

UNIDO

Independent Mid-term Evaluation

Democratic Socialist Republic of Sri Lanka

Environmentally sound management and disposal of PCBs wastes and PCB contaminated equipment in Sri Lanka



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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of PCBs wastes and PCB contaminated equipment
in Sri Lanka***

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Acronyms and abbreviations

BAT	Best available techniques
BEP	Best environmental practices
CEA	Central Environmental Authority
CEB	Ceylon Electricity Board
CES	Centre for Environmental Studies
ESM	Environmentally Sound Management
FSP	Full-size Project
GEF	Global Environment Facility
HQ	Headquarter
IA	Implementing Agency
ISID	Inclusive and Sustainable Industrial Development
LFA	Logical Framework Approach
LTL	Lanka Transformers Ltd.
M&E	Monitoring and Evaluation
MMDE	Ministry of Mahaweli Development and Environment
MTE	Mid-term Evaluation
MTR	Mid-term Review
NCPC	National Cleaner Production Centre
NGO	Non-governmental Organization
NIP	National Implementation Plan
NPC	National Project Coordinator
NPD	National Project Director
PBTs	Persistent Bioaccumulative Toxic Chemicals
PCBs	Polychlorinated biphenyls
PCDD	Polychlorinated dibenzodioxins
PCDF	Polychlorinated dibenzofurans
PIF	Project Identification Form
PIR	Project Implementation Review
PM	Project Manager
PMU	Project Management Unit
POPs	Persistent Organic Pollutants
ppm	Parts per million
PSC	Project Steering Committee

SC	Stockholm Convention
SGP	Small Grants Programme
TOR	Terms of Reference

Glossary of evaluation terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change due directly or indirectly to an intervention.
Effectiveness	The extent to which the objectives of a development intervention were or are expected to be achieved.
Efficiency	A measure of how economically inputs (through activities) are converted into outputs.
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Intervention	An external action to assist a national effort to achieve specific development goals.
Lessons learned	Generalizations based on evaluation experiences that abstract from specific to broader circumstances.
Logframe (logical framework approach)	Management tool used to guide the planning, implementation and evaluation of an intervention. System based on MBO (management by objectives) also called RBM (results-based management) principles.
Outcome	The achieved or likely effects of an intervention's outputs.
Outputs	The products in terms of physical and human capacities that result from an intervention.
Relevance	The extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed
Target group	The specific individuals or organizations for whose benefit an intervention is undertaken.

Executive summary

Introduction

The UNIDO-GEF project in the Democratic Socialist Republic of Sri Lanka “Environmentally sound management and disposal of PCBs wastes and PCB-contaminated equipment in Sri Lanka” commenced in June 2015. It has received USD 4,725,000 from the GEF; committed co-finance is USD 18,989,752 (cash and in-kind). Planned project duration is 5 years. As planned in the project document, the independent mid-term evaluation of the UNIDO-GEF project was carried out from October – December 2018.

Key findings and conclusions

Project Design

The project has a clearly defined development objective, namely, to build capacity to introduce and implement a PCB management system to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment in an environmentally sound manner. Project design encompasses various relevant aspects of PCB management, including training, guidance documents, legislation, inventory, sampling, disposal and decontamination, as well as long-term strategy for PCB management; therefore, it is considered to be adequate to address the problems at hand.

Relevance and ownership

The Democratic Socialist Republic of Sri Lanka ratified the Stockholm Convention in 2005, and is obliged to fulfill its obligations under it. The project is in line with national development and environmental priorities and strategies of the Government. All interviewed stakeholders confirmed the high significance of the project for Sri Lanka (representatives of the Government, private sector, academia and NGO). Ownership is considered to be high.

Effectiveness at current stage of implementation

Project document is based on a logical framework and includes 3 outcomes, besides monitoring and evaluation and project management. As foreseen in the project document, an inception workshop was conducted in June 2015 in Colombo. The Project Management Unit was established at project commencement, Project Steering Committee is in place. Capacity building and awareness raising workshops have taken place. PCB training and inventory manual has been drafted. A database of around 10,000 welding transformers has been compiled by a partnering NGO. Comprehensive training manuals have been developed in cooperation with the University of Perediniya, for introduction at universities, vocational training institutes and schools. At the time of the evaluation mission in October 2018, manual inventory had commenced; the introduction of an app to expedite inventory inputs was under consideration. PCB disposal activities have yet to commence (after completion of inventory).

Efficiency at current stage of implementation

According to the PIF, inventory should have been accomplished in the third year of project implementation; however, this was not the case at the time of the mid-term evaluation. Remaining time duration of the project is considered to be stringent to accomplish inventory, selection of technology, and destruction of 1000 tons of PCBs/PCB-contaminated equipment. Co-finance was being spent, however, not documented.

