studied and developed. Two outputs will allow to establish a green financing environment based on a Green Financing Framework and on Green Procurement initiatives:

Output 1.2.1. Green Finance framework designed, funded, and implemented to support private sector on getting incentives policy (e.g., tax, fee, credit fund, investment equity). Eco-label improved, funded, and properly communicated, building on national and other finance institutions (e.g., VEPF).

A Green Finance Framework will be developed to:

* Support the quality-controlled conversion of production lines, towards less chemical-intensive products and materials, replacement of POPs with non-POPs/non-hazardous chemicals, management of obsolete POPs and mercury stocks.
* Support the private sector to get policy incentives (e.g., tax, fee, credit fund, investment equity) in the production of eco-friendly products carrying Eco-label.
* Speed up the process of replacing mercury products with non-mercury products.
* Establish synergies with EPR schemes.
* Support industries on investments related to the design and instalment of APCSs, to prevent release of mercury and U-POPs.
* Support industries on environmentally sound design of articles and materials that are less chemical-intensive and POP-free.

The project will assist VEPF and other financial institutions implementing the green financing to raise the awareness of enterprises and to facilitate their access to competitive loan and grants, in order to support quality-controlled conversion of production lines, and to manage obsolete POPs and mercury stocks.

It is envisaged that one of the key modalities for the implementation of the Green Financing mechanism will be through the establishment of a Green Loan at a privileged interest rate, supported by VEPF and/or other financial entities. The role of the GEF project will be to provide technical support in the design and initial implementation of the projects submitted by enterprises under the Green Loan.

The following activities will be undertaken to achieve this output:

* Activity 1.2.1.1. Develop regulations on green finance framework to promote POP-free, mercury-free, and emission reduction projects and environmentally friendly production.
* Activity 1.2.1.2. Develop the eligibility criteria for POP-free, mercury-free, and emission reduction projects and environmentally friendly production.
* Activity 1.2.1.3. Develop the technical guidance for evaluation of POP-free, mercury-free, and emission reduction projects and environmentally friendly production.
* Activity 1.2.1.4. Technical support to the VEPF or other financial institution to process applications.
* Activity 1.2.1.5. Development of a specific section of the Green Financing dedicated to the facilitation of women entrepreneurship. Gender experts are consulted during the design, financing, and implementation of the Green Financial Framework.

Output 1.2.2. Green Procurement scheme designed and implemented at central and local levels.

Under this output, the following will be achieved:

* A procurement subsidization scheme will be created to support green procurement, application of mercury-free lighting, medical thermometers and sphygmomanometers, sound management of obsolete mercury containing devices, any related capacity building and awareness activities in medical facilities.
* Rules for green procurement to be applied by MONRE and DONRE and health-care facilities (MOH) will be established, to ensure that only POPs and mercury-free products and sustainable products are procured. This could be in connection with the Green Financing Framework to ensure a first channel of market access to enterprises who decided to operate under the specific sustainability rules required for GFF.
* The green procurement scheme for health-care facilities will be developed in coordination with the one already piloted under the GEF-funded UNDP-Health Care Without Harm (HCWH) project “Strengthening Sustainability in the Health Sector in Developing Countries”.

The following activities will be undertaken to achieve this output:

* Activity 1.2.2.1. Design and pilot the Green procurement scheme for POP-free products in at least one selected sector.
* Activity 1.2.2.2. Design and pilot the Green procurement guidelines for mercury-free products in health-care facilities.
* Activity 1.2.2.3. Develop the draft Green procurement guidelines for MOH and health-care facilities.
* Activity 1.2.2.4. Develop the draft Green procurement guidelines for MONRE and DONRE.
* Activity 1.2.2.5. Development of Green procurement criteria, which include facilitation for women entrepreneurs.

***Component 2: Lifecycle management of POPs and PTS containing products:***

Under this component, a better management of specific products and materials through all the stages of their lifecycle will be planned and demonstrated; gender mainstreaming with regard to outputs, through consultation with female workers and gender experts, with the purpose to reduce the amount of POPs and other chemicals of concern in materials and articles in use; ensure that recycled materials (plastic, fibers) are POP-free; improve and promote horizontal recycling to prevent contamination of EOL material; segregate and safely dispose of POP-contaminated waste.

**Outcome 2.1 Sustainable manufacture and design of plastic, polymers, paint, metal finishing, and other products improved to prevent the use of POPs and the release of POPs in the environment.**

Output 2.1.1. Analysis of the manufacturing sectors for which the use of new POPs has been recently confirmed but not yet included in the NIP carried out, in order to strengthen baseline and select optimum sectors and enterprises for pilot activity to improve POPs management in the value chain.

In coordination with the relevant industrial sector associations (plastic, polymer, paint, metal plating, etc.) and with the support of MONRE and relevant Ministries, a survey will be carried out along the full value chain manufacturing sectors, to identify processes and materials, which may be affected by the presence or release of POPs and other substances of concern, with specific focus on PBDEs, PFOS, PFOAs, HCBDD, SCCP. The purpose of this survey is to achieve consensus on the list of POPs and other substances of concern that may present particular risk for the environment and the human health, and reach an agreement on initiatives and certification schemes aimed at reducing these substances in all the steps of the manufacturing process. This activity will also build up on the results achieved in the course of implementation of the “Green Chemistry project”, with the more specific objective to develop a list of restricted substances, either in the processes or the final products, to be implemented through voluntary mechanisms (Eco-labeling) or as part of an amended regulation. As previous experiences demonstrated that questionnaire tools are not the most effective methods for carrying out these surveys, the top-down approach will be adopted for data and information gathering:

* *Top-down design of the survey.* The survey target will be initially designed with the assistance of MONRE and relevant agencies. Sharing of information related to the processes and size of the industries, consumption of resources, condition of the surrounding environment will be achieved at this stage.
* *Interviews and site-visits with manufacturers operating in the international market.* International suppliers already adhering to voluntary eco-labeling or certification schemes will be contacted. Interviews with suppliers exporting to Japan, USA or Europe will be carried out to understand the mechanisms for compliance and verification in all the manufacturing stage, and the list of restricted substances or chemical products included in the certification scheme.
* *Interviews and site visits to SMEs and manufacturers.* Interviews and site visits to SMEs and manufacturers operating at the national level (not operating directly at the international level) to verify the substances used in their manufacturing processes along the value chain, and to assess the mass balance of chemicals.

The basic objective of the survey will be to identify key products and sections of the value chain where the limitation on the use of POPs and other substances of concern may be more effective. For instance, identification of plastic components in products, which are still treated with flame retardants due to their function (electric cables or component near to a heat sources); industrial processes that can be optimized through a more efficient use of POPs, recycling of unused POPs streams, recovery of water sources, etc.; or bad substitutes of POPs (replacement of POPs with others with similar properties, like deca-BDE with Decabromodiphenyl ethane (DBDPE), or other POPs with substances already proposed for listing under the Stockholm Convention.

Table 5 lists a few industries or associations (potential partners of the project), which will be visited during project implementation.

Table 5: List of industries with potential use of POPs in the manufacturing process, to be visited during project implementation

|  |  |
| --- | --- |
| **Industrial sector** | **Company name and location** |
| Polystirene, XPS/EPS | Dong A Company: Lot 36, Tan Tao Industrial zone, Tan Tao road, Tan Tao A ward, Binh Tan district, Ho Chi Minh city |
| Panel Dingsen Vietnam, C1, Dai Dong Industrial zone, Bac Ninh; Tel: 0985263822; email; [rockway.panels.vn@gmail.com](mailto:rockway.panels.vn@gmail.com) |
| Bac Viet Plastic Company, Battalion 65, Trai Ban, Phu Thi, Gia Lam district, **Ha Noi.** Tel: 0984 482 345, 094 949 6568; chinhtran80@gmail.com; www.epsbacviet.com.vn |
| Loc Phat Company, 141 Xuan Hong road, 12 ward, Tan Binh district, **Ho Chi Minh city.** Tel (028) 39481664, Hotline: 0908 448 507; locphat008@yahoo.com; www.mopxoplocphat.bizz.vn; www.locphat.znn.vn |
| Thacopart company (technical plastic), Chu Lai Industrial zone, Quang Nam, Tel: 0901.806.310 |
| Nguyen Giang Plastic company, Bui Thi Xuan road, Tan Binh ward, Di An city, Binh Duong, Vietnam; Tel: (0274) 3772355, 0937.616.864 |
| Fire retardant additives for plastic | DAI A Plastic, Hanoi. Floor 16, Nam Cuong Building, Km 4, To Huu Street, La Khe Ward, Ha Dong District, Hanoi City, Tel: (+84) 243200 6580, (+84) 24.3200 6581, Hotline: (+84) 948881678 |
| DAI A Plastic, HCM. Floor 2, PLS Building - Y12 Hong Linh, Ward 15, District 10, City. Ho Chi Minh. Phone: (+84) 2836366648, Hotline: (+84) 988113881 |
| Paint manufacturing | Nishu paint (already included in the Green Chemistry Project) |
| Hanoi Synthetic Paint JSC, Cau Buou St., Thanh Liet Ward, Thanh Tri District, Hanoi, Vietnam. Tel. +84 24 36880086, 36883283, +84 24 36884284 |
| Nippont Paint in Hanoi/HCMC |
| AkzoNoble Company in HCMC |
| Information on SCCP as plasticizers and PFOS/PFOAS in leather and textile industry | LG Vina (Join Venture): production and trading plasticizers (DOP and others)  Add: Room 1101 Sun Wah Building, 115 Nguyen Hue Str., Dist 1, HCMC  Tel: (84-8) 38278070/(84-61) 3  Email: lgvina@lgvinachem.com |
| Mr. Le van Huynh, STAHL Company, 364, Tan Binh Dist. HCMC  Institute of Leather and Shoes of Vietnam (Hanoi)  Textile and Garment Group (Hanoi)  Website: [www.lgvinachem.com](http://www.lgvinachem.com) |

In addition to the above, a number of institutions with potential information on the use of POPs in the manufacturing processes will be again contacted during project implementation. These include Vinachemia, the Departments of Industry and Trade, the Departments of Construction Management Materials of MOC, the Leather and Shoes Research Institute, the Vietnam Fire and Rescue Police Department.

The following activities will be carried out to achieve this output:

* Activity 2.1.1.1. Analysis of sectors using HBCD (XPS/EPS foam…).
* Activity 2.1.1.2. Analysis of sectors using SCCP (paint, plastic, leather products…).
* Activity 2.1.1.3. Analysis of sectors using brominated flame retardants/PBDEs (plastic…).
* Activity 2.1.1.4. Analysis of sectors using PFOS and PFOAs (metal plating, fire-fighting activities…).
* Activity 2.1.1.5. Review of the existing literature on new POPs to identify gender-specific issues related to risk-management in the enterprises and specific risk for female resulting from the exposure of POPs. Sex-disaggregated data on accident at workplace in the manufacturing industry with focus to exposure to chemicals.

Output 2.1.2. Alternative product and production process design to prevent the use of hazardous chemicals additives in general and consequently the use of POPs (e.g., BFR/PBDEs, HBCDD, PFOS, PFOAs, SCCP) in key sectors demonstrated.

To obtain the desired fire-retardant behavior in articles and products, the use of hazardous chemicals can be prevented through chemical replacement (POPs with non-POPs, or hazardous with non-hazardous chemicals), through material replacement (flammable materials with non-flammable materials, i.e., organic fibers instead of poly-urethane foam), function re-design (thermal efficiency with less heat release etc.).

Similarly, non-hazardous nanoscale materials, C4 back-bone molecules instead of C8, fluorine-free substances are now available options to prevent the use of traditional water-repellent chemicals like PFOS, PFAs or PFOAs. Complete replacement of PFOS or PFOAs is, however, difficult as no substance reaches its water repellence effectiveness.

In the case of chrome plating, the replacement of PFOS as mist suppressant has been extensively studied and is now technically possible except in a few cases where the specific requirements of the products still require the hard-chrome plating process; however, in most of the cases, the hard-chrome plating has been successfully replaced by other safer processes like zinc-flake plating or zinc-alloy plating with Cr3+ passivation, which do not require the use of PFOS.

Under this output, the project will establish a network of knowledge in Vietnam to actively identify solutions aimed at:

* Identifying non-POP processes or non-chemical alternatives, which do not require the use of hazardous additives due to the intrinsic characteristic of the process.
* Using less-flammable materials that do not need to be mixed or wrapped with flame retardants. Examples: mattresses made with organic cotton fabric and cotton batting instead of memory foam or PUF, which are intrinsically compliant with safety standard.
* Replacing POP substances or POP precursors with harmless substances in the specific field of flame-retardant and water repellence; non-POP plasticizers.
* Reducing the amount of flame-retardants or water repellence chemicals through optimization of the coating and mixing processes so that the required standards are achieved with reduced use of substance.
* Identifying circular design or engineering solutions aimed at reducing the need for water repellence or heat resistance, by displacement of components in the product, better heat dispersion, better energy efficiency, micro- and nano-scale design of materials, etc.: for instance, the use of LED instead of fluorescent lamps or incandescent lamps generates less heat and requires less flame-retardant protection, etc.

A specific category of “Eco-labeled products” will be identified so that their design, manufacturing, and marketing are possible under the green-financing mechanism developed with VEPF (see output 1.2.3).

Based on the experience achieved on similar projects (The “Green Chemistry” project in Vietnam), the following activities will be undertaken to help those enterprises from undergoing loss of income or from missing market opportunities due to the replacement of POPs:

* The project will engage all stakeholders to identify win-win design or engineering solutions aimed at reducing the need for POPs whose uses will be restricted and finding affordable and effective alternatives to POPs that will be restricted or banned;
* The Project will also engage with the Government to see if additional support or conversion financing can be made available to such companies.

A roadmap for restriction of imports or restricting the use of certain POPs will be introduced through a clearly identified timeline, which is agreed by stakeholders.

The following activities will be undertaken to achieve this output:

* Activity 2.1.2.1. Assist enterprises to design intervention on alternative product design for application under the Green incentive mechanism.
* Activity 2.1.2.2. Select and support at least two enterprises under the Green incentive mechanism.
* Activity 2.1.2.3. Assess the results achieved under Output 2.1.2 by project-supported enterprises after implementation of the project in comparison to the baseline, for evaluating the replication potential.
* Activity 2.1.2.4. Consultation with female workers and gender experts from consumer associations in the design of substitute products.

Output 2.1.3 Design and implementation of modern Air Pollution Control Systems to prevent the release of mercury and U-POPs, suitable also for small enterprises, carried out.

The project will support industries willing to upgrade their APCSs in (1) Designing better APCS aimed at the reduction of the release of particulate matter, U-POPs, and mercury; (2) Preparation of the dossier for the submission of the projects under the Green Financing Framework; (3) Undertaking sampling and analysis of the concentration of U-POPs and mercury in flue gas before and after the implementation of the upgraded APCSs. The APCSs will be considered as eligible for the Green Financing Mechanism developed under Outcome 1.2, Output 2.1.3.1. Under this output, it is planned to achieve a reduction of emission of mercury and U-POPs in the environment through the establishment of APCS capable to reduce the concentration from an average 100 µg/Nm3 for mercury and 6.93 ngTeq/Nm3 for PCDD/F (based on the average analytical result for incinerators based on the surveys carried out under the Vietnam POPs and Sound Harmful Chemicals Management Project) to 10 µg/Nm3 for mercury and 0.1 ngTeq/Nm3 for PCDD/F for a number of plants representing a flue gas flow rate of up to 1,000,000 Nm3/h. This corresponds to an amount of 648 kg of mercury/year and 2 gTeq/year for PCDD/F. Based on the preliminary cost analysis carried out in Vietnam, the technology to reduce PCDD/F emission through a treatment chain based on bag filter, cooling and scrubber columns, activated carbon filter may cost in the range of 6.6–7.8 USD/Nm3/h; therefore, these equipment could not be completely funded through the GEF grant available under the project, but their procurement will be pipelined through application under the Green Incentive Mechanism. The following activities are envisaged.

* 2.1.3.1. Assist enterprises to design intervention for APCSs to prevent release of mercury and U-POPs.
* 2.1.3.2. Select and support at least two enterprises to apply emission control technologies/practices under the Green incentive mechanism.
* 2.1.3.3. Assess, in comparison with the baseline, the application and results achieved under Output 2.1.3, by project-supported enterprises, after implementation and in view of replication.

**Outcome 2.2 Closure of the gap between recyclers and industry to sustain circular economy and to prevent the contamination of recyclable materials.**

Under this outcome, efforts will be undertaken to improve circular economy model by involving selected recycling and manufacturing firms. That will envisage the following outputs:

Output 2.2.1 Interaction, technical exchange, and commercial agreement between recyclers and industry promoted to identify and implement solutions for the horizontal and safe recycling of materials and the segregation and safe disposal of POP-contaminated materials.

In Vietnam, recyclable waste is largely recycled in small villages, dumped in landfills or abandoned. Therefore, despite the abundance of some recyclable materials, manufacturers prefer to base their production on virgin materials because the quality of recycled materials does not fulfil their technical standards.

Under this output, opportunities for recyclers and manufacturers to exchange their needs and requirements will be, therefore, created. That will ensure, from one side, that recyclers can access a higher quality market, by taking part in take-back or collection schemes aimed at ensuring that the quality of the recycled material fulfils the needs of the industry; and manufacturers could have access to recyclable resources to replace virgin materials.

In terms of POP prevention, promoting up-cycling or horizontal recycling has the benefit of reducing the cross-contamination of recycled material; for instance, plastic treated with flame retardant will be used for the same purpose without the need to add additional flame retardants in the mixture. Up-cycling or horizontal recycling may also be achieved through the establishment of take-back schemes for specific products.

Take-back schemes would require cooperation among different manufacturing industries and should be integrated as part of their EPR obligation as described in output 2.1.3. The advantages of the take-back scheme are multiple: (a) they increase the life of specific products; (b) keep separate good quality material (non-contaminated plastic for instance) from contaminated materials; and (c) ensure that EOL material is not abandoned or improperly disposed of, with potential release of U-POPs.

Compliance with the rules related to environmental protection and worker rights will be a requirement for participation in the activities under this output, to prevent consolidation of existing situations of inequality, discrimination or unlawfulness from the opportunities generated by the project.. Grievance/redress mechanism will also serve to address any issue that could be raised by the target stakeholders.

This output will also include awareness-raising initiatives and training specifically tailored to inform and equip both formal and informal workers with risk management measures to be adopted when dealing with waste potentially contaminated by POPs, including the identification of waste material potentially contaminated by POPs, the proper use of PPE, norms related to the management of non-recyclable material to prevent open burning of waste that may generate U-POPs (dioxins).

Under this output, therefore, the following will be achieved:

* Ensuring effective technical exchange between recyclers and manufacturers, through the establishment of dedicated workshops where industry meet recyclers.
* Identification of most sustainable disposal options for the non-recyclable fraction of waste, including the definition of commercial agreements between industries and recyclers.
* Demonstration of material up-cycling through collection and reuse of excess material released by manufacturing enterprises, before this material enters the waste cycle.
* Design and piloting of a take-back scheme for specific products or product components (including plastic or polymers treated with flame retardants), which will entail: (1) characterization of the composition of the article component to be recycled; (2) dismantling instruction; (3) traceability of the product from the manufacturing stage to the consumer; (4) incentivized collection of the article/product at their end of life, by the manufacturer or an authorized recycler; (5) dismantling on the basis of the dismantling instruction and re-introduction of the recyclable material with horizontal recycling or up-cycling.

The following activities will be undertaken to achieve this output:

* Activity 2.2.1.1. Analysis of recycling sector and EOL materials, which may be affected by POP contamination, or which may generate U-POPs during the recycling stage, including at least building materials, packaging, plastic, steel.
* Activity 2.2.1.2. Identification and assessment of materials potentially containing POPs in the recycling sector and the current recycling modality.
* Activity 2.2.1.3. Analytical determination of POPs in secondary material and in the environment of recycling facilities.
* Activity 2.2.1.4. Enhancement of information exchange among recyclers and manufacturers to identify the measures for POP contamination reduction and environmentally safe secondary materials.
* Activity 2.2.1.5. Consultation of female workers and gender experts in the development of interactions, technical exchanges, and commercial agreements between recyclers and industry.

***Component 3: Mercury: lifecycle management of mercury-containing products***

Component 3 deals with the phasing out of mercury-containing products, by providing training, raising awareness, supporting the replacement of equipment containing mercury, and establishing technologies and facilities for the safe disposal of mercury-containing equipment, through consultation with women workers and gender experts or female trainee and trainer in training events. It will encompass one outcome, requiring the achievement of three outcomes.

* Develop risk management, technical guidance, and training materials for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury lamps and medical devices (Output 3.1.1 and 3.1.2);
* Identify requirements for the storage facilities in order to minimize the risk. For example: waste fluorescent lamps must be stored in securely enclosed and robust weatherproof containers to prevent rainwater entry and minimise escape of mercury vapour; lamps must be neatly packed into containers to minimise movement and risk of breakage during transportation; containers must be handled carefully during loading and unloading to minimise breakage; smashing or breaking of lamps into containers is unacceptable; lamp containers must be stored on an impermeable surface with sealed drainage at reception sites; containers should be appropriately sized for lamp type (Output 3.1.1. 3.1.2 and 3.1.3);
* The project will still identify the storage/interim disposal facility. That facility will abide to national legislation, and the guidelines of Stockholm Convention and Minamata Convention in terms of risk management for flooding and storage will be the selection criterion.

**Outcome 3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management**

In Vietnam, most mercury-containing products are already being replaced by non-mercury products: LED lights are replacing fluorescent lamps, composite amalgams are replacing mercury amalgams, and electronic devices are replacing mercury thermometers. There are, however, still a significant amount of mercury-containing products in use, and their replacement implies not only the finding of suitable alternatives (which are all available) but a sound and progressive phase-out plan accompanied by a proper waste management plan. Under this component, replacement of mercury products with non-mercury products will be speeded up and technology for the safe disposal and storage of mercury waste demonstrated. It will entail the achievements of three outputs.

Output 3.1.1. Risk management, technical guidance, and training materials developed for the sound management of mercury stockpiles, mercury waste and obsolete mercury-containing equipment, with specific reference to lamps and medical devices containing mercury.

Replacement of mercury products will be enhanced by proper awareness raising campaigns, aimed at illustrating the risk associated with mercury exposure, the benefits characteristics of mercury alternatives, and the need for proper management of mercury waste with segregation of mercury.

Under this output, the project will coordinate with the UNDP/ GEF5 project “Local Development and promotion of LED technologies for advanced general lighting” by providing collection and storage infrastructures for phased-out fluorescent lamps. The project will also support the collection and safe storage of any mercury and mercury amalgam stockpile left in fluorescent lamp manufacturing plants due to the reduced or interrupted manufacturing of fluorescent lamps. To do that, proper discussion with fluorescent lamp industry representatives will start in due time at the PPG stage.

The following activities will be undertaken:

* Activity 3.1.1.1. Review of the management status of mercury equipment, products, and waste in hospitals, clinics, and lamp producing companies.
* Activity 3.1.1.2. Technical guidance and training material developed for the use and calibration of non-mercury medical devices to sustain the replacement of mercury thermometers.
* Activity 3.1.1.3. Technical guidance and training material developed for the replacement of fluorescent lamps in offices.
* Activity 3.1.1.4. Development of specific materials of the risk management, technical guidance on personal protective measures for nurses and doctors at hospital facilities and the safe management of replaced mercury devices, including emergency response.

Output 3.1.2. Capacity and institutions are strengthened to eliminate the use of mercury-containing products (e.g., mercury lamps, thermometers, and cosmetics); road map and plan for using of mercury-free devices developed and implemented.

Although the replacement of mercury with non-mercury thermometers already started years ago in Vietnam, (UNDP project on Global Healthcare Waste), many hospitals and clinics still use mercury thermometers. Mercury thermometers are also commonly sold in pharmacies. In compliance with the WHO guideline on the replacement of mercury-containing devices[[12]](#footnote-13), the project will promote the replacement of mercury thermometers with non-mercury thermometers. Through awareness-raising campaigns specific for hospitals and small clinics, the project will (a) explain the reliability of non-mercury thermometers, (b) explain the procedures for using and calibrating non-mercury thermometers, (c) provide guidance for handling emergency situations when a mercury thermometer (manometer) is broken during using, and (d) explain the modalities to dispose of used mercury thermometers and the use of mercury spill kits, following the guidelines jointly developed by UNDP and WHO in other projects. That will also include risk management, technical guidance, and preparation and dissemination of training materials for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury medical devices. The project will, therefore, support select hospitals or other health-care facilities for the phasing out of mercury thermometers, awareness raising on the risk associated with mercury thermometers and the benefit of using non-mercury thermometers; training of trainers events for the use, calibration, and maintenance of different categories of non-mercury thermometers and spill kits, and for the safe collection and disposal of mercury-containing waste, covering at least 50 hospital facilities across Vietnam; replacement of at least 10,000 mercury thermometers with non-mercury thermometers, and other products (e.g., cosmetics) and safe storage and disposal of the phased-out mercury thermometers.

A potential list of hospitals identified in the course of project preparation to demonstrate the activity related to mercury thermometer is provided in Table 6.

Table 6: List of health-care facilities for the demonstration of mercury thermometer replacement

| **No** | **Name** | | **Type** | **Location** | **Note** |
| --- | --- | --- | --- | --- | --- |
| **Vietnamese** | **English** |
| **State hospitals in national/central level** | | | | | |
| 1 | Bệnh viện Bạch Mai | Bach Mai Hospital | General | Hanoi |  |
| 2 | Bệnh viện Châm cứu Trung ương | National Hospital of Acupuncture | Specialized |  |
| 3 | Bệnh viện Y học cổ truyền Trung ương | National Hospital of Traditional Medicine | Specialized |  |
| 4 | Bệnh viện E | E Hospital | General |  |
| 5 | Bệnh viện Hữu Nghị | Friendship Hospital | General |  |
| 6 | Bệnh viện K | K Hospital | Specialized |  |
| 7 | Bệnh viện Phổi Trung ương | National Lung Hospital | Specialized |  |
| 8 | Bệnh viện Mắt Trung ương | Central Eye Hospital | Specialized |  |
| 9 | Bệnh viện Nhi Trung ương | Vietnam National Children’s’ Hospital | Specialized |  |
| 10 | Bệnh viện Nội tiết Trung ương | National Hospital of Endocrinology | Specialized |  |
| 11 | Bệnh viện Phụ sản Trung ương | National Hospital of Obstetrics and Gynecology | Specialized |  |
| 12 | Bệnh viện Tai Mũi Họng Trung ương | Central Ear, Nose and Throat Hospital | Specialized |  |
| 13 | Bệnh viện Việt Đức | Viet Duc Hospital | General |  |
| 14 | Bệnh viện Nhiệt đới Trung ương | National Hospital for Tropical Diseases | Specialized |  |
| 15 | Bệnh viện Lão khoa Trung ương | National Geriatric Hospital | Specialized |  |
| 16 | Bệnh viện Da liễu Trung ương | National Hospital of Dermatology | Specialized |  |
|  | Bệnh viện Răng Hàm Mặt Trung ương Hà Nội | Hanoi Central Dental Hospital | Specialized |  |
| 17 | Bệnh viện 108 | Hospital 108 | General | Military Hospitals |
| 18 | Viện Y học cổ truyền Quân đội | Military Hospital of Traditional Medicine | Specialized |
| 19 | Bệnh viện Quân y 103 | Military Hospital 103 | General |
| 20 | Viện Bỏng quốc gia Lê Hữu Trác | Le Huu Trac National Burn Hospital | Specialized |
| 21 | Bệnh viện Chợ Rẫy | Cho Ray Hospital | General | Ho Chi Minh city |  |
| 22 | Bệnh viện Thống Nhất | Thong Nhat Hospital | General |  |
| 23 | Bệnh viện Răng Hàm Mặt Trung ương TP. Hồ Chí Minh | Central Dental Hospital (Ho Chi Minh city) | Specialized |  |
| 24 | Bệnh viện Quân y 175 | Military Hospital 175 | General |  |
| 25 | Bệnh viện Trung ương Huế | Hue Central Hospital | General | Thua Thien-Hue |  |
| 26 | Bệnh viện Đa khoa Trung ương Thái Nguyên | Thai Nguyen National Hospital | General | Thai Nguyen |  |
| 27 | Bệnh viện Đa khoa Trung Cần Thơ | Can Tho National Hospital | General | Can Tho |  |
| 28 | Bệnh viện Đa khoa Trung ương Quảng Nam | Quang Nam Central General Hospital | General | Quang Nam |  |
| 29 | Bệnh viện Việt Nam - Cuba Đồng Hới | Vietnam-Cuba Hospital Dong Hoi | General | Quang Binh |  |
| **State hospitals at provincial level** | | | | | |
| 30 | Bệnh viện Đống Đa | Dong Da Hospital | General | Hanoi |  |
| 31 | Bệnh viện Xanh-Pôn | Saint - Paul Hospital | General |  |
| 32 | Bệnh viện Việt Nam-Cu Ba | Vietnam-Cuba Hospital | General |  |
| **Private hospitals** | | | | | |
| 33 | Bệnh viện Thu Cúc | Thu Cuc Hospital | General | Hanoi |  |
| 34 | Bệnh viện Đa khoa quốc tế Vinmec Times City | Vinmec Times City International Hospital | General |  |
| 35 | Bệnh viện Đa khoa Trí Đức | Tri Duc General Hospital | General |  |

The project will strictly coordinate with the UNDP-HCWH ongoing project “Strengthening Sustainability in the Health Sector in Developing Countries” and will also undertake identification of offices and high-rise apartment buildings in need of support for replacing their fluorescent lamps with LED lamps. That will also include risk management, technical guidance, and training materials for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury-containing lamps. Another sector where the project will demonstrate the replacement of fluorescent lamps with LED lamps is in the cultivation of dragon fruit. One of the measures to increase the productivity and economic efficiency of dragon fruit trees is to extend the lighting time, shorten the growth cycle, and stimulate the off-season flowering of dragon fruit trees. Dragon fruit is a long-day plant; through the day/night cycle, it is necessary to accumulate a large enough amount of Pfr to flower, so artificial light with wavelengths of 660 nm and 730 nm is used to help dragon fruit trees accumulate enough Pfr during the night for early flowering. The project will, therefore, propose the replacement of at least 5000 compact/incandescent light bulbs with 5000 LED bulbs, and collection of incandescent and compact light bulbs. This will include the activities to strengthen the capacity of local people and officials in the collection and transportation of damaged light bulbs. The benefits of using LEDs, instead of incandescent and compact light bulbs, will also be brought to light.

The following activities will be carried out under this output:

* Activity 3.1.2.1. Training carried out in at least 100 health-care and clinic facilities through the implementation of at least 4 Training for Trainers event and supervision of the overall training.
* Activity 3.1.2.2. Training carried out in at least 200 offices and 50 building management boards and through the implementation of at least 4 Training for Trainers event and supervision of the overall training.
* Activity 3.1.2.3. Technical assistance for the replacement with non-mercury lights, and ensure environmentally sound collection of at least 20,000 fluorescent lamps in offices, high-rise apartment buildings and other intensive user of lamps in different areas (industrial facilities, urban area, agriculture, etc.).
* Activity 3.1.2.4. Technical assistance for the replacement of mercury medical devices with non-mercury devices and their use, and ensure environmentally sound collection at least 10,000 mercury medical devices (thermometers and sphygmomanometers) in health-care facilities.
* Activity 3.1.2.5. Participation of female trainers and trainees in training events related to the elimination of mercury-containing products.

Output 3.1.3. Technologies for the recycling of mercury-containing equipment with segregation and storage of mercury established

Under this output, procedures and technologies for the proper recycling of mercury-containing equipment, along with the safe segregation of mercury from the recyclable components, will be demonstrated. These will include vacuum shredders for the segregation of mercury along with the recycling of glass and metals; safe storage for mercury waste before treatment, and for segregated waste (including mercury) after treatment. A pilot equipment for the treatment of mercury waste will be established at one of the URENCO waste treatment facility. The entire procedure (removal of mercury from containing products, packaging, transportation, temporary storage, treatment with mercury segregation, and final disposal / recycling of the recyclable materials) will be demonstrated.

Requirements for the storage facilities will also be identified to minimize the risk. Waste fluorescent lamps will be packed individually and then in safe UN containers for transportation, appropriately sized for the lamp type; the lamps will be stored in securely enclosed and robust weatherproof containers to prevent rainwater entry and minimise escape of mercury vapour; containers will be handled carefully during loading and unloading to minimise breakage; smashing or breaking of lamps into containers will be avoided; lamp containers will be kept on an impermeable surface with sealed drainage at reception sites.

The release of mercury from on‐site and off‐site operations will be adequately managed and controlled by application of relevant Best Available Techniques (BATs) and Best Environmental Practices (BEPs), as well as observance of Environmental, Health, and Safety (EHS) guidelines.

The Terms of Reference (TOR) and Technical Specifications in the bidding documents will stress on this pre-condition and will be duly monitored during technology implementation.

The pre-conditions in the TOR will also include the following:

* The project will implement treatment and storage activities with formally established enterprises in big cities, or with state-owned waste managers who are licensed and have many years of experience in the handling of hazardous waste, including mercury treatment (for example, URENCO 10, 11 in the suburban areas of Hanoi and Ho Chi Minh City).
* Only companies (international and local) with strong track records of success will be invited.
* The project’s financial and technical support will be subject to fulfilling the specific eligibility criteria that meet international and national standards on waste handling and destruction to ensure practice of highest performance standards.
* Evaluation of flood risks when locating and designing the mercury treatment and storage facilities to minimise the risk of inundation, and ensure that mercury treatment and storage facilities are designed for more intense/ violent storms, heavier flooding, etc., and develop rigorous guidance for climate-related risk management for such facilities.
* The facilities will have to organise practice runs to deal with extreme flooding and storm accidents.
* Identification of requirements for the treatment and storage facilities; fulfilment of the guidelines of Stockholm Convention and Minamata Convention with respect to risk management in case of flooding and storage will be a mandatory requirement.
* Training program on the operational and safeguards exercise for the staff involved in the work on the treatment and storage area will be delivered in advance of starting the actual site work and updated throughout the period of work on the site as required. The scope of the training would cover overall hazardous waste and contaminated site management with specific emphasis on the packaging, physical handling procedures, inventory control and record keeping, site monitoring, emergency response and overall safeguards related to EHS practices and procedures. The curriculum for the training will use all available international guidance materials.

The following activities will be carried out to achieve this output:

*Activity 3.1.3.1 Existing technology / services for the safe recycling of mercury, glass, metals, and plastic from fluorescent lamps and mercury thermometers improved and demonstrated with the environmentally safe disposal of at least 20,000 fluorescent lamps and 10,000 mercury thermometers, including the trial tests.*

***Component 4: Knowledge management and M&E***

Component 4 of the project includes project monitoring and evaluation, and knowledge management. Under this component, the following outcomes will be carried out.

**Outcome 4.1. Project management team established, lesson learnt, and knowledge generated by the project properly shared and communicated.**

This outcome will be built on the following project outputs:

Output 4.1.1 Project inception and inception report carried out

The activities to be carried out under this output are part of the Monitoring and Evaluation plan

These include:

* Activity 4.1.1.1 Project inception workshop carried out
* Activity 4.1.1.2 Project inception report drafted and endorsed
* Activity 4.1.1.3 Detailed project workplan established

Output 4.1.2 Project steering committee and project management unit established

Under this output, the project management structure will be established, including the Gender Mainstreaming dedicated staff. The following activities will be carried out:

* Activity 4.1.2.1 Selection of project steering committee and recruitment of PMU carried out
* Activity 4.1.2.2 Establishing Gender Mainstreaming coordination and supervision

Output 4.1.3 Knowledge management system including project website established

The prompt circulation of information generated by the project will ensure that project beneficiaries will achieve the maximum benefit out of project activities, so that the project impact will be maximized. The project will generate the following information for the benefit of potential project “clients” and beneficiaries.

* 1. *Information on POP-free or less chemically intensive products and material.* Will be shared through training workshops and awareness-raising events, within a network of project partners (industries, certification bodies) and consumers through websites and apps with differentiated access.
  2. *Information on the eligibility to financing programs established under the program*: Will be shared during training events to be organized at VEPF, within the project website and the VEPF website, with differentiated access.
  3. *Information on mercury-free fluorescent lamps*: Will be shared during workshops and awareness-raising events on mercury, and within manufacturer product websites, the project website, mobile apps, and leaflets of retailer shops.
  4. *Information and guideline on mercury thermometers, and disposal procedures for mercury thermometers*: Will be shared during training for trainers events, and to be summarized on panels and posters to be placed at health-care facilities, and in health-care facility websites where available. To be communicated with patients when admitted to the hospitals.
  5. *Management of project documents and reports*. Under the project, a number of technical reports, progress reports, administration documents, evaluation reports, training materials, and scientific reports will be generated. Moreover, the project experts will have to have access to the same information generated by other projects. All the documentation generated by the project will be, therefore, categorized and uploaded in a website, with an access policy differentiated by users (administrators, project technical experts, project management units, general public, etc.). A blog under the website, or a project Facebook page, maintained by a dedicated person, will have the main function to collect information and initiatives generated by similar projects worldwide and to connect people from various projects, which will facilitate exchange of information.
  6. Findings, lessons, and strategies: Will be shared among the stakeholders of this project and the UNEP project on the development of a sustainable textile industry (GEF 10523). These two projects have quite different objectives – the UNEP project would be exclusively dealing with the textile sector, while the UNDP will cover a number of industrial sectors except textile. However, as both the projects will be implemented by the MONRE and MOIT, the exchange of information between the two projects, with specific reference to the development of new regulations and standards, and the assistance to enterprises concerning the access to environmental funds, will be greatly facilitated.
  7. This project will coordinate with the UNEP regional project on textiles via their respective KM components. UNDP and UNEP can share best practices and knowledge gained in the country to ensure a wider dissemination than any of the individual agencies would achieve.
  8. The project will also coordinate with the UNDP/GEF project “Reduction of POPs and UPOPs through integrated sound management of chemicals. GEF 10686”, which is currently (July 2021) in the preparation stage.

The following activities will be carried out under output 4.1.3:

* Activity 4.1.3.1 A Knowledge Management Unit established
* Activity 4.1.3.2. Project website built and maintained
* Activity 4.1.3.3. Project documentation (internet pages, movies, leaflets, technical documentation) developed, collated, and made available
* Activity 4.1.3.4 Awareness raising and communication events carried out

**Outcome 4.2 Project monitoring, evaluation and audit carried out in compliance with GEF, UNDP and GoV standards**

The project will be monitored and evaluated following UNDP and GEF standard procedures for project monitoring and evaluation. The monitoring will include the development of the GEF Tracking Tools at different stages of project implementation; the analysis of project achievements against the objectively verifiable indicators through the preparation of Project implementation reports (PIRs), Project annual workplans, Project reports, and technical reports. There will be two evaluation exercises, mid-term and terminal, which will be carried out by a team of independent evaluators (one international and one national). A project audit will be carried out annually. A project knowledge management system, where all the project documentation will be stored, will be implemented in a website with personalized access levels for the project partners. The detailed description of the activities to be carried out under this Component are reported in Section XI – Monitoring and Evaluation Plan.

The following Outputs and Activities will be therefore carried out under Outcome 4.2:

Output 4.2.1. Project and its activities monitored and evaluated on a periodic basis in line with GEF, UNDP, and government requirements.

* Activity 4.2.1.1 Project audit carried out as part of the project management activities
* Activity 4.2.1.2 Project mid-term and final review carried out
* Activity 4.2.1.3 Periodic project reports (PIR, QPR, AWP, QWP drafted) and issued

Output 4.2.2 Indicators established to facilitate successful project implementation and sound impact assessment.

Activity 4.2.2.1 Project indicators established as part of the project inception activities

* 1. Categorized and uploaded in a website, with an access policy differentiated by users (administrators, project technical experts, project management units, general public, etc.). A blog under the website, or a project Facebook page, maintained by a dedicated person, will have the main function to collect information and initiatives generated by similar projects worldwide and to connect people from the various projects for exchange of information.
  2. Findings, lessons, and strategies will be shared among the stakeholders of this project and the UNEP project on the development of a sustainable textile industry (GEF 10523). The two projects have quite different objectives (the UNEP project would be exclusively dealing with the textile sector, whilst the UNDP will cover a number of industrial sectors except textile). As both the projects will be implemented by MONRE and MOIT, the exchange of information between the two projects will be greatly facilitated, especially in the realms of development of new regulations and standards, and the assistance to enterprises with respect to access to environmental funds.
  3. This project will coordinate with the UNEP regional project on textiles via their respective KM components. UNDP and UNEP can share best practices and knowledge gained in the country to ensure a wider dissemination than any of the individual agencies would achieve.
  4. The project will also coordinate with the UNDP/GEF project “Reduction of POPs and UPOPs through integrated sound management of chemicals (GEF 10686)”, which is currently (July 2021) in the preparation stage.

The following activities will be carried out under Output 4.1.3:

* Activity 4.1.3.1. A Knowledge Management Unit established.
* Activity 4.1.3.2. Project website built and maintained.
* Activity 4.1.3.3. Project documentation (internet pages, movies, leaflets, technical documentation) continuous developed, collated, and made available.
* Activity 4.1.3.4. Awareness raising and communication events carried out.

## 4.2 Partnerships

The project will establish partnerships with the following institutions:

1. UNDP, which will be the GEF Implementing Agency (IA) responsible for the oversight of the project. During PPG, the project has established a proper coordination with UNDP Philippines and the Vietnam Environmental Department under MONRE to exchange views and experiences related to key topics, like the issue of POP importation, the implementation of Green Chemistry in relevant industrial sectors, the Green Financing Mechanism, etc. This will be further coordinated during the implementation phase.
2. MONRE, which is the focal point of the Stockholm Convention in Viet Nam, will be the national implementing partner. It will have a key role in the implementation of activities related to the development of a green financing mechanism, through VEPF, and amending and integrating the LEP with provisions related to the new industrial POPs.
3. MOIT and MOH, as cooperative agencies, will have a role in the implementation of the mercury roadmap and the implementation of Component 3 of this project. They will also support through technical assistance and enforcement of the restriction to import and export of POPs and POP-containing materials with the help of such institutions as General Department of Vietnam Customs - MOF, Police Department of Fire Prevention, Fighting and Rescue – MOPS.
4. Private sectors and health-care facilities. Partnership with enterprises and Vietnam Plastic Associations, Vietnam Erosion Metal Association, some health-care facilities has been actively sought in the course of project preparation and will continue during project implementation. Enterprises are the key actors that will ensure the shifting toward Green Chemistry implementation and POPs-free manufacturing, and will co-finance the associated intervention in their plants, including the installation of APCSs. From its side, the project will ensure funding of new equipment, technical assistance to implement Green Chemistry and POPs-free technologies and will facilitate their participation in the law-making process related to POPs. A trustful and open relationship with manufacturing enterprises is key to the success of this project.
5. Beside VEPF, a number of financial institutions like commercial banks such as Vietcombank, Sacombank, Techcombank, VP Bank, etc. and other funds will support the project in the establishment of the green financing loan. Additional financial institutions will be contacted in the course of project implementation.
6. Research institutions that are well connected with industries and the health-care sector will provide information and coordination in implementing relevant activities and provide technical/policy consultation as well as awareness raising and environmental risk assessment of piloted sites.
7. NGOs, especially women’s unions. A number of NGOs have already been involved in the implementation of previous GEF projects and a partnership with them has been discussed. Cooperation with NGOs is a key aspect to ensure the proper dissemination of project objectives and to guarantee that the voice of marginalized people is listened. These organizations will be actively involved in the implementation and monitoring of the project Gender Mainstreaming Plan.

## 4.3 Stakeholder engagement and South–South cooperation:

The detailed Stakeholder Engagement Plan is reported as Annex 8 of this project document. The project will work with the following category of stakeholders:

1. Governmental stakeholders. This group will include MONRE and regulators under MONRE in charge of project execution, whose role will be crucial for the implementation of specific project component and establishment of regulation and norms relevant to the restriction of the use and import of POPs in manufacturing processes. Other relevant ministries (MOIT, MOH, etc.) will also be part of this group.
2. Public and private financial institutions involved in supporting the Green Finance Framework.
3. Private entities with interest in the environmental certifications.
4. Enterprises and association of enterprises that may be affected by the restriction of the use and import of industrial POPs.
5. NGOs operating in the multiple dimensions of environment, communication, people mobilisation, gender mainstreaming.

## 4.4. Gender equality and Women’s Empowerment

It is fully acknowledged that particular attention ought to be given to the connections between gender concerns and chemicals. Namely, women, men and children differ in their physiological susceptibility to the effects of exposure to toxic chemicals. Furthermore, women are particularly influenced by the adverse impact of hazardous chemicals due to the structure of their reproductive systems. POPs, including PBDEs and U-POPs (dioxins), are particularly harmful due to their capacity to accumulate in body fats and in breast milk, thereby posing a significant risk for women and infants.

Usually, risk-based environmental standards and risk-based corrective actions, following a precautionary approach, are designed taking into account the highest risk for the most sensitive and exposed population categories; therefore environmental and toxicological limits take into account the specific issue of women and infants. Nevertheless, specific awareness-raising initiatives will be adopted to further reduce the risk of exposure of women and infants given their specific sensitivity.

A detailed gender analysis specific for the situation of Vietnam has been carried out during the project preparation stage. The main outcomes of the gender analysis are as listed below.

* There has been much progress on gender equality during the 10 years of implementation of the Law on Gender Equality. However, there are still many gender gaps for women, especially in terms of job opportunities and wages. According to the MOLISA report in 2020, female workers account for nearly half of the national labor force, but employment is not stable and unsustainable.
* According to the General Statistics Office, women account for 49.65% of the labor force, of which three sectors have a high concentration of female workers and are closely related to POPs and mercury such as Textile 75%; Leather and footwear 85%; Seafood processing 85%;)[[13]](#footnote-14).
* In 2018, the Gender Inequality Index scored 0.314, making Vietnam the 68th out of 189 countries[[14]](#footnote-15)
* Women are entering the workforce increasingly and largely in non-standard work sectors, including those related to POPs and mercury. For example, areas related to the production and use of plastics, polymers, metal plating, paint/solvents. The fact is that women participate in all these activities. However, the current regulations on pollution prevention and reduction are not strict. Policies on hazardous waste management in Vietnam are still incomplete.

Based on the above points, a gender action plan has been developed and fully integrated in the project budget and in the project result framework (see Annex 9). The Gender action plan includes:

* Availability of gender-specific training and awareness-raising initiatives.
* Initiatives and rules to ensure equal access to the job opportunities generated by the project.
* Equal access to the information generated by the project.
* Assessment of gender-specific chemical risk associated with POPs and PTS used and/or released by industrial activities and in consumer products.
* Specific health and safety rules for female employees in the waste collection and recycling industries.
* Gender mainstreaming in policy documents during review, amendment of existing, or creation of new legislation related to POPs and new POPs in key sectors

In addition to that, during project implementation, UN policies on equal opportunities will be considered with the purpose to ensure that the project supports women's capabilities and their enjoyment of rights, and women's equal and meaningful participation as actors, leaders and decision makers.

The budget for the GM action plan represents around 4.7% of the overall GEF grant budget for this project.