Assessment of risks to likelihood of sustainability of project outcomes

Owing to the observed strong interest, support, cooperation, commitment and active participation of all stakeholders at current stage of implementation, particularly support and commitment (including financial) expressed by the MMDE, as well as ongoing capacity building and awareness raising activities, risks to the likelihood of sustainability of project outcomes are considered to be low.

Project coordination, monitoring and management

The PMU is considered to be very effective by all the interviewed stakeholders. Regular communication between all involved stakeholders was reported. Appropriate documentation has been carried out. UNIDO Representative Office in Colombo is very supportive to the project.

Participating of both genders was evidenced during the evaluation meetings.

Key recommendations

It is most crucial to expedite inventory – continue manual inventory, and consider the introduction of an app to expedite inventory with the app, to reduce the probability of manual typos etc.

Inclusion of welding transformers and commencement of destruction of PCB-contaminated oil from welding transformers.

Disposal of stored old pure PCB oil to be considered at the earliest.

Awareness-raising activities to be continued.

Lessons learned

Support and follow-up is necessary to document co-finance figures.

Partnership with NGO and University contributes to successful implementation of project activities.

1. Evaluation objectives, methodology and process

1.1 Objectives

The independent mid-term evaluation¹ (MTE) of the GEF project in the Democratic Socialist Republic of Sri Lanka “**Environmentally sound management and disposal of PCBs wastes and PCB contaminated equipment in Sri Lanka**” was conducted as mentioned in the project document, and according to the GEF² and the UNIDO³ evaluation policies, and the UNIDO Guidelines for the Technical Cooperation Programme and Project Cycle⁴. It was carried out between October and December 2018 by an independent evaluation Consultant, Ms. Suman Lederer, team leader. The evaluation was accompanied by a technical expert, Mr. Petr Sharov. The mission to Colombo, Sri Lanka, took place from 15 – 19 October 2018.

The independent MTE covered the whole duration of the project from its commencement in June 2015 till 30 September 2018. It assesses the likelihood of the project achieving its intended outcomes and impacts, including the risks to the likelihood of sustainability of project outcomes. It analyses the project performance against the criteria – relevance, effectiveness, efficiency – at current stage of implementation. Through its assessments, the MTE provides information on, inter alia, the following:

- Provide evidence of results to date and of the likelihood of outcomes and impact in the future;
- Identify the challenges and risks to achievement of the project objectives and derive improving actions needed for the project to achieve maximum impact and sustainability;
- Enhance project relevance, effectiveness, efficiency and likelihood of sustainability by proposing a set of recommendations and/or corrective actions with a view to ongoing and future activities until the end of project implementation.

Intended users of the MTE are the project manager (PM) and project management unit (PMU), the GEF, project partners, government of the Democratic Socialist Republic of Sri Lanka, other organizations in Sri Lanka cooperating with UNIDO, beneficiaries and UNIDO management and staff at UNIDO Headquarters (HQ).

1.2 Information sources and availability of information

For the MTE, the following sources were referred to: a comprehensive desk review of the documents provided; one-to-one interviews with amongst others the UNIDO PM, the National Project Director (NPD), Deputy (de facto) National Project Director, National Project Coordinator (NPC) Project Management Unit (PMU),

¹ In line with UNIDO’s Independent Evaluation Office Policy, also referred to as Mid-term Review (MTR).

² https://www.thegef.org/gef/sites/thegef.org/files/documents/ME_Policy_2010.pdf

³ UNIDO. (2015). Director General’s Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1).

⁴ UNIDO. (2006). Director-General’s Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAL.17/Rev.1, 24 August 2006).

Ministry of Mahaweli Development and Environment (MMDE), as well as a site visit to the INSEE Cement Kiln in Puttalam. Annex 1 provides a list of persons met and interviewed and sites visited.

The UNIDO PM as well as the national PMU provided the evaluation with written documents and reports in a very timely manner, such as inter alia progress reports, minutes of the meetings, output documents, which were reviewed. Moreover, stakeholders were requested during the meetings to provide further documents, which they readily made available to the evaluation in a very timely manner. A detailed list of documents is provided in Annex 5.2. All the documents and information readily made available to the evaluation by all people met and interviewed facilitated the work of the evaluation enormously.

1.3 Methodology and process

The project has received USD 4,725,000 from the GEF and USD 18,989,752 co-finance (in cash and in-kind).

Project implementation commenced in June 2015: planned duration of the project is 5 years, till May 2020. As planned in the project document, the MTE has taken place at the end of third year of project implementation (plus a few months).