## 4.5 Risks

The risk analysis is summarized in Annex 6 of this project document (Atlas Risk Register), which covers the result of the Social and -Environmental Screening Procedure (Annex 5). Some key risk considerations are as follows:

* All Project activities are focused on reducing the impact and release of mercury and POPs, and on the environmentally sound management of mercury and POPs. Adequate mercury and POPs management in Vietnam is a necessary condition for the well-being of its people, especially for those whose daily activities require being exposed to these substances. This includes waste collectors and recyclers, and people working in formal recycling industries.
* By reducing the mercury and POPs release in waste processing and the environmentally sound destruction of mercury and POP-containing products in this project, health risks for workers, particularly the female workers and their children, will be reduced, leading to ameliorated health situation for them. Reducing the impact and release of mercury and POPs from the Project’s subject site will work as an important positive externality for women’s reproductive health as well.
* A careful assessment has been carried out to understand the risk associated with the collection and disposal of mercury lamps and thermometers. As far as the baseline risk is concerned, it should be stressed that the risk for health associated with the exposure to mercury released from the breaking of mercury thermometers or mercury lamps can be effectively prevented if the mercury is cleaned up immediately after spillage, and a direct exchange of air by opening windows is established[[15]](#footnote-16). Childhood exposures to elemental mercury often result from inappropriate handling or clean-up of spilled mercury[[16]](#footnote-17). Studies show that just one broken thermometer, if not properly cleaned up, can lead to indoor air mercury levels exceeding the EPA reference value and the ATSDR MRL, causing adverse health effects, particularly in children[[17]](#footnote-18). This measure, however, requires knowledge and awareness about the proper counter-measure to be adopted in case of breaking of a mercury fluorescent lamp or thermometer. If mercury equipment (lamps, thermometers) are replaced and collected when they are still unbroken, safely packed and brought to an authorized disposal facility, there is no risk for the operators.
* The baseline risk of exposure to mercury at households or in the hospital due to the breaking of thermometers, which the project intends to reduce, is very high. In Vietnam, according to information from Ms. Nguyen Thi Lien Huong, Director of the Department of Health Environment Management, Ministry of Health, through a quick survey by UNDP in 2007 in 18 health facilities, the average rate of thermometers broken is 18.8% and the average amount of mercury released by broken thermometers is 1.7 g/bed/year. With 196,311 hospital beds nationwide (2007), the estimated number of broken thermometers annually is 447,588 units and the total amount of mercury released from broken thermometers is 334 kg/year. In 2018, the number of hospital beds nationwide was 285,821 beds. If the ratio of thermometer breakage and mercury emissions remained constant, up to 485 kg of mercury could be released into the environment.
* On the other side, the risk for the general environment associated with the release of mercury from accidental breakage of mercury lamps is smaller in comparison with the risk posed by the release of mercury (in its different chemical forms) released by industrial plants.
* In Vietnam, based on the inventory performed in the course of the GEF/UNDP POPs and Sound Harmful Chemicals Management Project (PHCM), it has been estimated that around 28.7 tons of mercury is released yearly in the environment from combustion processes in main industrial sectors like electricity generation, cement kilns, incineration, and non-ferrous and ferrous steel works.
* The project, therefore, will reduce the risk for health and environment associated with mercury in the following ways.
  + By directly reducing the level of indoor exposure of the general population to mercury by undertaking the replacement of 20,000 mercury lamps and 10,000 mercury thermometers, supported by a persuasive awareness-raising campaign (Component 3). This will directly reduce the risk of indoor exposure to high level of mercury for at least 60,000 people, assuming that at least 2 people may be exposed to the risk posed by a single device.
  + By supporting the establishment of procedures or equipment for the reduction of mercury emission from industrial facilities (Component 2), the estimated reduction of mercury from the stack of industrial facilities stands at 648 kg/year.
  + By proper disposal of mercury-containing equipment (10,000 mercury thermometers and 20,000 fluorescent lamps, with an overall maximum content of mercury estimated at around 21 kg with either segregation and recovery of mercury from the non-hazardous waste, or through long-term immobilisation as per international standards, and in compliance with the national rules.
* It should be considered that the amount of mercury segregated from mercury equipment is very small, and the risk for hazardous waste operators is limited due to both the small amount of mercury processed, and the fact that hazardous waste operators are very aware and knowledgeable on how mercury containing equipment must be handled.
* The above is the rationale that led to the consideration that the outputs related to the operation related to mercury reduction should be considered, in the worst case, as a moderate-risk activity.
* There is indeed a residual risk of loss of income to SMEs due to banning of imports or restricting the use of certain chemicals. As restrictions on the use and import of POP chemicals not yet regulated (like PFOS and SCCP) will be enacted, some SMEs may experience challenges in finding affordable alternatives and hence find their income/revenue affected.The project intends to minimize this risk. It should be, however, considered that this is not a project risk, but indeed a baseline risk as POPs will be banned in any case as a consequence of the enforcement of the Stockholm Convention and Vietnam Prime Minister’s Decision No. 1598/QD-TTg dated October 17, 2017 on the Promulgation of the National Plan for the Implementation of the Stockholm Convention on POPs to 2025, with a Vision to 2030. The project intends to mitigate the financial impact of the Convention implementation, resulting in a reduced risk for the enterprises compared to the baseline.
* Moreover, experience shows that such initial disruption and revenue loss tends to be of a temporary nature, in particular, where there is proactive support to such SMEs, as foreseen in our mitigation and management measures below. Over the medium term, we would expect such SMEs to in fact strengthen their competitive positioning, with new green products replacing the banned chemicals.
* In the pre-SESP developed at the PIF stage, one of the risks considered as high was the risk of participation of minors in hazardous activities, and more specifically that persons below 18 years of age in the recycling industry may be engaged in hazardous work, which is classified as “worst forms of child labour”. In addition, persons younger than 15 years old may also be employed or allowed to work in these sectors. However, except awareness raising (which indeed will be also aimed at preventing child employment), the project will not conduct any direct activity with informal operators where the risk of child employment is high. Only formally established enterprises (public or private) abiding worker rights can partner with the project. Therefore, there is no chance that minors are involved in project activities. The project will be implemented in manufacturing and formally established enterprises, which are not involving minors in any activity by law. Eligibility criteria for the application to the Green Financing mechanism will further reinforce this pre-condition. In Vietnam, the Law on Labor, the Children's Law, and all documents guiding the implementation clearly stipulate the employment of workers under the age of 18 as well as child labor under the age of 15. Accordingly, it is forbidden to use workers under 18 and child labor in all activities of producing, using or transporting chemicals. For this reason, this event has to be considered extremely unlikely, and the risk has been considered moderate only for a principle of caution.
* Vietnam is a country prone to climate change effects, sea level rise, and extreme weather events. The country has issued and implemented a National Strategy and National Action Plan to Respond to Climate Change. Mercury treatment and storage facilities are mostly located in the suburban areas of big cities such as Hanoi, Ho Chi Minh city, and delta areas far from the sea, where the impact of climate change, sea level rise and other extreme weather events are not as severe as in other parts of the country and many climate change adaptation solutions have been implemented. This will help reduce the risk of flooding of mercury treatment and storage facilities. As mitigation measures, flood risks will be considered when locating and designing the mercury treatment and storage facilities to minimize the risk of inundation; new mercury treatment and storage facilities will be designed to withstand the most intense and violent storms, heavier flooding, etc., and rigorous guidance for climate-related risk management for such facilities will be developed. Emergency drills to be ready with extreme flooding and storm incidents will also be undertaken by the project.

## 4.6. Innovativeness, Sustainability and Potential for Scaling Up

**Innovativeness.** The project intends to pursue an innovative approach for the replacement of POPs in the relevant manufacturing industrial sector, based not only on just chemical replacement, but also considering alternative designs and processes. An example of innovativeness has been already demonstrated in the Green Chemistry project (Application of Green Chemistry in Vietnam to Support Green Growth and Reduction in the Use and Release of POPs/Harmful Chemicals, GEF 9379) where two plants have actually changed their process to replace POPs with non-POPs. In the paint sector, whilst in one case the replacement of POPs (SCCP) with non-POPs (MCCP) followed quite a classical chemical replacement modality, in another case a completely new paint product, which is POP- and solvent-free, has been developed. In the case of the steel-plating industry, two completely new lines free of POP (PFOS) and Cr6+ have been developed to replace the old process based on PFOS, out of which one is (Zinc flake coating) is a zero-wastewater process. This approach will promote a mindset shifting from conventional, chemical-based solutions to achieve desired properties of materials, to a more holistic approach based on a smarter selection of materials and design, to reduce the need for special properties and hence special chemicals.

In addition to that, the project will intend to demonstrate additional technologies for the replacement of HBCDD in the XPS/EPS foam, the replacement of PFOS/PFOAs and SCCP in other industrial sectors, as well as the implementation of APCSs for medium-scale plants, which, although consolidated technologies, may be considered quite innovative technologies in Vietnam.

On the side of mercury, the project intends to demonstrate small-scale, low-cost mercury waste vacuum shredders to be used for extracting mercury from specific waste (lamps, thermometers) and ensure the recycling of material like glass, plastic, and metal after segregation.

On the side of segregation of PBDE-contaminated plastic to ensure that recycled plastic will be free of POP BFRs, a mix of procedures, ranging from the early identification of the origin of the plastic waste, preliminary classification based on the density, XRF testing will be developed for ensuring that plastic waste contaminated by BFR are segregated without affecting the recycling cost too much. All the above processes are highly innovative, although already available commercially, and have a high potential to be scaled up due to the fact that they can either generate value (through a better quality of the recycled material) or minimize the cost for environmental treatment.

Beside the technological aspects, the project intends to pursue innovative strategies in at least additional two sectors: the Eco-labeling scheme and the financial incentive mechanism.

With respect to Eco-labeling, the project will contribute by bringing in the approach of green-labeling of products and materials (Oeko-Tex, brand-specific, Vietnam Ecolabeling) to Vietnam. Although Eco-labeling is not new, it is still an innovative approach in Viet Nam, which will need more diffusion and implementation. To this end, and with the aim to prevent the use of POPs in plastic, foam, and polymer articles, the project will conduct a survey to verify the list of chemicals used by plastic and polymer industry (in addition to POPs) on which there may be agreement for restriction or limitation in accordance with existing green-labeling schemes.

The financing scheme envisaged under the project may be considered as a blend between the classical financial scheme and innovation. The innovation here consists mainly in the fact that the eligibility criteria to access the competitive loan include compliance with the Stockholm Convention and the project objectives. The challenge will be to identify criteria, which at the same time could represent a reduced solvability risk (through the reduced liability achieved through the elimination of hazardous chemicals from the process) and a benefit for the enterprises – through reduced interest rates, facilitated applications, or reduce warranty requirements.

**Sustainability.**The Eco-labeling scheme and the green financing mechanism will be designed and implemented to be sustained beyond the project timeframe. To be more specific, while a limited demonstration of POPs replacement will be undertaken within project timeframe, the Eco-labeling, green procurement, and green financing mechanism are all initiatives that will be launched within project duration with the purpose to be continued as routine environmental tools after the project. In other words, Eco-labeling, green procurement, and green financing should not be intended as project intervention but rather as systemic change.

**Potential for scaling up.** There is not only potential, but indeed need for the scaling up of project activities like the demonstration of POPs elimination from the manufacturing process, the extension of Eco-labeling to more products, the instalment of APCS for the abatement of U-POPs and mercury. The establishment of a financing mechanism supported by VEPF and possibly other institutions that will join during the project implementation has exactly the purpose to ensure the scaling up of project initiatives, which cannot be ensured only with the limited grant provided by the project. Even the knowledge management of the project will be designed to ensure the future scaling up of project initiatives, as it will envisage shared network of knowledge among manufacturers, industries, and designers on the design and manufacturing criteria, which may be intrinsically less chemical-intensive, for specific categories of products, product components, and materials.

# Project Results Framework

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| **This project will contribute to the following Sustainable Development Goal (s):** SDG 3(Good Health and Wellbeing); SDG5 (Gender Equality); SDG9 (Industry, Innovation and Infrastructure); SDG12 (Responsible Production and Consumption); SDG13 (Climate Action) | | | | |
| This project will contribute to the following country outcome (UNDAF/CPD, RPD, GPD): One Plan Focus Area 2: ensuring climate resilience and environmental sustainability  Outcome 2.2: Sustainable management of natural resources and the environment. By 2021, Viet Nam has enhanced sustainable management of natural capital, biodiversity and ecosystem services and improved the quality of the environment, while contributing to the implementation of multilateral environmental agreements. | | | | |
|  | Objective and Outcome Indicators  (no more than a total of 21 indicators) | Baseline[[18]](#footnote-19) | Mid-term Target[[19]](#footnote-20) | End of Project Target |
| **Project Objective:**  The objective of the project is to protect human health, environment and promote sustainable production and consumption through the reduction of the use of POPs, new POPs and mercury and the release of POPs, U-POPs and mercury throughout the entire lifecycle in key industrial sectors supported by Ecolabel system, Green Financing and Procurement mechanisms | **Mandatory** Indicator 1 (GEF Core Indicator 11): # direct project beneficiaries disaggregated by gender (individual people)  Number of people (F/M) participating in training and awareness raising activities, benefitting from green financial incentives, or from project-related job opportunities. Target: 2,000/1,500 | 0 | 600/400 | 2,000/1,500 |
| **Mandatory** Indicator 2 (GEF Core Indicator 11): # indirect project beneficiaries disaggregated by gender (individual people)  Number of people (F/M) benefitting from reduced exposure to mercury, POPs or U-POPs. Target: 800,000/800,000 | 0 | 0/0 | 800,000/800,000 |
| **Mandatory** Indicator3(GEF Core Indicator 9)**:** Direct or indirect reduction of new POPs: target 35 tons | 2.74 tons of PFOS and SCCP reduced through Green Chemistry Project[[20]](#footnote-21). | New POPs reduced: 10 | New POPs reduced: 35 t |
| **Mandatory** Indicator 4 (GEF Core Indicator 9)**:** Mercury release reduced. Target: 648 kg of mercury emission avoided, 10,000 thermometers and 20,000 mercury lamps replaced | Mercury release reduced:0 | Mercury release reduced: 2500 Th and 5000 mercury lamps. 162 kg Hg avoided. | Mercury release reduced: 10000 Th and 20,000 mercury lamps. 648 kg of mercury emission avoided. |
| **Mandatory** Indicator 5 (GEF Core Indicator 9): U-POPs releases reduced. Target: 2 g Teq/yr | U-POPs release  reduced: 0 | U-POPs releases reduced: 0 | U-POPs releases reduced: 2 g Teq/yr |
| **Project component 1** | **Promote sustainable production - consumption in key sectors through Ecolabeling, Green Financing and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors** | | | |
| Project Outcome[[21]](#footnote-22) 1.1  Environmental regulation upgraded to include new POPs; Ecolabel and related policies on POPs and mercury lifecycle management developed and implemented. (Note: Outcome 1.1 and 1.2 merged together to fulfil UNDP template requirements) | **Indicator 6**: Number of environmental regulation upgraded/enacted. Target: one environmental regulation concerning new POPs drafted and enacted; One environmental regulation concerning ecolabel drafted and enacted | Environmental regulation related to new POPs are missing / incomplete.  Environmental regulation related to the phasing out of mercury missing/incomplete.  Environmental regulation on eco-labelling does not include POPs and mercury. | Environmental regulations on ecolabel drafted and enacted; environmental regulation on new POPs drafted. | One environmental regulation concerning new POPs drafted and enacted; One environmental regulation concerning ecolabel drafted and enacted. |
| **Indicator 7**: Number of policies on POPs and mercury lifecycle drafted and enacted. | A policy on the lifecycle of POP-containing articles and on mercury-containing articles is currently missing. | One policy on the lifecycle of POP-containing products, and one policy on the lifecycle management of mercury-containing products drafted. | One policy on the lifecycle of POP-containing products, and one policy on the lifecycle management of mercury-containing products enacted. |
| Outputs to achieve Outcome 1.1 | 1.1.1 Review, amendment of existing, or creation of new legislation related to POPs and new POPs in key sectors (e.g., plastic and polymers,, metal plating, paint/solvents, etc.), including ensuring inclusion of provisions to support, *inter alia*, prohibition of import for new POPs; concentration limits for POP brominated flame retardants, HBCDD, SCCP and other POPs/PTS in products and waste; development of Eco-labelling schemes; New EPR schemes developed and enforcement of existing EPR schemes improved.  1.1.2 Roadmap and sectorial plans for replacement of mercury thermometers and mercury-containing lamps established.  1.1.3. Review of the existing legislation related to mercury in products and mercury emission carried out, to help develop, strengthen, and ultimately enforce regulations concerning technical standards for mercury waste management. | | | |
| Outcome 1.2 Development of a Green Finance Framework, to sustain the shifting of enterprises towards a non-POP and a non-mercury manufacturing  2 indicators maximum | **Indicator 8***:* Green financing mechanism is in place  Target: a green financing mechanism with a fund size of 5,000,000 USD fully subscribed | A green financing mechanism is in place however, it doesn't include POPs or mercury | Green financing mechanism designed, approved and subscribed for at least 1 million US dollar. | Green financing mechanism fully subscribed (5million US dollars) |
| **Indicator 9***:* Eco-label system and green procurement are in place  Target: Eco-label system including requirements for POPs and mercury content developed and approved for at least 10 product categories, with at least 5 industries certified.  Green procurement policy developed, approved and implemented with at least 100,000 USD of green products purchased. | Eco-label systems do exist in several sectors; however, they do not include requirements on mercury or POPs concentration.  A green procurement system is missing | Eco-label system including requirements for POPs and mercury content developed for at least 10 product categories.  Green procurement policy developed, approved. | Eco-label system including requirements for POPs and mercury content developed and approved for at least 10 product categories, with at least 5 industries certified.  Green procurement policy developed, approved and implemented with at least 100,000 USD of green products purchased. |
| Outputs to achieve Outcome 1.2 | 1.2.1 Green Finance framework designed, funded and implemented to support private sector on getting incentives policy (e.g., tax, fee, credit fund, investment equity). Eco-label improved, funded and properly communicated, building on national and other finance institutions (e.g., the Viet Nam Environment Protection Fund (VEPF))  1.2.2 Green Procurement scheme designed and implemented for MONRE, some DONREs and health-care facilities (MOH) | | | |
| **Project component 2** | **Life cycle management of POPs and PTS containing products** | | | |
| Outcome 2.1  Sustainable manufacture and design of plastic, polymers, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP and mercury in the environment.  2 indicators maximum | **Indicator 10**. Number of key sectors where alternative product design is demonstrated  Target: A knowledge network established among manufacturing sectors with at least 2 sectors to be selected based on the result of the survey. | Alternative design finalized at the reduction of POPs or mercury has been first demonstrated in electroplating and paint companies under Green Chemistry Project. | Key sectors selected | Alternative product design demonstrated in at least 2 industrial sectors of the network |
| **Indicator 11**: Number of air pollution control systems designed and installed at industrial facilities.  Target: air pollution control systems designed and installed for an overall amount of 1×106 Nm3/h of flue gas treated. | In most cases SMEs and small-mid scale incinerators make use of simple air pollution treatment systems not suitable for the reduction of POPs | Air pollution control systems designed and financed by private industry with support of Green Fund for an overall amount of 1×106 Nm3/h of flue gas treated | Air pollution control systems procured and installed for an overall amount of 1×106 Nm3/h of flue gas treated |
| Outputs to achieve Outcome 2.1 | 2.1.1 Analysis of the manufacturing sectors for which the use of new POPs has been recently confirmed but not yet included in the NIP carried out, in order to strengthen baseline and select optimum sectors and enterprises for pilot activity to improve POPs management in the value chain.  2.1.2 Alternative product design to prevent the use of hazardous chemicals additives in general and consequently the use of POPs (e.g., BFR, PBDE, HBCD, PFOS/PFOAs, SCCP) in key sectors demonstrated.  2.1.3 Design and implementation of modern Air Pollution Control Systems to prevent the release of mercury and U-POPs suitable also for small enterprises carried out | | | |
| Outcome 2.2  Closure of the gap between recyclers and industry to sustain circular economy and to prevent the contamination of recyclable materials.  2 indicators maximum | **Indicator 12**: Number of demonstrations of reuse, up-cycling, recycling or waste-to-energy established  Target: at least one demonstration carried out for reuse, upcycling, recycling or waste to energy ofproducts and materials. | Although the recycling of some materials is common in Vietnam, the recycling operations are often not environmentally sound. The concept of upcycling is basically unknown in Vietnam. | At least one demonstration designed for the reuse, upcycling, recycling or waste to energy of products and materials. | At least one demonstration carried out for the reuse, upcycling, recycling or waste to energy of products and materials. |
| **Indicator 13**: Number of take-back schemes designed and piloted for product or product components.  Target: at least one take-back scheme demonstrated entailing prevention of POPs or mercury in the manufacturing chain or their release in the environment | In Vietnam, except for the case of water bottle, take-back scheme is uncommon. | At least one take-back scheme designed entailing the phase out or the release prevention of POPs and mercury in the environment | At least one take-back scheme piloted entailing the phase out or the release prevention of POPs and mercury in the environment |
| Outputs to achieve Outcome 2.2 | 2.2.1 Interaction, technical exchange and commercial agreements between recyclers and industry promoted to identify and implement solutions for the horizontal and safe recycling of materials and for the segregation and safe disposal of POP-contaminated materials. | | | |
| **Project component 3** | **Lifecycle management of mercury-containing products** | | | |
| Outcome 3.1  Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management.  2 indicators maximum | **Indicator 14**: Number of medical devices containing mercury replaced with non-mercury devices  Target: at least 10,000 mercury-containing thermometers replaced with non-mercury thermometers | Although the number of mercury thermometers replaced in hospitals is increasing, these equipment are still very common in many hospitals in Vietnam. | At least 5000 mercury-containing thermometers replaced with non-mercury thermometers | At least 10,000 mercury-containing thermometers replaced with non- mercury thermometers |
| **Indicator 15**: Number of mercury-containing lamps replaced with mercury-free lamps  Target: at least 20,000 mercury-containing lamps replaced with mercury-free lamps | Fluorescent lamps are being replaced by LED lamps in Vietnam but the replacement rate is still low and faces market constraints. | At least 10,000 mercury-containing lamps replaced with non- mercury lamps | At least 20,000 mercury-containing lamps replaced with non-mercury lamps |
| Outputs to achieve Outcome 3.1 | 3.1.1. Risk management, technical guidance and training materials developed for the sound management of mercury stockpiles, mercury waste and obsolete mercury-containing equipment, with specific reference to lamps and medical devices containing mercury.  3.1.2. Capacity and institutions are strengthened to eliminate use of mercury containing products (eg. Mercury lamps, thermometers and cosmetics); road map and plan for using of mercury-free devices developed and implemented.  3.1.3 Technologies for the recycling of mercury containing equipment with segregation and storage of mercury established. | | | |
| Outcome 3.1  Environmentally sound management of End-of-Life mercury-containing products established | **Indicator 16**: Number of technical guidance made available and training on mercury performed.  Target: at least 1 set of technical guidance and 10 training packages delivered in Training of Trainers events for health-care facilities. | Limited training on mercury devices carried out in the course of previous GEF projects. | Training needs assessed  Technical guidance compliant with WHO guidelines and training package prepared  At least 4 training carried out | The remaining 6 training carried out for a total of 10. |
| **Indicator 17**: Number of facilities for the recycling and disposal of mercury-containing devices and waste established  Target: at least one facility for the storage and disposal of mercury-containing devices established | A dedicated facility for the safe storage and management of EOL mercury-containing equipment and lamp is missing. | A site for the establishment of the facility is selected.  Design of the facility, including technical specification and technical bidding carried out. | Equipment for mercury waste storage and treatment procured, tested and operational in one site. |
| Outputs to achieve Outcome 3.1 | 3.1.1. Risk Management Strategy, technical guidance and training materials developed for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury lamps and medical devices.  3.1.2. Capacity and institutions are strengthened to eliminate use of mercury containing products (e.g., Mercury lamps, thermometers and cosmetics) in medical facilities; road map and plan for using of mercury-free devices developed and implemented (20,000 mercury thermometers replaced) | | | |
| **Project component 4** | **Knowledge management and M&E** | | | |
| Outcome 4.1  Project management team established, lesson learnt and knowledge generated by the project properly shared and communicated.  2 indicators maximum | **Indicator 18**: Number of project staff appointed (F/M)  Target: Project management institutions established with an equal F/M ratio. | Not applicable | All the project staff required for the PMU and the PSC is appointed within 3 months from project start, with a proportion F/M not smaller than 1. | Additional project staff recruited if needed by the project, with a proportion F/M not smaller than 1. |
| **Indicator 19**: Number of lessons learned and best practices shared by the project management team.  Target: Both the Project Steering Committee and the Project Management Unit to report on the experience gathered for each of the 3 project technical components in international workshop including gender mainstreaming aspects. | Not applicable | Procedures for the acquisition and exchange of information and knowledge generated by the project established.  At least one knowledge sharing workshop involving UN/GEF projects on eco-labelling, green chemistry and green financing held where lessons learnt for each project component are shared. | At least one further knowledge sharing workshop (for a project total of 2) involving UN/GEF projects on eco-labeling, green chemistry and green financing held where lesson learnt for each project component are shared and proposal for follow up activities discussed. 10 knowledge products or lessons learnt produced and published. |
| Outputs to achieve Outcome 4.1 | 4.1.1 Project inception and inception report carried out  4.1.2 Project steering committee and project management unit established  4.1.3 Knowledge management system including project website established | | | |
| Outcome 4.2  Project monitoring, evaluation and audit carried out in compliance with GEF, UNDP and GoV standards | **Indicator 20**: Number of evaluation and audit completed and properly reflected in project management.  Target: one mid-term review, one terminal evaluation completed.  One financial audit carried out yearly | Not applicable | Mid-term review completed and management responses elaborated and approved.  Two financial audits completed | Terminal evaluation completed and management responses evaluated and approved.  Further two financial audits completed (total of 4) |
| **Indicator 21**: Number of management report approved.  Target: at least one PIR per year drafted and approved. Annual and Quarterly Project reports drafted and approved; Annual Project Workplan drafted and approved; Final project report drafted and approved. | Not applicable | One inception report,  Two PIRs  Two Annual Project Workplan  Eight quarterly project reports | Inception report  Two additional PIRs (total of four)  Two additional Annual Project Workplan (total of four)  Eight additional quarterly project reports (total of 16)  Final project report |
| Outputs to achieve Outcome 4.2 | 4.2.1. Project and its activities monitored and evaluated on a periodic basis in line with GEF, UNDP and government requirements.  4.2.2 Indicators established to facilitate successful project implementation and sound impact assessment. | | | |

# Monitoring and Evaluation (M&E) Plan

The project results, corresponding indicators, and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. If baseline data for some of the results indicators are not yet available, they will be collected during the first year of project implementation. The Monitoring Plan details the roles, responsibilities, and frequency of monitoring project results.

Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP](http://www.undp.org/content/undp/en/home/operations/accountability/programme_and_operationspoliciesandprocedures.html) and [UNDP Evaluation Policy](http://www.undp.org/content/undp/en/home/operations/accountability/evaluation/evaluation_policyofundp.html). The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements. Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the [GEF Monitoring Policy](https://www.thegef.org/sites/default/files/council-meeting-documents/GEF-C.56-03%2C%20Policy%20on%20Monitoring.pdf) and the [GEF Evaluation Policy](https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.ME_C56_02_GEF_Evaluation_Policy_May_2019_0.pdf) and other [relevant GEF policies](https://www.thegef.org/documents/policies-guidelines)[[22]](#footnote-23). The costed M&E plan included below, and the Monitoring plan, will guide the GEF-specific M&E activities to be undertaken by this project.

In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point (OFP) and national/regional institutes assigned to undertake project monitoring. The GEF OFP will strive to ensure consistency in the approach taken to the GEF specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved, for example, by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF agencies.

**Additional GEF monitoring and reporting requirements:**

Inception Workshop and Report: A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:

1. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
2. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
3. Review the results framework and monitoring plan.
4. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
5. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
6. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
7. Plan and schedule Project Steering Committee meetings and finalize the first-year annual work plan.
8. Formally launch the Project.

GEF Project Implementation Report (PIR):

The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the PSC. The quality rating of the previous year’s PIR will be used to inform the preparation of the subsequent PIR.

GEF Core Indicators:

The GEF Core indicators included as Annex 12 will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to required evaluation missions, so these can be used for subsequent ground truthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF [website](https://www.thegef.org/sites/default/files/documents/Results_Guidelines.pdf).

Independent Mid-term Review (MTR):

The terms of reference, the review process and the final MTR report will follow the standard templates and guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center](http://web.undp.org/evaluation/guidance.shtml#gef) (ERC).

The evaluation will be ‘independent, impartial, and rigorous. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by July 2025. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report’s completion.

Terminal Evaluation (TE):

An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available on the [UNDP Evaluation Resource Center](http://web.undp.org/evaluation/guidance.shtml#gef).

The evaluation will be ‘independent, impartial and rigorous. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by May 2026. A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report’s completion.

Final Report:

The project’s terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the PSC during an end-of-project review meeting to discuss lessons learned and opportunities for scaling up.

Agreement on intellectual property rights and use of logo on the project’s deliverables and disclosure of information**:** To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[[23]](#footnote-24) and the GEF policy on public involvement[[24]](#footnote-25).

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| **Monitoring and Evaluation Plan and Budget:** This M&E plan and budget provides a breakdown of costs for M&E activities to be led by the Project Management Unit during project implementation.  These costs are included in Component 4 of the Results Framework and TBWP. | | |
|
| **GEF M&E requirements** | **Indicative costs (US$)** | **Time frame** |
|
| **Inception Workshop** | 10,000 | Within 60 days of CEO endorsement of this project. |
| **Inception Report** | 14,290 | Within 90 days of CEO endorsement of this project. |
| **M&E of GEF core indicators and project results framework** | 40,000 | Annually and at mid-point and closure. |
| **GEF Project Implementation Report (PIR)** | 20,000 | Annually typically between June and August |
| **Monitoring of Gender Action Plan** | 25,000 | Ongoing. |
|
| **Supervision missions** | 30,000 | Annually |
| **Independent Mid-term Review (MTR)** | 40,000 | By July 2024 |
| **Independent Terminal Evaluation (TE)** | 45,000 | By May 2026 |
| **TOTAL indicative COST** | 224,290 |  |
|

# Governance and Management Arrangements

The project will be implemented following UNDP’s national implementation modality, according to the Standard Basic Assistance Agreement between UNDP and the Government of Vietnam, the Vietnam Government’s regulations for ODA project/program management (Decree 56/2020/NĐ-CP), and the Joint Harmonized Project/Program Management Guidelines of the UN and Government of Vietnam.

Implementing Partner (IP): The Implementing Partner for this project is the **Viet Nam Ministry of Natural Resource and Environment (MONRE).**

The Implementing Partner (IP) is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document. The IP is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

The MONRE is also acting as the Governing Body of the project as regulated by the Decree 56/2020/ND-CP. The Governing Body will:

(i) decide the organizational structure of the project management apparatus, including the Project Steering Committee, Project Owner, Project Management Unit;

(ii) formulate and approve the 5-year plan for implementation of the project;

(iii) approve the overall plan for project implementation; compile and approve annual plans for project execution;

(iv) direct the procurement process;

(v) organize the supervision and assessment of the project progress, ensure punctuality, quality, and achievement of set targets;

(vi) bear the additional costs incurred because of human errors, wastefulness, corruption, and misconducts in management and use of ODA under its management in accordance with regulations of law on public investment; and

(vii) perform other duties and entitlements in accordance with law, specific international treaty or agreement on ODA.

The Project Steering Committee (PSC) will be established and its composition must include the following roles:

* Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
* Address project issues as raised by the project manager;
* Provide guidance on new project risks, and agree on possible mitigation and management actions to address specific risks;
* Agree on project manager’s tolerances as required, within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager’s tolerances are exceeded;
* Advise on major and minor amendments to the project within the parameters set by UNDP-GEF;
* Ensure coordination between various donor and government-funded projects and programmes;
* Ensure coordination with various government agencies and their participation in project activities;
* Track and monitor co-financing for this project;
* Review the project progress, assess performance, and appraise the Annual Work Plan for the following year;
* Appraise the annual project implementation report, including the quality assessment rating report;
* Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
* Review combined delivery reports prior to certification by the implementing partner;
* Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
* Address project-level grievances;
* Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
* Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

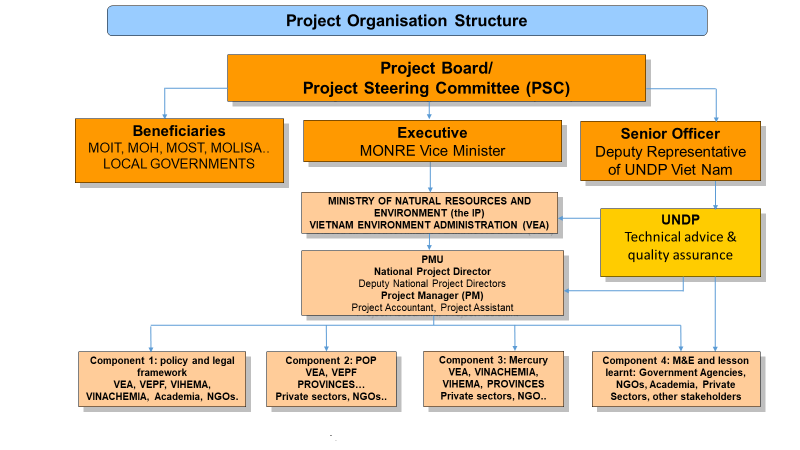
Ensure highest levels of transparency and take all measures to avoid any real or perceived conflicts of interest. It is, therefore, suggested that the PSC will consist of members from MONRE (VEA, Planning and Financial Department, International Cooperation Department, Science and Technology Department, Vietnam Environment Protection Fund), UNDP CO Vietnam, representatives from other agencies such as Ministry of Industry and Trade (MOIT), Ministry of Health (MOH), Ministry of Planning and Investment (MPI), Ministry of Finance (MOF), representatives from targeted industrial sectors as key beneficiaries and representatives from NGOs. The PSC will provide guidance on the annual work plans and oversee the project implementation and progress to ensure that the project’s resources made available and the outputs produced meet the requirement of beneficiaries and the Government. The PSC will be chaired by an individual from the MONRE Ministerial level and meet annually. Additional meetings can be arranged if deemed necessary.

To ensure UNDP’s ultimate accountability, PSC decisions should be made in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency, and effective international competition. In case consensus cannot be reached within the Committee, the UNDP Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed*.*

The Project Owner: Project Owner for this project is the Vietnam Environment Administration (VEA) under MONRE. The project owner is responsible and accountable for direct implementation and management of the project including planning, implementation, monitoring and evaluation of the project intervention, reporting, and achieving project outcomes. The VEA bears following tasks as regulated by Decree 56/2020/ND-CP: (i) organize the program/project management and execution apparatus according to the decision of the governing body MONRE; (ii) effective management and use of the project resources of the project during the operation; (iii) formulate and submit 5-year plans, overall plan, and annual plans for project implementation to the governing body MONRE for approval; (iv) formulate quarterly work plan for actual implementation of the interventions; (v) carry out procurement activities in accordance with effective regulations of the national law on procurement; (vi) negotiate, conclude, and supervise the implementation of contracts, and resolves difficulties within their competence; (vii) cooperate with the local governments of three piloting provinces for establishment and management of three sites; (vii) supervise and assess the project to ensure punctuality, quality, and achievement of set targets; (viii) provide direction to the Project Management Unit (PMU) to make the terminal report and financial statement of the project, audit and transfer of assets and documents of the program/project, and compliance with regulations on project close-out of the international treaty or agreement on ODA; and (ix) take responsibility for every loss, wastefulness, corruption, and misconduct that occurs during the implementation of the project.

Co-implementing Partners (CIPs): The CIPs include the Management Unit of three project areas: green financing framework, mercury management, and health-care waste management. The CIPs will implement relevant interventions of the project in the first three components as regulated in the Letter of Agreement signed with the VEA, in which the authorization of the IP to the CIPs must comply with regulations on authorization under the current law of Vietnam. For each of the three areas, under the direction of the PSC and Project Owner, an Implementation Team will be constituted to provide technical and planning inputs for implementation of project activities.

Project Management Unit (PMU): The PMU established by the Project Owner consists of core members including the National Project Director and the Chief Accountant in charge, being a leader and official of VEA. Also (a) National Project Deputy Director(s), and a National Project Coordinator can be nominated by VEA, and other members from key agencies will be involved in the PMU. A National Project Team consisting of a National Project Manager (NPM), Project Accountant, and Project Assistant-cum-Interpreter is recruited to provide assistance to the PMU on daily implementation and monitoring of the project interventions.



The PMU shall perform the tasks given by the Project Owner, including (i) formulate and submit overall plan and annual plans for the project implementation; (ii) prepare and carry out the actual project implementation; (iii) carry out activities related to bidding, contract management; (iv) budget management, perform financial and asset management of the project; (v) monitor and assess the implementation of the project activities; (vi) prepare the acceptance and transfer of the results of the project after completion, finish audit works, transfer assets of the project, prepare the terminal report and financial statement of the project, follow regulations on project close-out as per UNDP-GEF procedures; (vii) perform other tasks given by the Project Owner within the framework of the project.

The PMU will be responsible for resources mobilization, including human resources, co-financing, planning, and implementation of project activities, will provide mechanisms and technical inputs necessary to integrate the results of various activities, will ensure satisfactory performance of the project members and contractors, and will provide official reports to the PSC as needed.

Positions under PMU are as follow:

* The National Project Director (NPD) is accountable to MONRE and UNDP for the use of project resources and to deliver on outcomes, responsible for overall management and implementation of the project interventions. He/she will head the PMU and will be accountable to MONRE for the use of project resources and to deliver on outcomes. The NPD will manage the implementation of all project activities and will work closely with all partner institutions to link the project with complementary national programs and initiatives. The NPD is accountable to MONRE and the PSC for the quality, timeliness, and effectiveness of the project intervention implementation, as well as for the use of resources. The NPD will be technically supported by contracted national and international consultants and service providers. Recruitment of specialist services for the project will be done by the NPD, in consultation with UNDP and MONRE. The NPD will not be paid by the project but will represent a government in kind contribution to the project.
* National Project Deputy Directors (NPDDs): NPDDs will be assigned responsibility to support the NPD in technical aspects of the project, provide direct guidance to project management unit to achieve project results/targets. The NPDDs will not be paid by the project but will represent a government in-kind contribution to the project.
* National Project Coordinators (NPCs): NPCs will be assigned to be in-charge to support PMU to supervise NPO, ensure the project implementation in accordance with government regulations. The NPC will not be paid by the project but will represent a government in-kind contribution to the project.
* National Project Team: A National Project Team consisting of one National Project Manager (NPM), a Project Assistant-cum-Interpreter, and a Project Accountant will be recruited by the NPD. These three main positions will be covered by the Project.

Other technical officers can be assigned from VEA and different partners as in-kind contribution to the project. The National Project Team will assist the PMU in the project implementation and monitoring on a day-to-day basis. The functioning of the NPT will end when the final project Terminal Evaluation report and corresponding management response, and other documentation required by the GEF and UNDP, has been completed and submitted to UNDP (including operational closure of the project).

Detailed TORs for all key positions and committees is provided in Annex 7.

UNDP: Working closely with MONRE, UNDP-CO is ultimately responsible and accountable for the delivery of results, as the GEF Implementing Agency. UNDP shall provide project cycle management services as defined by the GEF Council, that will include (i) providing financial and audit services to the project; (ii) overseeing financial expenditures against project budgets; (iii) ensuring that activities including procurement and financial services are carried out in strict compliance with UNDP/GEF procedures; (iv) ensuring that the reporting to GEF is undertaken in line with the GEF requirements and procedures; (v) facilitation of project learning, exchange and outreach within the GEF family; (vi) providing contracts for the project mid-term and final evaluations and triggering additional reviews and/or evaluations as necessary and in consultation with the project counterparts. Two UNDP staff members will be assigned with the responsibility for the day-to-day oversight of project delivery and finance, including one Programme Officer and one Programme Assistant.

The UNDP Programme Officer will also act as a focal point of UNDP CO in facilitating and monitoring the project implementation. He/she will maintain a continuous partnership with the PMU and the project team and participates in all project reviews, work/budget planning meetings, no-objection to TORs, review of deliverables, monitoring visits and evaluations of all results. She/he will certify the annual and quarterly work-plan/budgets/progress reports, as well as proposed use of unspecified budget within the annual budget already approved for the project.

**Project extensions:** The UNDP Resident Representative and the UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and only if the following conditions are met: one extension only for a project for a maximum of six months; the project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the UNDP Country Office oversight costs in excess of the CO’s Agency fee specified in the DOA during the extension period must be covered by non-GEF resources.

Agreement on intellectual property rights and use of logo on the project’s deliverables and disclosure of information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the MONRE/VEA logo and UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy 48 and the GEF policy on public involvement.

# Financial Planning and Management

The total cost of the project is *USD 33,149,850.* This is financed through a GEF grant of *USD* 4,600,050 administered by UNDP, plus a co-financing contribution from various private and public institutions of 28,549,800 USD:

Confirmed Co-financing: The actual realization of project co-financing will be monitored during the *mid-term review* and terminal evaluation process and will be reported to the GEF. Note that all project activities included in the project results framework that will be delivered by co-financing partners (even if the funds do not pass through UNDP accounts) must comply with UNDP’s social and environmental standards. Co-financing will be used for the following project activities/outputs:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Co-financing source** | **Type of Cofinancing** | **Amount (USD)** | Planned Co-financing Activities/Outputs | **Risks** | **Risk mitigation measures** |
| VIETNAM PLASTICS ASSOCIATION (VPA) | Grant  & In kind | 3,500,000 | With 400 members carrying out import, export, production and business activities in the plastic industry/field related to POPs and harmful chemicals, committed to provide co-financing related to infrastructure, equipment investment to environment protection and reducing emission of POPs and other harmful chemicals during project implementation. | Companies under the association not interested in partnership with the project. | Work closely with the VPA at the beginning of the project implementation to select most suitable companies |
| VIETNAM CORROSION ASSOCIATION (VICORRA) | Grant  & In kind | 3,000,000 | With 62 members carrying out export, import, production and business related to anti-corrosion and protection of metals, committed to provide co-financing related to infrastructure, equipment investment related to the reduction of environmental pollution and emission of POPs and other chemicals during project implementation. | Companies under the association not interested in partnership with the project. | Work closely with the VICORRA at the beginning of the project implementation to select most suitable companies |
| VINAFOAM VIETNAM CO.LTD | Grant  & In kind | 2,000,000 | In order to reduce use and emission of POPs and harmful chemicals and better enforce regulations on environmental protection, committed to contribute total co-financing of the project through infrastructures and equipment. | Low involvement of /coordination with the company hinders the use of co-financing | The project team will monitor every year co-financing to the project |
| Vietnam Environment Protection fund | Investment loan | 5,000,000 | Committed to providing Green Credit through concessional lending to investment projects on concentrated wastewater treatment of industrial parks, industrial clusters, and solid waste treatment nationwide (which may include a number of investment projects within the framework of the POP/Project Project). if compliant with loan conditions under current regulations). | Low interest of enterprises to apply for green funds | Project to conduct awareness raising and technical assistance to facilitate the application of enterprises |
| Vietnam Environment Administration | Grant  & In kind | 11,750,000 | To support activities of the project and more specifically: to reduce the use and emission of POPs and harmful chemicals and enforce well regulations on environmental protection.  Implementing Partner of the project | Change in organizational structure of VEA | Project team and UNDP will monitor co-financing and ensure transition to relevant agency. |
| Vietnam Environment Administration | In Cash | 200,000 |
| Vietnam Chemicals Agency - MOIT | Grant  & In-kind | 1,999,800 | To support activities of the project and more specifically: To support green growth and reduction in the use and release of POPs / harmful chemicals; Participating to implement the related activities of the project | Low involvement of / coordination with the company hinders the use of co-financing | Project to ensure coordination with all Co-financing partners through the PSC |
| Vietnam Health Management Agency - MOH | In-kind | 500,000 | Reduction in the use and release of POPs / harmful chemicals  Participating to implement the related activities of the project | Low involvement of / coordination with the company hinders the use of co-financing | Project to ensure coordination with all Co-financing partners through the PSC |
| BMU-EU | Grant | 600,000 | Accelerating Private Sector Engagement in Climate Resilient and Low Emission Investment Opportunities in Viet Nam’s NDC UNDP/MONRE.  Reduction of intensive use of mercury contained lamps in agriculture. | No risk as the Project has just started | N/A. |
| **Total** |  | **28,549,800** |  |  |  |

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board. Should the following deviations occur, the Project Manager/CTA and UNDP Country Office will seek the approval of the BPPS/GEF team to ensure accurate reporting to the GEF:

* a) Budget re-allocations among components in the project budget with amounts involving 10% of the total project grant or more;
* b) Introduction of new budget items that exceed 5% of original GEF allocation.

Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop. If the Implementing Partner is an UN Agency, the project will be audited according to that Agencies applicable audit policies.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. All costs incurred to close the project must be included in the project closure budget and reported as final project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. **Operational closure must happen with 3 months after posting the TE report to the UNDP ERC**. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

Transfer or disposal of assets: In consultation with the Implementing Partner and other parties of the project, UNDP is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In all cases of transfer, a transfer document must be prepared and kept on file[[25]](#footnote-26). The transfer should be done before Project Management Unit complete their assignments.

Financial completion (closure): The project will be financially closed when the following conditions have been met: a) the project is operationally completed or has been cancelled; b) the Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed **within 6 months of operational closure or after the date of cancellation**. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the BPPS/GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the BPPS/GEF Directorate in New York. No action is required by the UNDP Country Office on the actual refund from UNDP project to the GEF Trustee.

# Total Budget and Work Plan

|  |  |  |  |
| --- | --- | --- | --- |
| Total Budget and Work Plan | | | |
| Atlas Award ID: | 00128574 | Atlas Output Project ID: | 00122537 |
| Atlas Proposal or Award Title: | Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel | | |
| Atlas Business Unit | VNM10 | | |
| Atlas Primary Output Project Title | Reduce the impact and release of mercury and POPs in Vietnam through lifecycle approach and Ecolabel | | |
| UNDP-GEF PIMS No. | 6491 | | |
| Implementing Partner | Ministry of Natural Resources and the Environment (MONRE) | | |

| **Atlas Activity (GEF Component)** | **Atlas Implementing Agent (Responsible Party[2] , IP or UNDP)** | **Atlas Fund ID** | **Donor Name** | **Atlas Budgetary Account Code[3]** | **ATLAS Budget Account Description[3]** | **Working days (total)** | **Amount Year 2022(USD)** | **Amount Year 2023(USD)** | **Amount Year 2024(USD)** | **Amount Year 2025(USD)** | **Total (USD)** | ***See Budget Note:*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Component 1: Promote sustainable production - consumption in key sectors through Ecolabeling, Green Financing and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors. |  |  |  | 71200 | International consultant | 334 | $43,420 | $97,890 | $54,210 | $21,580 | **$217,100** | 1 |
|  |  |  | 71300 | Local Consultant | 1859 | $74,360 | $173,880 | $90,760 | $32,800 | **$371,800** | 2 |
|  |  |  | 71400 | Contractual Services - individuals |  | $4,080 | $10,080 | $4,800 | $1,440 | **$20,400** | 3 |
|  |  |  | 71600 | National Travels | 74 | $6,216 | $14,616 | $7,560 | $2,688 | **$31,080** | 4 |
|  |  |  | 71600 | International Travels | 8 | $8,480 | $17,490 | $11,130 | $5,300 | **$42,400** | 5 |
|  |  |  | 75700 | Training, Workshops and Conferences |  | $4,320 | $32,060 | $15,670 | $0 | **$52,050** | 6 |
| ***Total for Component 1*** |  |  |  |  |  |  | **$140,876** | **$346,016** | **$184,130** | **$63,808** | **$734,830** |  |
| Component 2: Life cycle management of POPs and PTS containing products. |  |  |  | 71200 | International consultant | 573 | $7,670 | $111,735 | $150,703 | $102,343 | **$372,450** | 7 |
|  |  |  | 71300 | Local Consultant | 1625 | $7,400 | $98,700 | $131,150 | $87,750 | **$325,000** | 8 |
|  |  |  | 72100 | Contractual Services-companies |  | $0 | $355,074 | $473,432 | $355,074 | **$1,183,581** | 9 |
|  |  |  | 71400 | Contractual Services - individuals |  | $2,400 | $23,400 | $29,400 | $22,800 | **$78,000** | 10 |
|  |  |  | 71600 | National Travels | 77 | $588 | $9,702 | $12,495 | $9,555 | **$32,340** | 11 |
|  |  |  | 71600 | International Travels | 8 | $1,060 | $12,720 | $16,165 | $12,455 | **$42,400** | 12 |
|  |  |  | 75700 | Training, Workshops and Conferences |  | $0 | $18,910 | $16,390 | $0 | **$35,300** | 13 |
| ***Total for Component 2*** |  |  |  |  |  |  | **$19,118** | **$630,241** | **$829,735** | **$589,977** | **$2,069,071** |  |
| Component 3: Mercury lifecycle management of mercury containing products |  |  |  | 71200 | International consultant | 133 | $7,020 | $26,910 | $25,610 | $26,910 | **$86,450** | 14 |
|  |  |  | 71300 | Local Consultant | 802 | $14,640 | $51,120 | $47,120 | $47,520 | **$160,400** | 15 |
|  |  |  | 72100 | Contractual Services-companies |  | $63,000 | $303,000 | $303,000 | $341,000 | **$1,010,000** | 16 |
|  |  |  | 71400 | Contractual Services - individuals |  | $1,500 | $4,500 | $4,500 | $4,500 | **$15,000** | 17 |
|  |  |  | 71600 | Travel | 34 | $1,260 | $4,284 | $4,284 | $4,452 | **$14,280** | 18 |
|  |  |  | 75700 | Training, Workshops and Conferences | 1 | $720 | $8,445 | $5,205 | $7,780 | **$22,150** | 19 |
| ***Total for Component 3*** |  |  |  |  |  |  | **$88,140** | **$398,259** | **$389,719** | **$432,162** | **$1,308,280** |  |
| Component 4: Monitoring and Evaluation. |  |  |  | 71200 | International consultant | 108 | $17,550 | $17,550 | $17,550 | $17,550 | **$70,200** | 20 |
|  |  |  | 71300 | Local Consultant | 525 | $26,250 | $26,250 | $26,250 | $26,250 | **$105,000** | 21 |
|  |  |  | 72100 | Contractual Services-companies |  | $6,250 | $6,250 | $6,250 | $6,250 | **$25,000** | 22 |
|  |  |  | 71600 | National Travels | 22 | $2,310 | $2,310 | $2,310 | $2,310 | **$9,240** | 23 |
|  |  |  | 71600 | International Travels | 3 | $3,975 | $3,975 | $3,975 | $3,975 | **$15,900** | 24 |
|  |  |  | 74100 | Professional services (including audit) |  | $2,500 | $2,500 | $2,500 | $2,500 | **$10,000** | 25 |
|  |  |  | 75700 | Training, Workshops and Conferences |  | $17,950 | $3,000 | $3,000 | $3,000 | **$26,950** | 26 |
| ***Total for Component 4*** |  |  |  |  |  |  | **$76,785** | **$61,835** | **$61,835** | **$61,835** | **$262,290** |  |
| Project management cost |  |  |  | 61100 | Salary cost (PM) | 1122 | $24,340 | $24,340 | $24,340 | $24,340 | **$97,359** | 27 |
|  |  |  | 61100 | Salary cost (Assistants) | 2244 | $28,305 | $28,305 | $28,305 | $28,305 | **$113,220** | 28 |
|  |  |  | 72800 | Information Technology Equipment |  | $3,750 | $3,750 | $3,750 | $3,750 | **$15,000** | 29 |
| ***Total for Project Management*** |  |  |  |  |  |  | **$56,395** | **$56,395** | **$56,395** | **$56,395** | **$225,579** |  |
| **Project Total** |  |  |  |  |  |  | **$381,314** | **$1,492,746** | **$1,521,814** | **$1,204,177** | **$4,600,050** |  |

|  |  |
| --- | --- |
| Budget note number | **Description.** |
| 1 | International consultants providing technical assistance and expertise on the following topics, for an overall number of 334 days at 650 USD/day:   * regulation and POPs (25 days). * POP and eco-labeling (15 days). * POP and EPR (8 days). * gender specific risk management of POPs and mercury included in the relevant environmental regulation. (10 days). * mercury in healthcare equipment (10 days). * mercury in lighting equipment (10 days). * mercury disposal technologies (25 days). * gender specific risk management of POPs and mercury included in the relevant environmental regulation. (10 days). * regulation and mercury (10 days). * regulation and industrial emission limits (15 days). * POP and mercury waste disposal (15 days). * green financing, POP and mercury (40 days). * green financing mechanism in public and private institutions (15 days). * new POPs in manufacturing and industrial emissions (40 days). * green financing implementation in public and private institutions (22 days). * lending programs for women enterprises (10 days). * green procurement in public institutions (19 days). * green procurement in healthcare facilities (10 days). * green procurement in public institutions (10 days). * green procurement in health facilities (10 days) * criteria for gender mainstreaming in gender procurement (5 days) |
| 2 | Local Consultants providing technical assistance and expertise or undertaking the following topic, for an overall number of 1859 days at 200 USD/day |
| 3 | Contractual Services - individuals to Provide translation services for an overall amount of 1700 pages at 12 USD/page. |
| 4 | 74 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. |
| 5 | 11 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package. |
| 6 | * One small workshop on the draft law on new POPs for an overall amount of 1800 USD. * One international workshop on the achievements related to regulation on new POPs and EPR for an overall amount of 14950 USD * Two consultation workshops on gender specific personal protection and risk management measures against exposure to mercury for an overall amount of 3600 USD. * One international workshop on the launching of the Green Financing mechanism in Vietnam for an overall amount of 14950 USD * One national level workshop on to introduce the achievement of the piloting related to Green procurement for an overall amount of 14950 USD. * One consultation workshop on green procurement and women entrepreneurships for an overall amount of 1800 USD |
| 7 | International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics, for a total number of 573 days at 650 USD/day |
| 8 | Local consultants providing technical assistance and expertise for a total number of 1625 days at 200 USD/day |
| 9 | Services-companies analytical laboratory to carry out POP analysis   * Services-companies to supply and install industrial equipment and provide technical assistance on the change of manufacturing process for an overall amount of 527510 USD * Services-companies to supply and install air pollution control systems |
| 10 | * Contractual Services - individuals to Provide translation services for an overall amount of 6500 pages at 12 USD/page. |
| 11 | * 77 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. |
| 12 | * 8 International Travels estimated as one round flight at 2500 usd plus 10 days with a DSA of 250 USD/day for each travel package |
| 13 | * An international kick-off event on the launching of financial mechanism on POPs and mercury free design to enterprises, including design and implementation of APCS (output 2.1.3) for an overall amount of 14950 USD. * An international event on the selection of industries awarded under the GF or their project on POPs avoidance or release reduction for an overall amount of 14950 USD * Two consultation workshops on gender specific aspects related to POPs in manufacturing processes and products for an overall amount of 3600 USD * One consultation workshop among female workers and gender experts in the gap closure between recyclers and manufacturing industry for an overall amount of 1800 USD. |
| 14 | International consultants providing technical assistance and expertise (133 days at 650 USD/day |
| 15 | Local consultants providing technical assistance and expertise (802 days at 200 USD/day |
| 16 | * Services-companies to arrange and carry out 4 training events for trainers for representatives of 100 healthcare facilities for an overall amount of 40000 USD. * Services-companies to arrange and carry out 4 training for trainers for representatives of 200 offices for an overall amount of 40000 USD. * Services-companies to Replace 20,000 fluorescent lamp with LED and package replaced lamp pending disposal for an overall amount of 300000 USD * Services-companies to Replace 10,000 mercury thermometer with electronic thermometer and package the replaced thermometers pending disposal for an overall amount of 250000 USD * Services-companies to supply, install and demonstrate an equipment for the treatment of mercury containing waste and one to package and transport mercury waste to the disposal facility for an overall amount of 380000 USD. |
| 17 | * Contractual Services - individuals to Provide translation services for an overall amount of 1250 pages at 12 USD/page. |
| 18 | * 34 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 250 USD/day. |
| 19 | * Two training events on gender specific aspects related to risk prevention in waste management enterprises for an overall amount of 3600 USD. * Two consultation workshops on gender specific aspects related to the elimination of POPs equipment and products in healthcare facilities and offices. for an overall amount of 3600 USD. * An international workshop on to summarize work, achievement and lesson learnt on the mercury component of the project for an overall amount of 14950 USD. |
| 20 | International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics, (108 days at 650 USD/day |
| 21 | Local consultants providing technical assistance and expertise (525 days at 200 USD/day |
| 22 | * A firm to establish a project website, project database, publication and broadcasting of project materials to establish and maintain for an overall amount of 25000 USD |
| 23 | * 22 National Travels estimated each as one round flight at 200 usd plus one day accommodation at 220 USD/day. |
| 24 | * 3 International Travels estimated as one round flight at 2000 usd plus 15 days with a DSA of 220 USD/day for each travel package |
| 25 | * 1 Professional services (including audit) to carry out financial audit of the project for a total number of 4 audits for a total amount of 10000 USD. |
| 26 | * Inception workshop on the project with participation of other countries representatives involved in Green Chemistry for an overall amount of 14950 USD * Meetings of the steering committee for an overall amount of USD 12000 (3000 per year) |
| 27 | * Salary cost for Project Manager (4 yrs + 3 month full time) at 1909 USD/month |
| 28 | * Salary cost for Project assistants (2 persons for 4yrs+3 months full time) at 1110 USD/month |
| 29 | * Information Technology Equipment consisting of 6 sets of office equipment for an overall amount of 15000 USD |

# Legal Context

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Vietnam and UNDP, signed on 21 March 1978. All references in the SBAA to “Executing Agency” shall be deemed to refer to “Implementing Partner.”

This project will be implemented by the Vietnam Ministry of Natural Resource and the Environment (MONRE) (“Implementing Partner”) in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

# Risk Management

1. Consistent with the Article III of the Standard Basic Assistance Agreement (SBAA), the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP’s property in the Implementing Partner’s custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:
2. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
3. assume all risks and liabilities related to the Implementing Partner’s security, and the full implementation of the security plan.
4. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner’s obligations under this Project Document.
5. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml>.
6. The Implementing Partner acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the Implementing Partner, and each of its responsible parties, their respective sub-recipients and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.
7. In the implementation of the activities under this Project Document, the Implementing Partner, and each of its sub-parties referred to above, shall comply with the standards of conduct set forth in the Secretary General’s Bulletin ST/SGB/2003/13 of 9 October 2003, concerning “Special measures for protection from sexual exploitation and sexual abuse” (“SEA”).
8. Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, the Implementing Partner, and each of its sub-parties referred to above, shall not engage in any form of sexual harassment (“SH”). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment.
9. In the performance of the activities under this Project Document, the Implementing Partner shall (with respect to its own activities), and shall require from its sub-parties referred to in paragraph 4 (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, the Implementing Partner will and will require that such sub-parties will take all appropriate measures to:
10. Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;
11. Offer employees and associated personnel training on prevention and response to SH and SEA, where the Implementing Partner and its sub-parties referred to in paragraph 4 have not put in place its own training regarding the prevention of SH and SEA, the Implementing Partner and its sub-parties may use the training material available at UNDP;
12. Report and monitor allegations of SH and SEA of which the Implementing Partner and its sub-parties referred to in paragraph 4 have been informed or have otherwise become aware, and status thereof;
13. Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
14. Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. The Implementing Partner shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties referred to in paragraph 4 with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the Implementing Partner shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.
15. The Implementing Partner shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the Implementing Partner, and each of its sub-parties referred to in paragraph 4, to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.
16. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).
17. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.
18. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.
19. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.
20. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a)UNDP Policy on Fraud and other Corrupt Practices and (b)UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.
21. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes in accordance with UNDP’s regulations, rules, policies and procedures. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner’s (and its consultants’, responsible parties’, subcontractors’ and sub-recipients’) premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.
22. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP’s Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

1. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail the Implementing Partner’s obligations under this Project Document.

Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

*Note:* The term “Project Document” as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

1. Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.
2. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
3. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled “Risk Management” are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled “Risk Management Standard Clauses” are included, *mutatis mutandis*, in all sub-contracts or sub-agreements entered into further to this Project Document.

# Mandatory Annexes

1. GEF Budget Template (available from BPPS NCE-VF)
2. Project Map and geospatial coordinates of the project area
3. Multiyear Workplan
4. Monitoring Plan
5. Social and Environmental Screening Procedure (SESP)
6. UNDP Atlas Risk Register
7. Overview of technical consultancies/subcontracts
8. Stakeholder Engagement Plan
9. Gender Analysis and Gender Action Plan
10. Procurement Plan – for first year of implementation especially
11. Letter of financial commitments
12. GEF Core indicators
13. GEF Taxonomy
14. [Partners Capacity Assessment Tool and HACT assessment](https://popp.undp.org/SitePages/POPPSubject.aspx?SBJID=452&Menu=BusinessUnit&Beta=0)
15. UNDP Project Quality Assurance Report (to be completed in UNDP online corporate planning system)

**Other Annexes**

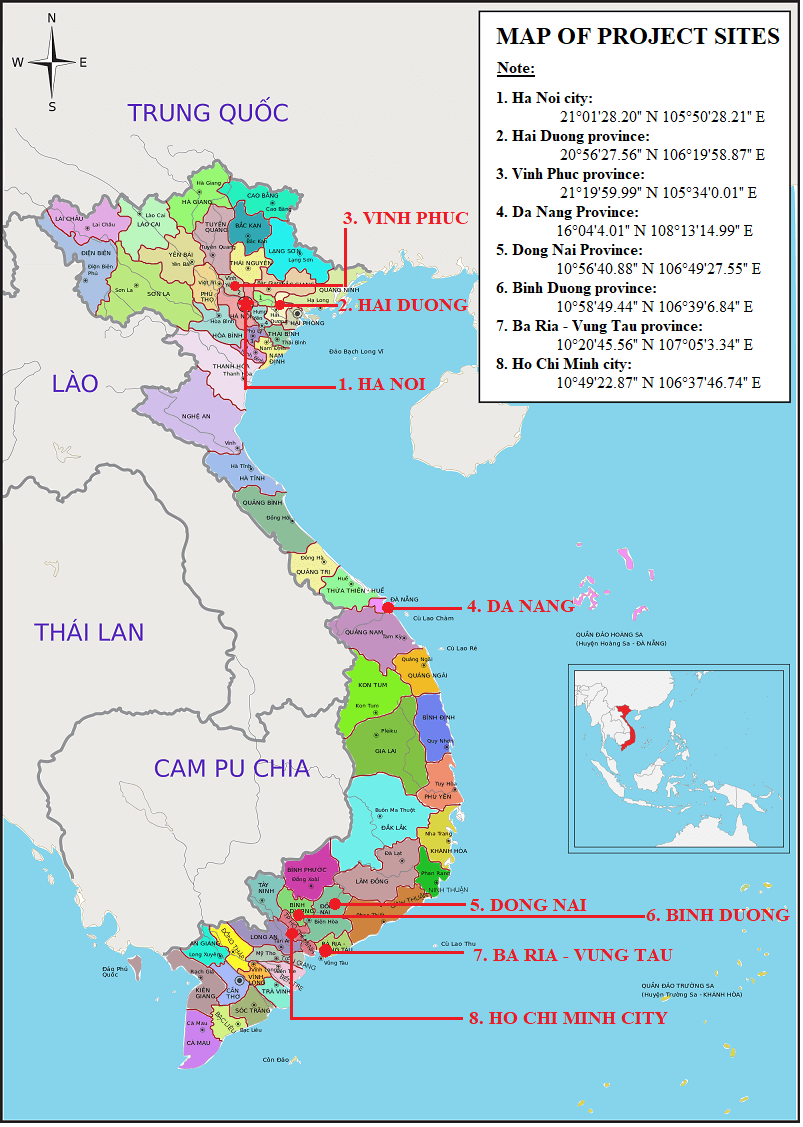
1. Green Financing in Vietnam
2. Cost of air pollution treatment technology for small enterprises in Vietnam

## Annex 1: GEF Budget Template

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Expenditure Category | Detailed Description | Component (USDeq.) | | | | | | | | | Total (USDeq.) | Responsible Entity |
|  |  | *Component 1: Promote sustainable production - consumption in key sectors through Ecolabeling, Green Financing and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors.* | | *Component 2: Lifecycle management of POP s and PTS containing products:* | | *Component 3: Mercury: lifecycle management of mercury containing products* | *Sub-Total* | *KM* | *M&E* | *PMC* |  | [(Executing Entity receiving funds from the GEF Agency)[1]](file:///C:\\Users\\carlo\\AppData\\Local\\Microsoft\\Windows\\INetCache\\Content.MSO\\FBEDFE6F.xlsx" \l "RANGE!B65) |
|  |  | *Outcome 1.1 Environmental regulation upgraded …* | *Outcome 1.2. Development of a Green Finance Framework…* | *Outcome 2.1 Sustainable manufacture and design …* | *Outcome 2.2 Closure of the gap between recyclers and industry …* | *Outcome 3.1 Replacement of mercury products …* |  |  |  |  |  |  |
| **Goods** | IC equipment |  |  |  |  |  |  |  |  | 15000 | 15000 |  |
| **Contractual Services – Individual** | Translation services | 13200 | 7200 | 66000 | 12000 | 15000 | 113400 |  |  |  | 113400 |  |
| **Contractual Services – Company** | Analytical lab services |  |  | 34000 | 16000 |  | 50000 |  |  |  | 50000 |  |
|  | Company/es to supply and install industrial equipment including technical assistance |  |  | 527510 |  |  | 527510 |  |  |  | 527510 |  |
|  | Company/es to supply and install Air Pollution Control System to reduce mercury and U-POPs including technical assistance |  |  | 606071 |  |  | 606071 |  |  |  | 606071 |  |
|  | companies to arrange and carry out 4 training events for trainers for representatives of 100 healthcare facilities |  |  |  |  | 40000 | 40000 |  |  |  | 40000 |  |
|  | Companies to arrange and carry out 4 training for trainers for representatives of 200 offices |  |  |  |  | 40000 | 40000 |  |  |  | 40000 |  |
|  | Company/es to replace 20,000 fluorescent lamp with LED and package replaced lamp pending disposal |  |  |  |  | 300000 | 300000 |  |  |  | 300000 |  |
|  | Company/es to replace10,000 mercury thermometer with electronic thermometer and package the replaced thermometers pending disposal |  |  |  |  | 250000 | 250000 |  |  |  | 250000 |  |
|  | A company to supply, install and demonstrate an equipment for the treatment of mercury containing waste and one to package and transport mercury waste to the disposal facility |  |  |  |  | 380000 | 380000 |  |  |  | 380000 |  |
|  | A firm to establish and maintain a project website, project database, publication and broadcasting of project materials |  |  |  |  |  | 0 | 25000 |  |  | 25000 |  |
|  | Professional services for financial audit |  |  |  |  |  | 0 |  | 10000 |  | 10000 |  |
| **International Consultants** | International consultant on Green Financing and Procurement |  | 81900 |  |  |  | 81900 |  |  |  | 81900 |  |
|  | International consultant on Gender Mainstreaming | 13000 | 9750 | 26000 |  | 3250 | 52000 |  |  |  | 52000 |  |
|  | International consultant on POPs | 14950 | 35750 |  |  |  | 50700 |  |  |  | 50700 |  |
|  | International consultant on Mercury | 29250 |  |  |  |  | 29250 |  |  |  | 29250 |  |
|  | International consultant on Environmental Regulation | 32500 |  |  |  |  | 32500 |  |  |  | 32500 |  |
|  | International consultant on Air Pollution Control Systems |  |  | 123500 |  |  | 123500 |  |  |  | 123500 |  |
|  | International consultant on POPs and mercury in manufacturing sector |  |  | 191100 |  |  | 191100 |  |  |  | 191100 |  |
|  | International consultant on POPs in waste and secondary materials |  |  |  | 22100 |  | 22100 |  |  |  | 22100 |  |
|  | International consultants on analytical methods for POPs |  |  |  | 9750 |  | 9750 |  |  |  | 9750 |  |
|  | International consultants on mercury and mercury waste |  |  |  |  | 83200 | 83200 |  |  |  | 83200 |  |
|  | International consultant on Inception, Monitoring & Evaluation |  |  |  |  |  | 0 |  | 57200 |  | 57200 |  |
|  | International consultant on Knowledge Management |  |  |  |  |  | 0 | 13000 |  |  | 13000 |  |
| **Local Consultants** | Local consultants on Green Financing and Procurement |  | 164000 |  |  |  | 164000 |  |  |  | 164000 |  |
|  | Local consultants on Gender Mainstreaming | 25000 | 6000 |  |  | 4000 | 35000 |  |  |  | 35000 |  |
|  | Local consultant on POPs | 28000 |  | 28000 |  |  | 56000 |  |  |  | 56000 |  |
|  | Local consultant on Mercury | 30800 |  |  |  |  | 30800 |  |  |  | 30800 |  |
|  | Local consultants on Environmental Regulation | 118000 |  |  |  |  | 118000 |  |  |  | 118000 |  |
|  | Local consultant on Air Pollution Control Systems |  |  | 91000 |  |  | 91000 |  |  |  | 91000 |  |
|  | Local consultant on POPs and mercury in manufacturing sector |  |  | 179000 |  |  | 179000 |  |  |  | 179000 |  |
|  | Local consultant on POPs in waste and secondary materials |  |  |  | 21000 |  | 21000 |  |  |  | 21000 |  |
|  | Local consultants on analytical methods for POPs |  |  |  | 6000 |  | 6000 |  |  |  | 6000 |  |
|  | Local consultants on mercury and mercury waste |  |  |  |  | 156400 | 156400 |  |  |  | 156400 |  |
|  | Local consultant on Inception, Monitoring & Evaluation (including monitoring of Gender Mainstreaming) |  |  |  |  |  | 0 |  | 63000 |  | 63000 |  |
|  | Local consultant on Knowledge Management |  |  |  |  |  | 0 |  | 42000 |  | 42000 |  |
| **Salary and benefits / Staff costs** | Project manager |  |  |  |  |  | 0 |  |  | 97359 | 97359 |  |
|  | Project assistants |  |  |  |  |  | 0 |  |  | 56610 | 56610 |  |
|  | Project accountant cum translator |  |  |  |  |  | 0 |  |  | 56610 | 56610 |  |
| **Trainings, Workshops, Meetings** | One small workshop on the draft law on new POPs | 1800 |  |  |  |  | 1800 |  |  |  | 1800 |  |
|  | One international workshop on the achievements related to regulation on new POPs and EPR | 14950 |  |  |  |  | 14950 |  |  |  | 14950 |  |
|  | Two consultation workshops on gender specific personal protection and risk management measures against exposure to mercury | 3600 |  |  |  |  | 3600 |  |  |  | 3600 |  |
|  | One international workshop on the launching of the Green Financing mechanism in Vietnam |  | 14950 |  |  |  | 14950 |  |  |  | 14950 |  |
|  | One national level workshop on to introduce the achievement of the piloting related to Green procurement |  | 14950 |  |  |  | 14950 |  |  |  | 14950 |  |
|  | One consultation workshop on green procurement and women entrepreneurships |  | 1800 |  |  |  | 1800 |  |  |  | 1800 |  |
|  | An international kick-off event on the launching of financial mechanism on POPs and mercury free design to enterprises, including design and implementation of APCS (output 2.1.3) |  |  | 14950 |  |  | 14950 |  |  |  | 14950 |  |
|  | An international event on the selection of industries awarded under the GF or their project on POPs avoidance or release reduction |  |  | 14950 |  |  | 14950 |  |  |  | 14950 |  |
|  | Two consultation workshops on gender specific aspects related to POPs in manufacturing processes and products. |  |  | 3600 |  |  | 3600 |  |  |  | 3600 |  |
|  | One consultation workshop among female workers and gender experts in the gap closure between recyclers and manufacturing industry |  |  |  | 1800 |  | 1800 |  |  |  | 1800 |  |
|  | Two training events on gender specific aspects related to risk prevention in waste management enterprises |  |  |  |  | 3600 | 3600 |  |  |  | 3600 |  |
|  | Two consultation workshops on gender specific aspects related to the elimination of POPs equipment and products in healthcare facilities and offices |  |  |  |  | 3600 | 3600 |  |  |  | 3600 |  |
|  | An international workshop on to summarize work, achievement and lesson learnt on the mercury component of the project |  |  |  |  | 14950 | 14950 |  |  |  | 14950 |  |
|  | Inception Workshop |  |  |  |  |  | 0 |  | 14950 |  | 14950 |  |
|  | Meetings of the Project Steering Committee |  |  |  |  |  |  |  | 12000 |  | 12000 |  |
| **Travel** | **National travel** | 17640 | 13440 | 29400 | 2940 | 14280 | 77700 |  | 9240 |  | 86940 |  |
|  | **International travel** | 15900 | 26500 | 37100 | 5300 |  | 84800 |  | 15900 |  | 100700 |  |
| **Grand Total** |  | 358590 | 376240 | 1972181 | 96890 | 1308280 | 4112181 | 38000 | 224290 | 225579 | 4600050 |  |

## Annex 2: Project map and Geospatial Coordinates of project sites

Any maps included in this project document must conform to maps accepted by the UN Cartographic Unit (see <https://www.un.org/Depts/Cartographic/english/htmain.htm>)



## Annex 3: Multi Year Work Plan

|  |  |  | Year 1 | | | | Year 2 | | | | Year 3 | | | | Year 4 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Component 1: Promote sustainable production -consumption in key sectors through Ecolabeling, Green Financing and Procurement, and other elements to support a long-term Innovation Ecosystem for greening the value and supply chain across sectors. | 1.1 Environmental regulation upgraded to include new POPs; Ecolabel and related policies on POPs and mercury lifecycle management developed and implemented. (Note: original PIF’s Outcome 1.1 and 1.2 merged together to fulfil UNDP template requirements) | Output 1.1.1 Review, amendment of existing, or creation of new legislation related to POPs … |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Output 1.1.2 Roadmap and sectorial plans developed for replacement of mercury thermometers and mercury containing lamps established |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Output 1.1.3. Review of the existing legislation related to mercury |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Outcome 1.2. Development of a Green Finance Framework, to sustain the shifting of enterprises toward a non-POPs and a non-Mercury manufacturing | Output 1.2.1 Green Finance framework designed, funded and implemented |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Output 1.2.2 Green Procurement scheme designed and implemented |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Component 2: Life cycle management of POPs and PTS containing products. | Outcome 2.1 Sustainable manufacture and design of plastic, polymers, paint, metal finishing and other products improved to prevent the use of POP and the release of POP in the environment. | 2.1.1. Analysis of the manufacturing sectors for which the use of new POPs has been recently confirmed |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.1.2 Alternative product design to prevent the use of hazardous chemicals |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2.1.3 Design and implementation of modern Air Pollution Control Systems |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Outcome 2.2 Closure of the gap between recyclers and industry to sustain circular economy and to prevent the contamination of recyclable materials. | 2.2.1 Interaction, technical exchange and commercial agreement between recyclers and industry |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Component 3: Mercury lifecycle management of mercury containing products | Outcome 3.1 Replacement of mercury products with non-mercury products promoted and sustained by EPR schemes and EOL management. | 3.1.1. Risk management, technical guidance and training materials developed |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.1.2. Capacity and institutions are strengthened to eliminate use of mercury containing products |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.1.3 Technologies for the recycling of mercury containing equipment with segregation and storage of mercury established |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Component 4. Monitoring and Evaluation | Outcome 4.1 Project management team established, lesson learnt and knowledge generated by the project properly shared and communicated. | 4.1.1 Project inception and inception report carried out |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.1.2 Project steering committee and project management unit established |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.1.3 Knowledge management system including project website established |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Outcome 4.2 Project monitoring, evaluation and audit carried out in compliance with GEF, UNDP and GoV standards | 4.2.1. Project and its activities monitored and evaluated on a periodic basis in line with GEF, UNDP and government requirements. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 4.2.2 Indicators established to facilitate successful project implementation and sound impact assessment. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Annex 4: Monitoring Plan

This Monitoring Plan and the M&E Plan and Budget in Section VI of this project document will both guide monitoring and evaluation at the project level for the duration of project implementation.

| Monitoring | Indicators | Targets | Description of indicators and targets | Data source/Collection Methods**[[26]](#footnote-27)** | Frequency | Responsible for data collection | Means of verification | Risks/Assumptions |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Project objective from the results framework | **Indicator 1**  Number of people (F/M) participating in training and awareness raising activities, benefitting from green financial incentives, or from project-related job opportunities. | 2,000/1,500 | An average of 10 staff for each firm benefitting from incentive, assuming at least 20 firms; 10 training of trainers involving at least 10 trainees and a total audience of not less than 1000 medical staff; an average proportion F/M of 50/50 | The data for enterprises will be gathered through the application process and dedicated surveys.  Pre and post training tests will be carried out. Training report and attendance sheet with test scores | Annually and after every event.  Reported in DO tab of the GEF PIR | Project Management Unit | workshop report  National statistics report | Risk: training participant and firm applying to incentives below the expectations.  Assumptions: target value are reasonable estimate: 20 firms successfully applying to incentives and 10 healthcare facilities training can be achieved within project timeline with a good planning. |
| **Indicator 2**  Number of people (F/M) benefitting from reduced exposure to mercury, POPs or U-POPs . | 800,000/800,000 | See detailed explanation in Global Environmental Benefits chapter | Counting non-mercury equipment purchased and replaced; analysis of projects submitted by enterprises and verification of their performance through sampling and analysis or mass-balance estimation, exposure models to calculate number of persons impacted. | Yearly | Project Management Unit, Consultant / Experts-- | Technical reports, analytical reports, proof of purchase of non-mercury equipment, dispersion modelling | The reduction of POPs and mercury usage and release are reasonable, however there is an obvious risk that in case the expected reduction won’t be achieved, this will also result in reduced benefit for the population. The assumption of people exposure (see GEB chapter for details) are preliminary and will be better detailed in the course of project implementation. |
| **Indicator 3** Direct or indirect reduction of new POPs: | 35 tons | See detailed explanation in Global Environmental Benefits chapter | Mass balance analysis of manufacturing processes, proof of purchase of chemicals, | Each 6 months after the first 2 years | Project Management Unit, Consultant / Experts-- | Technical reports, analytical reports, enterprise’s applications for incentives | The reduction of POPs is reasonable but would require a significant effort from enterprises in providing accurate and transparent information and committing for the phase out of POPs.  The risk of data inaccuracy or incompleteness does exist but it is assumed that with the proper assistance and communication this can be partially addressed. |
| Indicator 4  Mercury releases reduced. | 648 kg of mercury emission avoided, 10,000 thermometers and 20,000 mercury lamps replaced | See detailed explanation in Global Environmental Benefits chapter | Proof of purchase of non-mercury equipment + reports providing certification of proper replacement and disposal.  Design and testing results of APCS installed. | Each 6 months after the first 2 years | Project Management Unit,  Consultants / Experts | Technical reports, analytical reports, random surveys, | It is assumed that the number of thermometers and mercury lamp can be achieved with a moderate but well-planned effort.  There are no significant risks on this target. Proper management of the replaced equipment has to be ensured. |
| **Indicator 5**  U-POPs releases reduced. | 2gTeq/yr | See detailed explanation in Global Environmental Benefits chapter | Design and testing results of APCS installed. | Each 6 months after the first 2 years | Project Management Unit,  Consultants / Experts | Technical reports, analytical reports, random surveys, | The APCS technology for reducing U-POPs from industrial emission is readily available therefore it is assumed there would be no technical difficulties in achieving this target. The risk associated with the cost of the technology has to be monitored during project implementation as this could affect the amount of co-financing needed from the side of enterprises. |
| Project Outcome 1 | Indicator 6  number of environmental regulation upgraded / enacted. | 2 New regulations | One environmental regulation concerning new POPs drafted an enacted; One environmental regulation one environmental regulation concerning ecolabel drafted and enacted | Meeting minutes, technical and legal report on the new regulations proposed, official governmental acts including publications on national bulletins | yearly | Project Management Unit,  Consultants / Experts | Meeting and workshop minutes, technical reports | In previous projects Vietnam has been successful in endorsing environmental regulations within the project duration. The targets are in line with the national policies therefore it is assumed that these will be achieved. The risk of late approval of the regulation (after project closure) however does exist but would not preclude the project to achieve its technical targets. |
| **Indicator 7**  Number of policies on POPs and mercury lifecycle drafted and enacted | 2 Policies / Roadmaps | One policy on the lifecycle of POPs containing products, one policy on the lifecycle management of mercury containing products drafted an enacted. | Meeting minutes, technical and legal report on the new policies proposed, official governmental acts including publications on national bulletins | Yearly | Project Management Unit,  Consultants / Experts | Meeting and workshop minutes, technical reports | The targets are in line with the national policies therefore it is assumed that these will be achieved, The risk of late approval of the policies is minimal as the approval of a policy/roadmap is an internal ministerial act. |
| Project Outcome 2 | **Indicator 8** Size of green financing mechanism in place | 5,000,000 | One green financing mechanism with a fund size of 5,000,000 USD fully subscribed | The financial reports of the financing institution will be examined with reference to budget interest rate and eligibility criteria. Applications submitted and approved will be also verified | Each six months after the first year | Project Management Unit,  Financing institutions  Consultants / Experts | Financial report of the financing institutions.  Technical and financial sections of the approved applications | It is assumed that the financing benefits, the new regulatory framework and the assistance provided by the project. will be effective in assisting and motivating enterprises to apply for incentives. The risk of financing budget not completely subscribed will be minimized through continuous communication of the technical and financial benefits and technical assistance to the applicants. |
| **Indicator 9** Number of ecolabel system and green procurement in place | One ecolabel system  One green procurement system | One Ecolabel system including requirements for POPs and mercury content developed and approved for at least 10 product categories, with at least 5 industries certified.  One Green procurement policy developed, approved and implemented with at least 100,000 USD of green products purchased. | Meeting minutes, technical and legal report on the new ecolabel and green procurement system proposed, official governmental acts including publications on national bulletins | Yearly | Project Management Unit,  Financing institutions  Consultants / Experts | Meeting and workshop minutes, draft and final version of the ecolabel and green procurement rules, | Vietnam is already familiar with ecolabel schemes therefore it is assumed that lesson learnt from existing schemes could facilitate the creation of a new scheme which include POPs. The green procurement scheme will be initially piloted through implementation in DONREs and MONRE. Involvement of stakeholders in the designing of such schemes will minimize the risk of their reduced effectiveness or competitiveness |
| Project Outcome 3 | Indicator 10  Number of manufacturing sectors joining the knowledge network | One knowledge network joined by at least 2 sectors | A knowledge network established among manufacturing sectors with at least 2 sectors to be selected based on the result of a survey. | Survey report aimed at the selection of sectors to join the knowledge network will be established.  Workshop and meeting minutes will be assessed. Materials shared through the knowledge network and web-based tools will be verified and assessed. | Yearly | Project Management Unit, Communication experts, UNDP CO | Technical report, meeting and workshop minutes, web-based materials | There are no significant risks associated to the achievement of this indicator.  It is assumed that involvement of stakeholders as well as national and international experts will ensure good quality of this outcome |
| **Indicator 11** Number of air pollution control systems designed and installed at industrial facilities. | 1x106 Nm3/h capacity of installed system | Air pollution control systems designed and installed for an overall amount of 1×106 Nm3/h of flue gas treated. | Design and testing results of APCS installed. | Each 6 months after the first 2 years | Project Management Unit,  Consultants / Experts | Technical reports, analytical reports, site surveys. | The APCS technology for reducing U-POPs and mercury from industrial emission is readily available therefore it is assumed there would be no technical difficulties in achieving this target. The risk associated with the cost of the technology has to be monitored during project implementation as this could affect the amount of co-financing needed from the side of enterprises. |
| Project Outcome 4 | **Indicator 12** Number of implementations of reuse, up-cycling, recycling established | Total of 4 full size implementations  (MAYBE THIS TARGET IS TOO LOW TO ACHIEVE THE DESIRED TARGET) | At least four implementation carried out for reuse, upcycling, recycling of products or materials. | Implementation plans will be assessed. Survey will be carried out at implementation sites. Mass balance, operational, technical and analytical report to verify the amount of POP/mercury prevented will be carried out. | Yearly | Project Management Unit,  Consultants / Experts | Technical reports, analytical reports, site surveys. | It is assumed that through technical support and green financing the number of full size implementations will exceed the target.  The risk of selecting low-impact cases has to be prevented through a careful examination of the application with the support of national and international experts. |
| **Indicator 13** Number of take back schemes designed and piloted for product or product components. | One take back scheme | At least one take back scheme demonstrated entailing prevention of POPs or mercury in the manufacturing chain or their release in the environment | The implementation plan of take back schemes will be assessed including mass balance of POP and Mercury. site surveys will be carried out | Yearly | Project Management Unit,  Consultants / Experts | Technical reports, analytical reports, site surveys. | Demonstration of a new take-back scheme is an innovative activity to prevent POPs in the supply chain. The risk of implementing a low-impact scheme will be prevented through extended exchange with relevant enterprises and other stakeholders. Principles for designing and selecting a take back scheme to be established at an early stage. |
| Project Outcome 5 | **Indicator 14** Number of medical devices containing mercury replaced with non-mercury devices | 10,000 | At least 10,000 Mercury containing thermometers replaced with non- Mercury thermometers | The assessment will entail proof of purchase, evidence of replacement, evidence of environmentally sound disposal | Each six months after the first 2 years | Project Management Unit,  Consultants / Experts | The assessment will entail proof of purchase, evidence of replacement, evidence of environmentally sound disposal | It is assumed that the procurement of the equipment will be completed without major issues. The risk related to the missed replacement or improper disposal of the replaced devices, has to prevented by ensuring that the beneficiaries are committed to replace mercury devices and to cooperate with the project on the ESM disposal of the EOL mercury equipment. |
| **Indicator 15** Number of Mercury containing lamps replaced with no Mercury lamps | 20,000 led lamps | At least 20,000 Mercury containing lamps replaced with non- Mercury lamps | The assessment will entail proof of purchase, evidence of replacement, evidence of environmentally sound disposal | Each six months after the first 2 years | Project Management Unit,  Consultants / Experts | The assessment will entail proof of purchase, evidence of replacement, evidence of environmentally sound disposal | It is assumed that the procurement of the non mercury lamps will be completed without major issues. The risk related to the missed replacement or improper disposal of the replaced devices, has to prevented by ensuring that the beneficiaries are committed to replace mercury lamps and to coordinate with the project on the ESM disposal of the EOL mercury equipment. |
| Project Outcome 6 | **Indicator 16** Number of technical guidance made available and training on mercury performed. | 1 set of technical guidance  10 ToT delivered | At least 1 set of technical guidance and 10 training package delivered in Training of Trainers events for healthcare facilities involving at 10 ToT events with 20 trainers trained, and subsequently at least 1000 trainees from 10 facilities. | Participation in workshops, verification of the technical guidance | Yearly | Project Management Unit,  Consultants / Experts | Training materials, pre and post training tests, training reports, training attendance sheets, copy of training certificates | UNDP has a significant experience in carrying out training on mercury aspects, therefore it is assumed that the target will be achieved without major issues.  The risk of low quality training is also prevented through the technical assistance provided by UNDP sector experts. |
| **Indicator 17** Number of facilities for the recycling and disposal of Mercury containing devices and waste established | One facility | At least one facility for the storage and disposal of mercury containing devices established | Assessment of the Preliminary and final design of the facility. Participation in workshops and meeting. Technical reports and site survey minutes | Yearly | Project Management Unit,  Consultants / Experts | Preliminary and final design of the facility.  Bidding documents  Site Survey reports | The technologies for the safe storage of mercury and the recycling of mercury containing devices are commercially available therefore no procurement risk is expected. Risk of delay due to potential NIMBY effect to be prevented by a proper awareness raising campaign |
| Project Outcome 7 | **Indicator 18** Number of project staff appointed (F/M) | PMU Staff  PSC members  NC  IC | Project management institutions established with an equal F/M ratio. | Verification of TORs, contracts and compliance with gender balance criteria | At inception and then Yearly | UNDP CO  GM expert  Evaluation experts  Implementing Partner | TORs, contracts, GM criteria | Different staff may be required at different stage of project implementation. Risk of imbalanced gender selection of staff to be prevented by involving GM experts in the selection. |
| **Indicator 19** Number of lessons and best practices learn and shared by the project management team | At least 3 lesson learnt and 3 best practices identified and shared. | Both the Project Steering Committee and the Project Management Unit to report on the experience gathered for each of the 3 project technical components in international workshop including gender mainstreaming aspects. | PIRs, PPRs, technical reports, workshop and meeting minutes, interviews. | Mid term and end of project | Project Management Unit, Project Steering Committee,  UNDP CO, technical and evaluation experts | PIRs, PPRs, technical reports, workshop and meeting minutes, interviews. | No specific risk envisaged for the achievement of this target.  It is assumed that the involvement of project technical and management staff will allow for the identification of meaningful examples |
| Project Outcome 8 | **Indicator 20** Number of evaluation and audit completed and properly reflected in project management. | 1+1+4 | One mid term review, one terminal evaluation completed.  One financial audit carried out yearly | Assessment of the MTR and TER to be integrated in the management responses. UNDP evaluation unit to assess quality of MTR and TER. | Yearly, mid term and end of project | UNDP HQ  Project Steering committee | MTR  TER  Audit reports | No specific risk envisaged for achieving this task, due to the familiarity of the implementing partner and UNDP CO on this procedure. It is assumed that the selection of experienced auditors and evaluators will allow for the preparation of high quality reports |
| **Indicator 21** Number of management report approved. | 1 IR  4 PIRs  4 PPRs  4 PW  1 TPR | At least one PIR per year drafted and approved.  Annual Project reports drafted and approved  Annual Project Workplan drafted and approved  Final project report drafted and approved | All the management report to be stored in an online project repository for the continuous consultation by technical and management staff.  All the technical report to be left open to comments for at least 2 months.11 | At inception  Yearly  At completion | Project Management Unit  UNDP CO | Inception report  Project Implementation reports  Project Progress Reports  Project Workplans  Project Terminal reports | No specific risk envisaged for achieving this task, due to the familiarity of the implementing partner and UNDP CO on this procedure.  To ensure high quality of the deliverable, both management staff and technical expert need to be involved in the drafting and review of the reports. |
| Add indicators included in gender action plan, stakeholder engagement plan or other monitoring plans as needed. | | | | | | | | | |

## Annex 5: UNDP Social and Environmental Screening Procedure (SESP)

Attached as a separate file

Annex 6: UNDP Risk Register

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Risk Description*** | ***Impact and Likelihood (1-5)*** | ***Significance***  ***(Low, Moderate Substantial, High)*** | ***Risk Category*** | ***Description of assessment and management measures for risks rated as Moderate, Substantial or High*** | ***Risk owner*** |
| **Risk 1: Loss of opportunity for workers in the recycling sector who are not included in the project activities**  *Workers in the recycling sector who may have been excluded from participating in activities – or who have been excluded due to structural hierarchies in the community - aimed at improved practices because may become marginalized which leads to loss of opportunity to improve their income.* | |  | | --- | | I = 4 | | L = 1 | |  | |  | |  | |  | |  | | **Low** | Social  Human Rights: P4, P5  Gender Equality and Women’s Empowerment: P10 | According to the Vietnam legal regulations, hazardous waste must be specially managed. All companies wishing to participate in hazardous waste treatment must be licensed by the Ministry of Natural Resources and Environment. Collection, treatment or recycling hazardous mercury and POPs waste must also comply with strict regulations. Thus, we can confirm that indigenous people and/or poor people/women will not have the possibility to work spontaneously in the collection and recycling activities.  **Mitigation/Management Measures (by Project Design)**  The project will facilitate the work of recyclers by establishing a network and marketplace with manufacturers that may use recycled materials. Promote interaction, technical exchange and commercial agreement between recyclers and industry will bring new opportunities to recyclers and their workers in terms of job creation and sources of income (Outcome 2.2). Therefore, it may be envisaged that compared to the baseline, there will be a social and economic benefit for workers in that area. In other words, the project will promote the realization of the entitlements of recycling workers, even in cases where they are not directly involved in project activities. | MONRE  /MOIT |
| **Risk 2: Risk of accidental release of hazardous substances during transport between facilities, storage, export for disposal and testing of substances***.*  *Transport, storage and disposal operations for mercury thermometers, phased-out fluorescent lamps, amalgams and APC filters may pose potential human and ecosystem health risks, whether to workers or the wider community or to the local environment due to accidental release or spills.* | I = 4  L = 2 | **Moderate** | Health and Environment  Standard 3: Community Health, Safety and Security,  - Standard 8: Pollution Prevention and Resource Efficiency, | The core objective of the project is to reduce the social, health and environmental risks in transport, storage, use and release of POPs and mercury containing equipment.  The Facilities doing transportation, storage and handling of hazardous chemical must comply with Environmental Protection Law and Circular 36/2015/TT-BTNMT on hazardous waste management, which is very strict and require licence with lots of prevention measure, certificates to workers when dealing with hazardous waste.  ***Mitigation/Management Measures: (partially addressed by Project Design, partially to be addressed by planned ESMP)***  The project will:   * Establish technologies for the recycling of mercury containing equipment with segregation and storage of mercury established; * Develop risk management, technical guidance and training materials for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury lamps and medical devices (Output 3.1.1 and 3.1.2); * Identify requirements for the storage facilities in order to minimize the risk. * The project will still identify the storage/interim disposal facility. That facility will abide to national legislation, and the guidelines of SC and Minamata in terms of risk management for flooding and storage will be selection criterion * **Carry out a target ESMP to minimize this risk.** | MONRE |
| **Risk 3: Loss of income to small and medium sized industries due to banning of imports or restricting the use of certain chemicals**  *As restrictions on the use and import of POP chemicals not yet regulated (like PFOS and SCCP) will be enacted, some small and medium-sized industries may experience challenges in finding affordable alternatives and hence find their income/revenue affected.* | I = 2  L = 2 | **Low** | **Environmental**  - Standard 8: Pollution Prevention and Resource Efficiency, | POPs chemicals targeted in this project will be banned as a consequence of the enforcement of the Stockholm Convention and Vietnam Prime Minister’s Decision No. 1598/QD-TTg dated October 17, 2017 on the Promulgation of the National Plan for the Implementation of the Stockholm Convention on POPs to 2025, with a Vision to 2030 (baseline project).  The project intends to mitigate the financial impact of the Convention implementation mitigating this risk for the enterprises compared to the baseline.  ***Mitigation/Management Measures: (by Project design)***   * The project will engage all stakeholders to identify win-win design or engineering solutions aimed at reducing the need for chemicals whose uses will be restricted and finding affordable and effective alternatives for chemicals that will be banned; * A specific category of “eco-labelled products” will be identified so the design, manufacturing and placing on the market of products fulfilling the labelling requirements will be eligible under the green-financing mechanism that will be developed under the project. * The Project will also engage with the government to see if additional support or conversion financing can be made available to such companies. * A roadmap for banning of imports or restricting the use of certain chemicals will be introduced through a clearly identified timeline, which is agreed by stakeholders. | MONRE / MOIT |
| **Risk 4: Pollution risk from operation of the mercury treatment and storage facilities for fluorescent lightbulbs and mercury amalgam stockpile**  *Accidental release of mercury from treatment and storage facilities risks the health of workers and the local community and may pollute the natural environment including any nearby water bodies.* | I = 4  L = 2 | **Moderate** | **Environmental and Health**  - Standard 3: Community Health, Safety and Security,  - Standard 8: Pollution Prevention and Resource Efficiency, | Currently, the baseline risk of exposure to mercury is very high, as people in hospitals, households or offices are frequently exposed to the mercury released from broken lamps or thermometers.  The project intends first of all to reduce that baseline risk by demonstrating the safe replacement of mercury lamps and thermometers, training people on how to handle mercury spillage, as well as safely removing and disposing a substantial amount of this equipment.  Considering the toxic features of mercury, even if the project implementation will reduce the baseline risk, it is considered that this event should be classified as “Moderate”.  ***Mitigation/Management Measures: (partially addressed by Project Design, partially to be addressed by planned ESMP)***   * Outcome 3.1., Output 3.1.3: Ensure tendering process to select qualified waste management companies. Set clear criteria to the tender process to ensure only companies (international and local) with strong track records of success will be invited. The project will implement treatment and storage activities with formally established enterprises in big cities, or with state owned waste managers who are licensed and have many years of experience in handling hazardous waste, including mercury treatment. (for example, URENCO 10, 11 in the suburban areas of Hanoi and Ho Chi Minh City); * The project’s financial and technical support will be conditioned to specific eligibility criteria that meet international and national standards on waste handling and destruction, which will ensure that only the highest performance standards will be considered; * Develop Risk Management Strategy, technical guidance and training materials for the sound management of mercury stockpiles and obsolete mercury-containing equipment, with specific reference to mercury lamps and medical devices; * Monitoring and evaluation will be conducted to ensure that enterprises and workers are conducting their work under safe conditions. * Identify requirements for the treatment and storage facilities; the guidelines of SC and Minamata in terms of risk management for flooding and storage will be selection criterion. * **Carry out a target ESMP to minimize this risk.** | MONRE |
| **Risk 5: Risk of flooding of mercury treatment and storage facilities**  *Increased weather events due to climate change will increase the risk of flooding of mercury treatment and storage facilities.*  **Related to risks:**  Standard 2: Climate Change and Disaster Risks, Question 2 | I = 4  L = 1 | **Low** | **Climate Change**  UNDP Standard 2: Climate Change and Disaster Risks, | Vietnam is a country that is likely to be greatly affected by climate change, sea level rise and extreme weather events. The country has issued and implemented a National Strategy and National Action Plan to Respond to Climate Change.  Mercury treatment and storage facilities are mostly located in industrial zone in the suburban areas of big cities such as Hanoi, Ho Chi Minh City and delta areas far from the sea, where the impact of climate change, sea level rise and other extreme weather events are not as severe as in other parts of the country and many climate change adaptation solutions have been implemented. This helps reduce the risk of flooding of mercury treatment and storage facilities.  As part of the risk assessment that will be undertaken, the project will ensure that the interim storage facilities at the selected enterprises (Output 2.1.1, Output 3.1.1, Output 3.1.3) are referring to the Minamata Convention’s Guidelines [on the environmentally sound interim storage of mercury](http://www.mercuryconvention.org/Portals/11/documents/forms-guidance/English/Guidelines_Environmentally-sound-interim-storage_Nov2018.pdf)  ***Mitigation/Management Measures: (by project design)***   * Take into consideration flood risks when locating and designing the mercury treatment and storage facilities to minimise the risk of inundation (Output 3.1.1 and 3.1.3); * Engage with national/ local government to ensure specific climate response measures are enforced in this area; * Ensure that mercury treatment and storage facilities are designed for more intense/ violent storms, heavier flooding etc., and develop rigorous guidance for climate-related risk management for such facilities; * Require facilities to organise practice runs to deal with extreme flooding and storm incidences. | MONRE |
| **Risk 6: Health and safety risk for the workers at the mercury treatment and storage facilities**  *This could workers do not abide by a safety protocol and use the essential personal protective equipment (PPE) appropriate for the work they perform. In addition, health and safety of workers may be impacted during construction of the treatment facility if proper measures are not implemented including wearing PPE.* | I = 4  L = 2 | **Moderate** | **Health**  - Standard 7: Labour and Working Conditions, Question 6 | The project will be implemented with formally established and licensed enterprises and will not carry out construction of the treatment facility. The enterprises, for example urban environment companies in industrial zone in the suburban areas of big cities like Hanoi and Ho Chi Minh City (URENCO 10, 11) have many years of experience in handling hazardous waste, including mercury treatment. The regulations on health and working environment are strictly implemented in these companies, and there have been no incidents affecting the health of workers reported so far.  ***Mitigation/Management Measures (by Project Design)***   * Implement treatment and storage activities with formally established enterprises in big cities, or with state owned waste managers who are licensed (for example, URENCO 10, 11 as indicated above) (Outcome 3.1); * Carry out design and implementation of modern Air Pollution Control Systems to prevent the release of mercury and U-POPs suitable also for small enterprises; (Output 2.1.3) * Relevant technical guidelines on operational safety procedures for hazardous chemicals waste handling, transport, storage and disposal in accordance with international practice will be adopted during the first and second year of implementation (Output 3.1.1); * Training program involves provision of the necessary operational and safeguards exercise to the staff that are to be directly involved in the work on the treatment and storage area (Outputs 3.1.1, 3.1.2 and 3.1.3).; * Monitoring and evaluation will be conducted to ensure that enterprises and workers are conducting their work under safe conditions (Outcome 4.2 and also technical supervision activities carried out under Output 2.1.2 – activities. 2.1.2.3 and 2.1.2.4 and 2.1.3 – activities. 2.1.3.3 and 2.1.3.4) | MOH / DOH MONRE |
| **Risk 7: Continued exposure of recyclers to POPs containing material**  *Recycling workers who participate in the project may continue to be at risk of exposure to POPs and may not be wearing appropriate PPE.* | I = 4  L = 1 | **Low** | **Health**  - Standard 3: Community Health, Safety and Security,  - Standard 7: Labour and Working Conditions, | The project will reduce the transport, storage, use and release of POPs. There is zero or negative additional risk of exposure of recyclers to POPs containing materials as the project indeed will reduce the amount of POPs containing materials.  Through other recent chemical projects implemented in Vietnam, the awareness on POP and hazardous chemicals has been significantly raised, work safety and chemical incident control guidelines has been endorsed by the Government at the Decree 113/2017/ND-CP and require all chemical companies to abide.  For this reason, this risk event has to be considered LOW.  ***Risk mitigation/management measures (by Project Design):***   * However, to reduce further the risk of exposure to POPs containing waste, the project will include awareness raising initiatives and training specifically tailored to inform and equip both formal and informal worker with the Risk Management Measures to be adopted when dealing with such kind of waste, including the identification of waste material potentially contaminated by POPs, the properly use of PPE, norms related to the management of non-recyclable material to prevent open burning of waste which may generate U-POPs (dioxins). * Furthermore, monitoring and evaluation will be conducted to ensure that recycling workers are conducting their work under safe conditions. | MOH / MONRE |
| **Risk 8: Participation of minors in hazardous activities**  *If not specifically addressed, persons below 18 years of age in the recycling industry may be engaged in hazardous work, which is classified as “worst forms of child labour”. In addition, persons younger than 15 years old may also be employed or allowed to work in these sectors.* | I = 4  L = 2 | **Moderate** | Health  - Standard 7: Labour and Working Conditions, Question 3 | Following the Vietnam’s Labor Law, the Children's Law and all documents guiding the implementation, it is forbidden to use workers under 18 and child labor in all activities of producing, using or transporting chemicals. Furthermore, Circular 36/TT-BTMTMT on hazadous waste management not only requires a licence for companies dealing with hazadous waste, but also requires workers in the company must obtain proper certificates. This requirement ensure that child labour will not be employed in hazadous waste activities. The risk is rated medium.  **Risk mitigation/management measures (partially addressed by Project Design, partially to be addressed by Planned ESMP):**   * The project will only engage with companies, cooperatives, associations and/or similar CSO institutions fully compliant to local laws: the Labor Law (2019), the Children's Law (2016) and all documents guiding the implementation clearly stipulate the employment of workers under the age of 18 as well as child labor under the age of 15. Accordingly, it is forbidden to use workers under 18 and child labor in all activities of producing, using or transporting chemicals (Labor Law, (Article 147). * The Project will only engage to companies that are licensed following the Circular 36/TT-BTMTMT on hazadous waste management. * Except for awareness raising actions (which indeed will be also aimed at preventing child employment), the project will not conduct any direct activity with informal operators. * **Additional mitigation measures in the engagement activities with the stakeholders under the Outcome 2.1 and 3.1 will be managed through the ESMP.** |  |
| **Risk 9: Duty-bearers do not have the capacity to meet their obligations in the project**  *Banks and financial institutions may be unwilling and not having adequate competence in establishing green financial mechanisms for mercury and POPs reduction activities. These organizations may lack understanding, so can be confusing to define green criteria when making financial supports to businesses.* | I = 3  L = 1 | **Low** | Human rights | Vietnam has the initial base to implement the objective of the project in development Green Financing mechanism to minimize the use and the release of POPs, new POPs and Mercury throughout the entire lifecycle in key industrial sectors.  VEPF and some banks (BIDV, SacomBank...) have many years of experience in implementing green credit activities.  ***Mitigation/Management Measures (by Project Design):***   * A consultation meeting with banks and financial institutions be held during the development of the project document to engage their participation. Commitment has been already achieved with VEPF. * Training, communication and development of eligibility criteria for the application to the Green Financing mechanism will be carried out within the framework of this Project to support banks and financial institutions. In the first stage, Green Financing mechanism will be partially supported with GEF grant. | MONRE / MOIT / beneficiary enterprises |
| **Risk 10: The Project includes activities that require significant consumption of raw materials, energy, water…** | I = 2  L = 2 | **Low** | Environmental  - Standard 8: Pollution Prevention and Resource Efficiency, | Very rarely, the shifting from POPs to non-POP manufacturing could lead to an increase in the energy, water or resource needs. Based on experience on previous project in Vietnam, thatoccurred only in the first stage of POPs replacement, whilst once consolidate, even energy and water consumption were reduced (Monitoring report of the Green Chemistry demonstration facilities in Vietnam).Therefore, POP reduction will be usually accompanied by the saving of energy and resources. For cautelative purposes, this event is however included in the risk assessment , although classified as Low.  ***Mitigation/Management Measures (by project design):***   * Integrate training and practice activities on saving and (resource) efficient consumption of raw materials, energy, and water. | MONRE |
| **Risk 11: The COVID-19 Pandemic may inhibit the smooth implementation of this project, especially the sharing of the foreign experiences** | I = 2  L = 2 | **Low** | Operational  Health | Vietnam Government at different levels has taken measures to prevent COVID-19, including recent widespread vaccination in the country. The last wave of COVID-19 during July – September 2021 provided lots of experience to the Vietnam Government and counterparts in coping with difficult situation, improving its resilience and agility to adapt to different context.  The project plans to carry out continuous monitoring and assessment of the impact of COVID-19 on the progress of project implementation and undertake appropriate adaptive management. Project management and implementation supervision can be undertaken through various means such as online and telephone interactions, international experiences may be shared through web seminars. | MONRE |
| **Risk 12: Organizational structure changed at the Project Owner (Vietnam Environment Administration)** | I = 1  L = 3 |  | Operational | The new Vietnam Prime Minister introduce a new directive, in which the government is planning to reduce the number of government entities in ministries. This can result in the change of organizational structure in some ministries, agencies including Vietnam Environment Administration. Such any re-arrangement of structure could lead to delay in project implementation.  UNDP will keep monitoring the process closely, and share this risk to Project Steering Committee led by the Vice Minister of MONRE, to ensure the smooth continuation of the project if the organizational structure changed happens. | MONRE |

## Annex 7: Overview of Project Staff and Technical Consultancies

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |
| For Project Management | | |
| Local / National contracting | | |
| Project Manager | 4 years + 3 months at 1909 USD/month | The Project Manager (PM), together with the Lead Technical Advisor will be responsible for the overall management of the project, including the mobilization of all project inputs, supervision over project staff, consultants and sub-contractors.  Duties and Responsibilities   * Manage the overall conduct of the project. * Plan the activities of the project and monitor progress against the approved workplan. * Execute activities by managing personnel, goods and services, training and low-value grants, including drafting terms of reference and work specifications, and overseeing all contractors’ work. * Monitor events as determined in the project monitoring plan, and update the plan as required. * Provide support for completion of assessments required by UNDP, spot checks and audits. * Manage requests for the provision of UNDP financial resources through funding advances, direct payments or reimbursement using the FACE form. * Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports. * Monitor progress, watch for plan deviations and make course corrections when needed within project board-agreed tolerances to achieve results. * Ensure that changes are controlled and problems addressed. * Perform regular progress reporting to the project board as agreed with the board, including measures to address challenges and opportunities. * Prepare and submit financial reports to UNDP on a quarterly basis. * Manage and monitor the project risks – including social and environmental risks - initially identified and submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log; * Capture lessons learned during project implementation. * Prepare revisions to the multi-year workplan, as needed, as well as annual and quarterly plans if required. * Prepare the inception report no later than one month after the inception workshop. * Ensure that the indicators included in the project results framework are monitored annually in advance of the GEF PIR submission deadline so that progress can be reported in the GEF PIR. * Prepare the GEF PIR; * Assess major and minor amendments to the project within the parameters set by UNDP-GEF; * Monitor implementation plans including the gender action plan, stakeholder engagement plan, and any environmental and social management plans; * Monitor and track progress against the GEF Core indicators. * Support the Mid-term review and Terminal Evaluation process. * Add technical tasks as necessary |
| Project Assistant cum Interpreter | 4 years + 3 months at 1110 USD/month | Duties and Responsibilities  Under the guidance and supervision of the Project Manager, the Project Assistant will carry out the following tasks:   * Assist the Project Manager in day-to-day management and oversight of project activities; * Assist the M&E officer in matters related to M&E and knowledge resources management; * Assist in the preparation of progress reports; * Ensure all project documentation (progress reports, consulting and other technical reports, minutes of meetings, etc.) are properly maintained in hard and electronic copies in an efficient and readily accessible filing system, for when required by PB, TAC, UNDP, project consultants and other PMU staff; * Provide PMU-related administrative and logistical assistance. |
| Project Accountant/Finance Assistant/Finance officer | 4 years + 3 months at 1110 USD/month | Duties and Responsibilities   * Keep records of project funds and expenditures, and ensure all project-related financial documentation are well maintained and readily available when required by the Project Manager; * Review project expenditures and ensure that project funds are used in compliance with the Project Document and GoI financial rules and procedures; * Validate and certify FACE forms before submission to UNDP; * Provide necessary financial information as and when required for project management decisions; * Provide necessary financial information during project audit(s); * Review annual budgets and project expenditure reports, and notify the Project Manager if there are any discrepancies or issues; * Consolidate financial progress reports submitted by the responsible parties for implementation of project activities; * Liaise and follow up with the responsible parties for implementation of project activities in matters related to project funds and financial progress reports. |

**Technical consultants for Component 1**

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| International consultant on green financing and green procurement on POPs and mercury | 126 days over two years at XXX USD a day | International consultants providing technical assistance and expertise on the following topics:   * green financing, POP and mercury (40 days). * green financing mechanism in public and private institutions (15 days). * green financing implementation in public and private institutions (22 days). * green procurement in public institutions (29 days). * green procurement in healthcare facilities (20 days). |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| International consultant on gender and chemical management | 35 days over one year | International consultants providing technical assistance on: and expertise on:   * gender specific risk management of POPs and mercury included in the relevant environmental regulation. (10 days) * lending programs for women enterprises (10 days) * criteria for gender mainstreaming in gender procurement (5 days) |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| International consultant on Mercury, industrial emissions, hazardous waste disposal | 45 days over one year | International consultants providing technical assistance and expertise on the following topics:   * mercury in healthcare equipment (10 days). * mercury in lighting equipment (10 days). * mercury disposal technologies (25 days). |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| International consultant on the development and implementation of Green Financing. | 117 days over 2 years | International consultants providing technical assistance and expertise on the following topics:   * green financing, POP and mercury (40 days) * green financing mechanism in public and private institutions (15 days) * new POPs in manufacturing and industrial emissions (40 days) * green financing implementation in public and private institutions (20 days) * preparing materials and holding presentations on green financing to reduce POP and mercury (2 days) |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| International consultant on POPs | 78 days over one year | International consultants providing technical assistance and expertise on the following topics:   * POP and eco-labeling (15 days). * POP and EPR (8 days). * POP and mercury waste disposal (15 days). * new POPs in manufacturing and industrial emissions (40 days). |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| International consultant on environmental regulation on POPs and mercury | 50 days over one year | International consultants providing technical assistance and expertise on the following topics:   * regulation and POPs (25 days). * regulation and mercury (10 days). * regulation and industrial emission limits (15 days). |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| A group of three national experts to assist MONRE / MOIT on the improvement of regulation on POPs and EPR | 590 days over 2 years | Local consultants providing technical assistance and expertise on the following topics:   * preparing draft on regulation and POPs (280 days). * development environmental law (200 days). * waste regulation, disposal technologies and mercury (110 days). |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| A national expert on gender mainstreaming in mercury and POP management | 155 days over 2 years | Local consultants providing technical assistance and expertise on the following topics:   * developing on a gender specific section for risk management of POPs and Mercury included in the relevant environmental regulation. (45 days). * developing on a gender specific section for risk management of POPs and Mercury included in the relevant environmental regulation. (60 days). * developing on a gender specific section for risk management of POPs and Mercury included in the relevant environmental regulation. (20 days). * criteria for facilitating access to green loan to women enterprises. (20 days). * working on criteria to include gender balance at enterprises as a green procurement requirement (10 days) |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| A group of four national experts to assist MONRE, MOIT and MOH on the development and implementation of Green Financing and Green Procurement | 820 days over 2 years | Local consultants providing technical assistance and expertise on the following topics:   * green financing, POPs and mercury in products (110 days). * implementation of incentive mechanisms (120 days). * technical aspects of POPs, mercury and procurement (140 days). * management of environmental incentives (80 days). * preparing draft on Green procurement guidelines for MONRE (140 days). * preparing draft on Green procurement guidelines for healthcare facilities (80 days). * assistance on the implementation of Green procurement in ministries (120 days). * assistance on the implementation of Green procurement in hospitals (30 days) |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| A national expert on mercury roadmap development | 154 days over one years | Local consultants providing technical assistance and expertise on the following topics:   * management of mercury products in healthcare facilities (50 days). * alternative to mercury lamps and other products (44 days). * mercury disposal technologies (60 days). |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| A national expert on POPs, ecolabeling and EPR | 140 days over one years | Local consultants providing technical assistance and expertise on the following topics:   * working on POP and eco-labeling (100 days). * developing proposals on POP limits and relevant obligation in EPR (40 days). |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| National consultant on mercury containing products and mercury disposal technologies | 144 days over 2 year | Local consultants providing technical assistance and expertise on the following topics:   * mercury in healthcare facilities (50 days) * alternative to mercury lamps (40 days) * mercury disposal technologies (50 days) * alternative to mercury in products (4 days) -- |

Technical consultants for Component 2

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

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| --- | --- | --- |
| International consultant on Air Pollution Control System to reduce POPs and mercury releases | 190 days over two | International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics::   * to assist enterprises on the design of their APCS to reduce POP and mercury (90 days). * To assist in the selection of enterprises to be awarded for APCS piloting and assist on the implementation of their projects (100 days). |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| International consultant on analysis of POPs | 15 days over 3 months | International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics:   * training on analysis of POP in laboratory and with portable equipment (15 days). |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| An international expert on gender mainstreaming in workplace and chemical management. | 40 days over 2 years | International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics,   * sex-disaggregated data on accident at workplace in the manufacturing industry, with focus to exposure to chemicals. (20 days) * gender aspects related to POPs content in products and industrial processes (10 days) * gender aspects related to air pollution from industrial sources (10 days) |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| Two International consultants on POPs, mercury and their alternatives in the manufacturing sector | 294 days over two years | International consultants providing technical assistance and expertise on the following topics:   * Survey and analysis of XPS/EPS manufacturing sector (11 days). * Survey and analysis of use of SCCP in industrial processes (20 days). * Survey and analysis of use of POP BFR in industrial processes (25 days). * Survey and analysis of use of PFOS and PFOAs in industrial processes (25 days). * To assist enterprises on the design of their POP or mercury reduction project (100 days). * To assist on the selection of enterprises to be awarded and assist on the implementation of their projects (85 days). * To carry out baseline and terminal assessment of green financing implementation (28 days). |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

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| --- | --- | --- |
| International consultant on POPs in waste and secondary materials | 34 days over six months | International consultants providing technical assistance and expertise on the following topics:   * Identification of POP limits in waste and secondary materials based on national and international case studies(20 days). * Technical specification and quality criteria for secondary materials and recyclable waste (14 days). |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| A team of 4 national consultants to provide technical assistance on the selection to enterprises and the Green Financing committee for the selection and implementation POPs avoidance technologies | 550 days over 3 years | Local consultants providing technical assistance and expertise on the following topics:   * assisting 5 enterprises on the design of their POP or mercury reduction project (200 days) * providing technical assistance on selection of enterprises to be awarded and implementation of their projects (250 days) * to assist the Committee on mid term assessment of green financing implementation (100 days) |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| National experts on analysis of POPs | 30 days over 6 months | National expert providing training on analysis of POP in laboratory and with portable equipment (30 days). |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| National consultant on Gender Mainstreaming at workplace | 140 days over 2 years | Local consultants providing technical assistance and expertise on the following topics:   * working on the report on gender-specific issues related to the exposure of POPs in Vietnamese enterprises and on sex-disaggregated data on chemical accident at workplace in Vietnam (60 days). * working on on gender related criteria for the identification of chemical and non-chemical alternatives to POPs in products and processs (30 days). * working on a report on the gender-disaggregated effect of industrial air pollution on the general population, with recommendation, carried out. (30 days). * establishing communication among recycler and enterprises enhancing consultation of female workers (20 days) |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| A team of 4 national consultants on POPs and mercury in the manufacturing sector | 895 days over 3 years | Local consultants to:   * conduct survey and analysis on XPS/EPS manufacturing sector (80 days). * conduct survey and analysis on use of SCCP in industrial processes (80 days). * conduct survey and analysis on use of POP BFR in industrial processes (80 days). * conduct survey and analysis on use of PFOS and PFOAs in industrial processes (80 days). * assist 5 enterprises each on the design of their POP or mercury reduction project (220 days). * assist on the selection of enterprises to be awarded and implementation of their projects (220 days). * assist on baseline and terminal assessment of green financing implementation (135 days).. |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| A national consultant on POPs in waste and secondary materials | 105 days over one year | Local consultants to:   * conduct surveys on recycling and manifacturing enteprises on POP in waste and secondary materials (50 days). * Provide assistance and facilitation on the communication among enterprises and recyclers on POP containing waste (55 days) |

Technical consultants for Component 3

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| International consultants to provide technical assistance on mercury replacement in healthcare facilities, office and agriculture | 123 days over two years | International consultants providing technical assistance and expertise on the following topics:   * review of the status of mercury equipment in Vietnam (25 days) * the development of a guidance on the use, maintenance and calibration of non-mercury alternatives to medical devices (25 days) * mercury containing lamp and non-mercury alternatives (10 days) * preparing materials and perform training on mercury equipment and alternatives in healthcare facilities (20 days) * preparing materials and perform training on mercury lamps and alternatives (20 days) * development of bidding documents for non-mercury lamps (4 days) * development of bidding documents for non-mercury equipment (4 days) * providing technical assistance and international experience on safe disposal and recycling of mercury containing equipment (20 days) |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| International consultants to provide advice on the risk management of PPEs for women in the waste management sectors | 5 days over 6 months | International consultants providing technical assistance and expertise on the following topics:   * the risk management, technical guidance on personal protective measures for women in the waste management sectors (5 days) |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| A team of 4 national consultants to provide technical assistance on mercury replacement in healthcare facilities, office and agriculture | 752 days over 2 years | Local consultants for::   * providing technical assistance and expertise on the review of the status of mercury equipment in Vietnam (52 days) * developing technical guidance on the development of a guidance on the use, maintenance and calibration of non-mercury alternatives to medical devices (30 days) * developing guidance fo the replacement of mercury containing lamps (40 days) * preparing materials and perform training on mercury equipment and alternatives in healthcare facilities (220 days) * preparing materials and perform training on mercury lamps and alternatives (250 days) * developing bidding documents for non-mercury lamps (40 days) * developing bidding documents for non-mercury equipment (40 days) * providing technical assistance and national knowledge on safe disposal and recycling of mercury containing equipment (80 days) |

|  |  |  |
| --- | --- | --- |
| Consultant | Time Input | Tasks, Inputs and Outputs |
| A national consultants on Gender Mainstreaming and mercury waste and use of non-mercury devices | 50 days over two years | Local consultants for:   * preparing specific materials for the risk management, technical guidance on personal protective measures for women in the waste management sectors. through consultation with women workers and gender experts (20 days) * providing training on the calibration and use of non-mercury devices for nurses in the hospitals (30 days) |

Consultants for component 4 including Inception, Monitoring and Evaluation, Knowledge Management

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| One international consultant to provide technical assistance at inception, project reporting and to provide materials for Knowledge Management | 68 days over 2 4 years | International consultants providing technical assistance, sharing knowledge and holding training and presentation on the following topics:   * preparation of the inception report (15 days) * preparing materials on POP and mercury related topic to be shared on the website (10 days) * preparing material and holding presentations on green financing, POP and mercury (10 days) * providing techncal assistance on project reporting (30 days) * providing techncal assistance and experience on project indicator development (3 days) |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| International consultants for mid term review and final evaluation | 40 days over 2 years | International consultants for::   * undertaking mid term review (20 days) * undertaking terminal evaluation (20 days) |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| Local consultants for mid term review and final evaluation | 50 days over 2 years | Local consultants to cooperate with international consultant to:   * undertake mid-term review (25 days) * undertake terminal evaluation (25 days) |

| Consultant | Time Input | Tasks, Inputs and Outputs |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| Two local consultants to provide technical assistance at inception, project reporting and to provide materials for Knowledge Management | 435 days over 4 years | Local consultants for:   * preparing materials and holding presentation on project at inception (60 days) * providing assistance to the international consultant on the preparation of the inception report (20 days) * coordination and supervision of Gender Mainstreaming related activities in project implementation (60 days) * development and creation of the Knowledge Sharing Platform (25 days) * implementation and maintenance of the Knowledge Sharing Platform (80 days) * preparing materials on POP and mercury related topic to be shared on the website (80 days) * preparing and holding presentations on green financing, POP and mercury (25 days) * preparation of project reports as needed (80 days) * providing national knowledge and assistance on project indicator development (5 days) |

## Annex 8: Stakeholder Engagement Plan

Attached as a separate file

## Annex 9: Gender Analysis and Gender Action Plan

Attached as a separate file

## Annex 12: Procurement Plan for the first year

(The template of this plan is designed following the Law of Procurement of Vietnam No. 43/2013/QH13 and Decree 63/2014/ND-CP of the Government )

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name of package** | **Amount**  **(USD)** | **Source of funds** | **Selection Form** | **Selection Method** | **Start date for Bidder selection** | **Type of Contract** | **Contract date** |
|
| A | **Consulting Services** | **711,117** |  |  |  |  |  |  |
| 1 | International consultant related to POPs, ecolabel, Mercury, EPR and Green financial framework (Component 1,2,3,4) | 89,175 | GEF/UNDP | International Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 12 months |
| 2 | Review, amendment, development of new legislation related to POPs, Mercury (Component 1) | 69,072 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 24 months |
| 3 | Review, amendment, development of new legislation related to Ecolabel, EPR and Green financial framework (Component 1) | 100,000 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 24 months |
| 4 | Review, amendment, development of new legislation related to mercury and replacement of mercury thermometers and mercury containing lamps (Component 1) | 100,000 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 24 months |
| 5 | Survey, analyses POPs, design of the pilot implementation programme for the project (Component 2) | 116,390 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 24 months |
| 6 | Develop the training materials for replacement of mercury medical devices and fluorescent lamps | 15,900 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 12 months |
| 7 | Project audit services (Component 4) | 10,000 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 48 months |
| 8 | Project staff (Project Manager, Project Assistant, Project Accountant/Finance Assistant/Finance officer) - Project management cost | 210,580 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | By the time | 48 months |
| **B** | **Procurement of goods and non-consulting services** | **135,800** |  |  |  |  |  |  |
| 1 | Develop information sharing mechanism and collaboration on POP and Mercury (Component 4) | 34,810 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 12 months |
| 2 | Office equipment (computer, printer, scanner…) (Project management cost) | 15,000 | GEF/UNDP | Competitive quotation | One Stage - Sginle Envelope | QIII/2022 | Lumpsum | 03 months |
| 3 | Training events for trainer, healthcare facilities related to mercury lamps and mercury devices (Component 3) | 63,000 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 12 months |
| 4 | Workshop organization services (Component 1,3,4) | 22,990 | GEF/UNDP | National Open bidding | Two Stages Single Envelope | QIII/2022 | Lumpsum | 12 months |
|  | **Total** | **846,917** |  |  |  |  |  |  |

## Annex 11. Letter of financial commitments

Attached as a separate file

## Annex 12 GEF Core indicators

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Core Indicator 1 | Terrestrial protected areas created or under improved management for conservation and sustainable use | | | | | | | | | | (Hectares) |
|  |  | | | | | Hectares (1.1+1.2) | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 1.1 | Terrestrial protected areas newly created | | | | | | | | | |  |
| Name of Protected Area | WDPA ID | IUCN category | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
|  |  | Sum | | | |  | |  | |  |  |
| Indicator 1.2 | Terrestrial protected areas under improved management effectiveness | | | | | | | | | |  |
| Name of Protected Area | WDPA ID | IUCN category | | Hectares | | METT Score | | | | | |
| Baseline | | | | Achieved | |
|  | | Endorsement | | MTR | TE |
|  |  |  |  | | |  | |  | |  |  |
|  |  |  |  | | |  | |  | |  |  |
|  |  | Sum |  | | |  | |  | |  |  |
| Core Indicator 2 | Marine protected areas created or under improved management for conservation and sustainable use | | | | | | | | | | (Hectares) |
|  |  | | | | | Hectares (2.1+2.2) | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | Endorsement | | | MTR | TE |
|  |  | | | | |  |  | | |  |  |
| Indicator 2.1 | Marine protected areas newly created | | | | | | | | | |  |
| Name of Protected Area | WDPA ID | IUCN category | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
|  |  | Sum | | | |  | |  | |  |  |
| Indicator 2.2 | Marine protected areas under improved management effectiveness | | | | | | | | | |  |
| Name of Protected Area | WDPA ID | IUCN category | | | Hectares | METT Score | | | | | |
| Baseline | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | |  |  | |  | |  |  |
|  |  |  | | |  |  | |  | |  |  |
|  |  | Sum | | |  |  | |  | |  |  |
| Core Indicator 3 | Area of land restored | | | | | | | | | | (Hectares) |
|  |  | | | | | Hectares (3.1+3.2+3.3+3.4) | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 3.1 | Area of degraded agricultural land restored | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 3.2 | Area of forest and forest land restored | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 3.3 | Area of natural grass and shrublands restored | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 3.4 | Area of wetlands (including estuaries, mangroves) restored | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Core Indicator 4 | Area of landscapes under improved practices (hectares; excluding protected areas) | | | | | | | | | | (Hectares) |
|  |  | | | | | Hectares (4.1+4.2+4.3+4.4) | | | | | |
|  |  | | | | | Expected | | | | Expected | |
|  |  | | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 4.1 | Area of landscapes under improved management to benefit biodiversity | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 4.2 | Area of landscapes that meet national or international third-party certification that incorporates biodiversity considerations | | | | | | | | | |  |
| Third party certification(s): | | | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | |  | |  |  |
|  | |  | |  |  |
| Indicator 4.3 | Area of landscapes under sustainable land management in production systems | | | | | | | | | |  |
|  |  |  | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 4.4 | Area of High Conservation Value Forest (HCVF) loss avoided | | | | | | | | | |  |
| Include documentation that justifies HCVF | | | | | | Hectares | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | |  | |  |  |
|  | |  | |  |  |
| Core Indicator 5 | Area of marine habitat under improved practices to benefit biodiversity | | | | | | | | | | (Hectares) |
| Indicator 5.1 | Number of fisheries that meet national or international third-party certification that incorporates biodiversity considerations | | | | | | | | | |  |
| Third party certification(s): | | | | | | Number | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | |  | |  |  |
|  | |  | |  |  |
| Indicator 5.2 | Number of large marine ecosystems (LMEs) with reduced pollution and hypoxial | | | | | | | | | |  |
|  |  |  | | | | Number | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 5.3 | Amount of Marine Litter Avoided | | | | | | | | | | |
|  |  |  | | | | Metric Tons | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Core Indicator 6 | Greenhouse gas emission mitigated | | | | | | | | | | (Metric tons of CO₂e ) |
|  |  | | | | | Expected metric tons of CO₂e (6.1+6.2) | | | | | |
|  |  | | | | | PIF stage | Endorsement | | MTR | | TE |
|  | Expected CO2e (direct) | | | | |  |  | |  | |  |
|  | Expected CO2e (indirect) | | | | |  |  | |  | |  |
| Indicator 6.1 | Carbon sequestered or emissions avoided in the AFOLU sector | | | | | | | |  | |  |
|  |  |  | | | | Expected metric tons of CO₂e | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  | Expected CO2e (direct) | | | | |  | |  | |  |  |
|  | Expected CO2e (indirect) | | | | |  | |  | |  |  |
|  | Anticipated start year of accounting | | | | |  | |  | |  |  |
|  | Duration of accounting | | | | |  | |  | |  |  |
| Indicator 6.2 | Emissions avoided Outside AFOLU | | | | | | | | | |  |
|  |  |  | | | | Expected metric tons of CO₂e | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  | Expected CO2e (direct) | | | | |  | |  | |  |  |
|  | Expected CO2e (indirect) | | | | |  | |  | |  |  |
|  | Anticipated start year of accounting | | | | |  | |  | |  |  |
|  | Duration of accounting | | | | |  | |  | |  |  |
| Indicator 6.3 | Energy saved | | | | | | | | | |  |
|  |  |  | | | | MJ | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 6.4 | Increase in installed renewable energy capacity per technology | | | | | | | | | |  |
|  |  | Technology | | | | Capacity (MW) | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Core Indicator 7 | Number of shared water ecosystems (fresh or marine) under new or improved cooperative management | | | | | | | | | | (Number) |
| Indicator 7.1 | Level of Transboundary Diagnostic Analysis and Strategic Action Program (TDA/SAP) formulation and implementation | | | | | | | | | |  |
|  |  | Shared water ecosystem | | | | Rating (scale 1-4) | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 7.2 | Level of Regional Legal Agreements and Regional Management Institutions to support its implementation | | | | | | | | | |  |
|  |  | Shared water ecosystem | | | | Rating (scale 1-4) | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 7.3 | Level of National/Local reforms and active participation of Inter-Ministerial Committees | | | | | | | | | |  |
|  |  | Shared water ecosystem | | | | Rating (scale 1-4) | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 7.4 | Level of engagement in IWLEARN through participation and delivery of key products | | | | | | | | | |  |
|  |  | Shared water ecosystem | | | | Rating (scale 1-4) | | | | | |
| Rating | | | | Rating | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Core Indicator 8 | Globally over-exploited fisheries Moved to more sustainable levels | | | | | | | | | | (Metric Tons) |
| Fishery Details | | | | | | Metric Tons | | | | | |
| PIF stage | | Endorsement | | MTR | TE |
|  | |  | |  |  |
| Core Indicator 9 | Reduction, disposal/destruction, phase out, elimination and avoidance of chemicals of global concern and their waste in the environment and in processes, materials and products | | | | | | | | | | (Metric Tons) |
|  |  | | | | | Metric Tons (9.1+9.2+9.3) | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | | PIF stage | | MTR | TE |
|  |  | | | | | 35.648 | | 35.648 | | 10.162 | 35.648 |
| Indicator 9.1 | Solid and liquid Persistent Organic Pollutants (POPs) removed or disposed (POPs type) | | | | | | | | | |  |
| POPs type | | | | | | Metric Tons | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | | 35 | | 35 | | 10 | 35 |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 9.2 | Quantity of mercury reduced | | | | | | | | | |  |
|  |  |  | | | | Metric Tons | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | | 0.648 | | 0.648 | | 0.162 | 0.648 |
| Indicator 9.3 | Hydrochloroflurocarbons (HCFC) Reduced/Phased out | | | | | | | | | | |
|  |  | | | | | Metric Tons | | | | | |
|  |  | | | | | Expected | | | | Achieved | |
|  |  | | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | |  | |  | |  |  |
| Indicator 9.4 | Number of countries with legislation and policy implemented to control chemicals and waste | | | | | | | | | |  |
|  |  |  | | | | Number of Countries | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
| Indicator 9.5 | Number of low-chemical/non-chemical systems implemented particularly in food production, manufacturing and cities | | | | | | | | | |  |
|  |  | Technology | | | | Number | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Indicator 9.6 | Quantity of POPs/Mercury containing materials and products directly avoided | | | | | | | | | | |
|  |  |  | | | | Metric Tons | | | | | |
|  |  |  | | | | Expected | | | | Achieved | |
|  |  |  | | | | PIF stage | | Endorsement | | PIF stage | Endorsement |
|  |  |  | | | |  | |  | |  |  |
|  |  |  | | | |  | |  | |  |  |
| Core Indicator 10 | Reduction, avoidance of emissions of POPs to air from point and non-point sources | | | | | | | | | | (grams of toxic equivalent gTEQ) |
| Indicator 10.1 | Number of countries with legislation and policy implemented to control emissions of POPs to air | | | | | | | | | |  |
|  |  |  | | | | Number of Countries | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  |  | | | |  | |  | |  |  |
| Indicator 10.2 | Number of emission control technologies/practices implemented | | | | | | | | | |  |
|  |  |  | | | | Number | | | | | |
| Expected | | | | Achieved | |
| PIF stage | | Endorsement | | MTR | TE |
|  |  | | | | | 1 | | 1 | | 0 | 1 |
| Core Indicator 11 | Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment | | | | | | | | | | (Number) |
|  |  |  | | | | Number | | | | | |
| Expected | | | | Achieved | |
|  |  |  | | | | PIF stage | | Endorsement | | MTR | TE |
|  |  | Female | | | | 1,500 | | 1,500 | | 400 | 2,000 |
|  |  | Male | | | | 2,000 | | 2,000 | | 600 | 1,500 |
|  |  | Total | | | | 3,500 | | 3,500 | | 1,000 | 3,500 |

## Annex 13: GEF Taxonomy

**Guidance to project developer**: Please complete these tables as appropriate ticking the most relevant keywords/topics/themes. Double check on the GEF website here to ensure this is the most recent list: <https://www.thegef.org/documents/templates> This Annex must be completed by the submission deadline, but it does not need to be included in the ProDoc submitted to the GEF as this data must be manually entered into the GEF Portal.

|  |  |  |  |
| --- | --- | --- | --- |
| Level 1 | Level 2 | Level 3 | Level 4 |
| Influencing models |  |  |  |
|  | Transform policy and regulatory environments |  |  |
|  | Strengthen institutional capacity and decision-making |  |  |
|  | Convene multi-stakeholder alliances |  |  |
|  | Demonstrate innovative approaches |  |  |
|  | Deploy innovative financial instruments |  |  |
| **Stakeholders** |  |  |  |
|  | Indigenous Peoples |  |  |
|  | **Private Sector** |  |  |
|  |  | Capital providers |  |
|  |  | Financial intermediaries and market facilitators |  |
|  |  | Large corporations |  |
|  |  | SMEs |  |
|  |  | Individuals/Entrepreneurs |  |
|  |  | Non-Grant Pilot |  |
|  |  | Project Reflow |  |
|  | **Beneficiaries** |  |  |
|  | Local Communities |  |  |
|  | **Civil Society** |  |  |
|  |  | Community Based Organization |  |
|  |  | Non-Governmental Organization |  |
|  |  | Academia |  |
|  |  | Trade Unions and Workers Unions |  |
|  | Type of Engagement |  |  |
|  |  | Information Dissemination |  |
|  |  | Partnership |  |
|  |  | Consultation |  |
|  |  | Participation |  |
|  | **Communications** |  |  |
|  |  | Awareness Raising |  |
|  |  | Education |  |
|  |  | Public Campaigns |  |
|  |  | Behavior Change |  |
| Capacity, Knowledge and Research |  |  |  |
|  | Enabling Activities |  |  |
|  | Capacity Development |  |  |
|  | Knowledge Generation and Exchange |  |  |
|  | Targeted Research |  |  |
|  | **Learning** |  |  |
|  |  | Theory of Change |  |
|  |  | Adaptive Management |  |
|  |  | Indicators to Measure Change |  |
|  | **Innovation** |  |  |
|  | Knowledge and Learning |  |  |
|  |  | Knowledge Management |  |
|  |  | Innovation |  |
|  |  | Capacity Development |  |
|  |  | Learning |  |
|  | Stakeholder Engagement Plan |  |  |
| **Gender Equality** |  |  |  |
|  | Gender Mainstreaming |  |  |
|  |  | Beneficiaries |  |
|  |  | Women groups |  |
|  |  | Sex-disaggregated indicators |  |
|  |  | Gender-sensitive indicators |  |
|  | Gender results areas |  |  |
|  |  | Access and control over natural resources |  |
|  |  | Participation and leadership |  |
|  |  | Access to benefits and services |  |
|  |  | Capacity development |  |
|  |  | Awareness raising |  |
|  |  | Knowledge generation |  |
| Focal Areas/Theme |  |  |  |
|  | Integrated Programs |  |  |
|  |  | Commodity Supply Chains (Good Growth Partnership) |  |
|  |  |  | Sustainable Commodities Production |
|  |  |  | Deforestation-free Sourcing |
|  |  |  | Financial Screening Tools |
|  |  |  | High Conservation Value Forests |
|  |  |  | High Carbon Stocks Forests |
|  |  |  | Soybean Supply Chain |
|  |  |  | Oil Palm Supply Chain |
|  |  |  | Beef Supply Chain |
|  |  |  | Smallholder Farmers |
|  |  |  | Adaptive Management |
|  |  | Food Security in Sub-Sahara Africa |  |
|  |  |  | Resilience (climate and shocks) |
|  |  |  | Sustainable Production Systems |
|  |  |  | Agroecosystems |
|  |  |  | Land and Soil Health |
|  |  |  | Diversified Farming |
|  |  |  | Integrated Land and Water Management |
|  |  |  | Smallholder Farming |
|  |  |  | Small and Medium Enterprises |
|  |  |  | Crop Genetic Diversity |
|  |  |  | Food Value Chains |
|  |  |  | Gender Dimensions |
|  |  |  | Multi-stakeholder Platforms |
|  |  | Food Systems, Land Use and Restoration |  |
|  |  |  | Sustainable Food Systems |
|  |  |  | Landscape Restoration |
|  |  |  | Sustainable Commodity Production |
|  |  |  | Comprehensive Land Use Planning |
|  |  |  | Integrated Landscapes |
|  |  |  | Food Value Chains |
|  |  |  | Deforestation-free Sourcing |
|  |  |  | Smallholder Farmers |
|  |  | Sustainable Cities |  |
|  |  |  | Integrated urban planning |
|  |  |  | Urban sustainability framework |
|  |  |  | Transport and Mobility |
|  |  |  | Buildings |
|  |  |  | Municipal waste management |
|  |  |  | Green space |
|  |  |  | Urban Biodiversity |
|  |  |  | Urban Food Systems |
|  |  |  | Energy efficiency |
|  |  |  | Municipal Financing |
|  |  |  | Global Platform for Sustainable Cities |
|  |  |  | Urban Resilience |
|  | **Biodiversity** |  |  |
|  |  | Protected Areas and Landscapes |  |
|  |  |  | Terrestrial Protected Areas |
|  |  |  | Coastal and Marine Protected Areas |
|  |  |  | Productive Landscapes |
|  |  |  | Productive Seascapes |
|  |  |  | Community Based Natural Resource Management |
|  |  | Mainstreaming |  |
|  |  |  | Extractive Industries (oil, gas, mining) |
|  |  |  | Forestry (Including HCVF and REDD+) |
|  |  |  | Tourism |
|  |  |  | Agriculture & agrobiodiversity |
|  |  |  | Fisheries |
|  |  |  | Infrastructure |
|  |  |  | Certification (National Standards) |
|  |  |  | Certification (International Standards) |
|  |  | Species |  |
|  |  |  | Illegal Wildlife Trade |
|  |  |  | Threatened Species |
|  |  |  | Wildlife for Sustainable Development |
|  |  |  | Crop Wild Relatives |
|  |  |  | Plant Genetic Resources |
|  |  |  | Animal Genetic Resources |
|  |  |  | Livestock Wild Relatives |
|  |  |  | Invasive Alien Species (IAS) |
|  |  | Biomes |  |
|  |  |  | Mangroves |
|  |  |  | Coral Reefs |
|  |  |  | Sea Grasses |
|  |  |  | Wetlands |
|  |  |  | Rivers |
|  |  |  | Lakes |
|  |  |  | Tropical Rain Forests |
|  |  |  | Tropical Dry Forests |
|  |  |  | Temperate Forests |
|  |  |  | Grasslands |
|  |  |  | Paramo |
|  |  |  | Desert |
|  |  | Financial and Accounting |  |
|  |  |  | Payment for Ecosystem Services |
|  |  |  | Natural Capital Assessment and Accounting |
|  |  |  | Conservation Trust Funds |
|  |  |  | Conservation Finance |
|  |  | Supplementary Protocol to the CBD |  |
|  |  |  | Biosafety |
|  |  |  | Access to Genetic Resources Benefit Sharing |
|  | **Forests** |  |  |
|  |  | Forest and Landscape Restoration |  |
|  |  |  | REDD/REDD+ |
|  |  | Forest |  |
|  |  |  | Amazon |
|  |  |  | Congo |
|  |  |  | Drylands |
|  | **Land Degradation** |  |  |
|  |  | Sustainable Land Management |  |
|  |  |  | Restoration and Rehabilitation of Degraded Lands |
|  |  |  | Ecosystem Approach |
|  |  |  | Integrated and Cross-sectoral approach |
|  |  |  | Community-Based NRM |
|  |  |  | Sustainable Livelihoods |
|  |  |  | Income Generating Activities |
|  |  |  | Sustainable Agriculture |
|  |  |  | Sustainable Pasture Management |
|  |  |  | Sustainable Forest/Woodland Management |
|  |  |  | Improved Soil and Water Management Techniques |
|  |  |  | Sustainable Fire Management |
|  |  |  | Drought Mitigation/Early Warning |
|  |  | Land Degradation Neutrality |  |
|  |  |  | Land Productivity |
|  |  |  | Land Cover and Land cover change |
|  |  |  | Carbon stocks above or below ground |
|  |  | Food Security |  |
|  | International Waters |  |  |
|  |  | Ship |  |
|  |  | Coastal |  |
|  |  | Freshwater |  |
|  |  |  | Aquifer |
|  |  |  | River Basin |
|  |  |  | Lake Basin |
|  |  | Learning |  |
|  |  | Fisheries |  |
|  |  | Persistent toxic substances |  |
|  |  | SIDS : Small Island Dev States |  |
|  |  | Targeted Research |  |
|  |  | Pollution |  |
|  |  |  | Persistent toxic substances |
|  |  |  | Plastics |
|  |  |  | Nutrient pollution from all sectors except wastewater |
|  |  |  | Nutrient pollution from Wastewater |
|  |  | Transboundary Diagnostic Analysis and Strategic Action Plan preparation |  |
|  |  | Strategic Action Plan Implementation |  |
|  |  | Areas Beyond National Jurisdiction |  |
|  |  | Large Marine Ecosystems |  |
|  |  | Private Sector |  |
|  |  | Aquaculture |  |
|  |  | Marine Protected Area |  |
|  |  | Biomes |  |
|  |  |  | Mangrove |
|  |  |  | Coral Reefs |
|  |  |  | Seagrasses |
|  |  |  | Polar Ecosystems |
|  |  |  | Constructed Wetlands |
|  | Chemicals and Waste |  |  |
|  |  | Mercury |  |
|  |  | Artisanal and Scale Gold Mining |  |
|  |  | Coal Fired Power Plants |  |
|  |  | Coal Fired Industrial Boilers |  |
|  |  | Cement |  |
|  |  | Non-Ferrous Metals Production |  |
|  |  | Ozone |  |
|  |  | Persistent Organic Pollutants |  |
|  |  | Unintentional Persistent Organic Pollutants |  |
|  |  | Sound Management of chemicals and Waste |  |
|  |  | Waste Management |  |
|  |  |  | Hazardous Waste Management |
|  |  |  | Industrial Waste |
|  |  |  | e-Waste |
|  |  | Emissions |  |
|  |  | Disposal |  |
|  |  | New Persistent Organic Pollutants |  |
|  |  | Polychlorinated Biphenyls |  |
|  |  | Plastics |  |
|  |  | Eco-Efficiency |  |
|  |  | Pesticides |  |
|  |  | DDT - Vector Management |  |
|  |  | DDT - Other |  |
|  |  | Industrial Emissions |  |
|  |  | Open Burning |  |
|  |  | Best Available Technology / Best Environmental Practices |  |
|  |  | Green Chemistry |  |
|  | **Climate Change** |  |  |
|  |  | Climate Change Adaptation |  |
|  |  |  | Climate Finance |
|  |  |  | Least Developed Countries |
|  |  |  | Small Island Developing States |
|  |  |  | Disaster Risk Management |
|  |  |  | Sea-level rise |
|  |  |  | Climate Resilience |
|  |  |  | Climate information |
|  |  |  | Ecosystem-based Adaptation |
|  |  |  | Adaptation Tech Transfer |
|  |  |  | National Adaptation Programme of Action |
|  |  |  | National Adaptation Plan |
|  |  |  | Mainstreaming Adaptation |
|  |  |  | Private Sector |
|  |  |  | Innovation |
|  |  |  | Complementarity |
|  |  |  | Community-based Adaptation |
|  |  |  | Livelihoods |
|  |  | Climate Change Mitigation |  |
|  |  |  | Agriculture, Forestry, and other Land Use |
|  |  |  | Energy Efficiency |
|  |  |  | Sustainable Urban Systems and Transport |
|  |  |  | Technology Transfer |
|  |  |  | Renewable Energy |
|  |  |  | Financing |
|  |  |  | Enabling Activities |
|  |  | Technology Transfer |  |
|  |  |  | Poznan Strategic Programme on Technology Transfer |
|  |  |  | Climate Technology Centre & Network (CTCN) |
|  |  |  | Endogenous technology |
|  |  |  | Technology Needs Assessment |
|  |  |  | Adaptation Tech Transfer |
|  |  | United Nations Framework on Climate Change | Nationally Determined Contribution |
|  |  |  |  |
|  | Rio Markers |  |  |
|  |  | Paris Agreement |  |
|  |  | Sustainable Development Goals |  |
|  |  | Climate Change Mitigation 0 |  |
|  |  | Climate Change Mitigation 1 |  |
|  |  | Climate Change Mitigation 2 |  |
|  |  | Climate Change Adaptation 0 |  |
|  |  | Climate Change Adaptation 1 |  |
|  |  | Climate Change Adaptation 2 |  |
|  |  |  |  |

## Annex 14: Partners Capacity Assessment Tool and HACT assessment

(File attached separately)

## Annex 15: UNDP Project Quality Assurance Report

(to be completed in UNDP online corporate planning system)

## Annex 16: Green Financing in Vietnam

(File attached separately)

## Annex 17: Cost of air pollution treatment technology for small enterprises in Vietnam

(File attached separately)

1. See for instance “Sustainability Evaluation of Municipal Solid Waste Management System for Hanoi (Vietnam)—Why to Choose the ‘Waste-to-Energy’ Concept (Sustainability **2020**, 12, 1085; doi:10.3390/su12031085); Mapping Informal Waste Sector in Da Nang Understanding the informal waste sector, its workers & dynamic during COVID - Da Nang Case Study August 2020, UNDP accelerator labs; Solid and industrial hazardous waste management assessment: options and action area to implement the national strategy (World Bank, 2018); Plastic waste management in Vietnam - MSc. Nguyen Thanh Yen, Deputy director of Waste Management Department, Vietnam Environment Administration, 2019 -conference presentation and many others. [↑](#footnote-ref-2)
2. Some craft villages near Hanoi and HCM city collect fabric scraps and make pillows, quilted blankets, clothes for children. [↑](#footnote-ref-3)
3. Decision No. 184/2006/QD-TTg dated August 10, 2006 of the Prime Minister. [↑](#footnote-ref-4)
4. Decision No. 1598/2017/QD-TTg dated October 17, 2017 of the Prime Minister. [↑](#footnote-ref-5)
5. Hanh Thi Duong, Kiwao Kadokami, Hanako Shirasaka, Rento Hidaka, Hong Thi Cam Chau, Lingxiao Kong, Trung Quang Nguyen, Thao Thanh Nguyen, (2015). Occurrence of perfluoroalkyl acids in environmental waters in Vietnam. Chemosphere 122 (2015) 115–124. [↑](#footnote-ref-6)
6. IPEN - Information about PFAS in Vietnam from 2014 - 2018. Online at “http://www.nature.org.vn/en/wp-ontent/uploads/2019/05/Pan\_pfas\_vietnam\_15March2019.pdf” [↑](#footnote-ref-7)
7. http://plasticsvietnam.com/news-media/press-releases/plastics-rubber-vietnam-2018-boasts-significant-business-opportunities-for-vietnams-thriving-markets.html [↑](#footnote-ref-8)
8. Vietnam POPs and Sound Harmful Chemicals Management Project, GEF 5067 [↑](#footnote-ref-9)
9. 1.Korean Eco-label, 2.Thai Green Label, 3.ECO-Safe of India, 4.OEKO-Tex 100, 5.EU-Label of Europe, 6.Green Mark of Taiwan, 7.Chinese Eco-label, 8.NORDIC Eco-Label, 9.Global Organic Textile Standard (GOST, 10.Dutch Eco-label, 11.Ecoliving of Australia, 12.Der Blaue Engel, Oeko-Tex® of Germany [↑](#footnote-ref-10)
10. https://www.who.int/vietnam/news/detail/12-12-2019-who-commends-can-tho-s-commitment-to-tackle-air-pollution [↑](#footnote-ref-11)
11. These stakeholders and partners are listed in detail in Annex 8 and in chapter IV on Results and Partnership. [↑](#footnote-ref-12)
12. WHO, 2015: Developing national strategies for phasing out mercury-containing thermometers and sphygmomanometers in health care, including in the context of the Minamata Convention on Mercury: key considerations and step-by-step guidance. https://www.who.int/ipcs/assessment/public\_health/WHOGuidanceReportonMercury2015.pdf [↑](#footnote-ref-13)
13. <https://moh.gov.vn/web/phong-chong-benh-nghe-nghiep/thong-tin-hoat-dong/-/asset_publisher/xjpQsFUZRw4q/content/cham-soc-suc-khoe-nu-cong-nhan-tai-cac-khu-cong-nghiep?inheritRedirect=false> [↑](#footnote-ref-14)
14. United Nations Development Programme. Human Development Indices. <http://data.un.org/DocumentData.aspx?id=415> [↑](#footnote-ref-15)
15. Smart, E. R. (1986): Mercury vapour levels in a domestic environment following breakage of a clinical thermometer. In Science of The Total Environment 57, pp. 99–103. DOI: 10.1016/0048-9697(86)90014-8. [↑](#footnote-ref-16)
16. Lee, Robin; Middleton, Dan; Caldwell, Kathleen; Dearwent, Steve; Jones, Steven; Lewis, Brian et al. (2009): A review of events that expose children to elemental mercury in the United States. In Environmental health perspectives 117 (6), pp. 871–878. DOI: 10.1289/ehp.0800337. [↑](#footnote-ref-17)
17. Muhlendahl, KarlErnstV (1990): Intoxication from mercury spilled on carpets. In The Lancet 336 (8730-8731), p. 1578. DOI: 10.1016/0140-6736(90)93352-p. [↑](#footnote-ref-18)
18. Baseline, mid-term, and end of project target levels must be expressed in the same neutral unit of analysis as the corresponding indicator. Baseline is the current/original status or condition and need to be quantified. The baseline must be established before the project document is submitted to the GEF for final approval. The baseline values will be used to measure the success of the project through implementation monitoring and evaluation. [↑](#footnote-ref-19)
19. Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation. [↑](#footnote-ref-20)
20. Green chemistry Project. GEF ID 9379, tittle “Application of Green Chemistry in Viet Nam to support green growth and reduction in the use and release of POPs/harmful chemicals” [↑](#footnote-ref-21)
21. Outcomes are medium term results that the project makes a contribution towards, and that are designed to help achieve the longer-term objective. Achievement of outcomes will be influenced both by project outputs and additional factors that may be outside the direct control of the project. [↑](#footnote-ref-22)
22. See <https://www.thegef.org/gef/policies_guidelines> [↑](#footnote-ref-23)
23. See http://www.undp.org/content/undp/en/home/operations/transparency/information\_disclosurepolicy/ [↑](#footnote-ref-24)
24. See https://www.thegef.org/gef/policies\_guidelines [↑](#footnote-ref-25)
25. See <https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default>. [↑](#footnote-ref-26)
26. Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification. [↑](#footnote-ref-27)