The MTE was carried out in the time period October – December 2018 by an independent evaluation Consultant. The evaluation was accompanied by a Technical Expert. The MTE consisted of document review, interviews with project stakeholders and site visits to relevant Organizations. After the initial desk review of available documents, the evaluation mission to the Democratic Socialist Republic of Sri Lanka took place from 15 – 19 October 2018. The evaluation covered the duration of the project from commencement of project implementation in June 2015 till 30 September 2018.

At the end of the evaluation mission, preliminary findings of the MTE were presented to the Ministry of Mahaweli Development and Environment (MMDE), including the PMU.

The evaluation parameters have been operationalized into an evaluation matrix which is provided in Annex 5.3. The evaluation matrix contains the main evaluation questions, sources of verification and relevant indicators.

1.4 Limitations of the evaluation

The evaluation process as such did not face any limitation. The PMU was very cooperative and facilitated the evaluation process to a great extent. However, the MTE cannot cover the inventory and selected technology as these activities are yet to be accomplished.

2. Country and project background

2.1 Fact sheet

Project Title	Environmentally sound management and disposal of PCBs wastes and PCB contaminated equipment in Sri Lanka
UNIDO SAP ID / GEF ID	150050 / 5314
Region / Country	Asia and Pacific / Democratic Socialist Republic of Sri Lanka
Project implementation start date (First PAD issuance date)	4 May 2015
Expected implementation end date (as per CEO endorsement document)	30 June 2020
Revised expected implementation end date (if applicable)	
Donor(s)	GEF
GEF project grant (excluding PPG, in USD)	4,725,000
GEF PPG (if applicable, in USD)	150,000
UNIDO co-financing (in USD)	89,850 (cash ⁵) + 150,000 (in-kind)
Total co-financing at CEO endorsement (in USD)	18,989,752 (cash + in-kind)
Total project cost (excluding PPG and agency support cost, in USD; i.e., GEF project grant + total co-financing at CEO endorsement)	23,714,752
Mid-term evaluation	October - December 2018

Source: project document, TOR.

2.2 Country and Project Background

Country Background

⁵ Sourced out from GEF-PTC Facility funds. Values reflected in the PIF amended to reflect actual funds allocated for project implementation.

Sri Lanka is an island in the Indian Ocean, located south of India, with a population of 22.5 million. It has a GDP of USD 87.3 billion (official exchange rate, 2017 est.), with Services contributing over 60% to the GDP, followed by Industry with over 30% and Agriculture below 8%. Main export partner countries are US, UK, India, Singapore, Germany and Italy; main export commodities are textiles and apparel, tea and spices, rubber manufactures, precious stones, coconut products, and fish. Main import partner countries are India, China, Singapore, UAE and Japan; main commodities being imported are petroleum, textiles, machinery and transportation equipment, building materials, mineral products and foodstuffs.

Project Background

National Implementation Plan (NIP)

Sri Lanka became a signatory to the Stockholm Convention on Persistent Organic Pollutants (POPs) on 5 September 2001 and ratified the Convention on 22 December 2005, and it entered into force on 22 March 2006. In line with its obligations under the Stockholm Convention, the Democratic Socialist Republic of Sri Lanka prepared its National Implementation Plan (NIP) in 2006. The NIP was updated in 2016.

According to the NIP, amongst others, Polychlorinated Biphenyls (PCBs) had extensive usage in Sri Lanka. In the 1990s in some instances safety measures have been taken by storing used PCB oils in steel drums securely for safe disposal in the future. Transformers used in Sri Lanka have been imported from over twenty countries and cover many models produced for generation, transmission and distribution. PCB was used extensively as a dielectric in transformers until international production ceased in 1986. Of the estimated 18,500 transformers in the electricity and industrial sector, a very few pure PCB transformers have been identified. Initially, it was assumed that only transformers manufactured before 1986 had high probability of containing PCB. However, sampling across different of manufacturers using field test kits and laboratory analysis indicates that there is a very high degree of cross contamination of even non-PCB transformers during routine maintenance even among relatively new transformers. On subsequent random sampling of non-PCB transformers, several contaminated transformers (range of 50-2000 ppm PCB) were identified. The contamination was assumed to have taken place during maintenance activities or inadvert use of PCB contaminated oil.

Identified problems related to PCBs were the following:

- Lack of adequate legislation to control imports,
- Environmental impacts and baseline levels not adequately studied,
- Lack of sufficient resources for identification and analysis,
- Lack of acceptable treatment, disposal and storage systems for PCB contaminated oils and equipment⁶,
- Contaminated sites yet to be identified,
- Cross contamination of non-PCB oil with PCB oil.

Identified management actions were the following:

⁶ The Cement Kiln, Holcim (Insee), existed already at that time.

- Develop new legislation for management and prevention of new entry to the country,
- Establish full inventory of PCB containing equipment,
- Establish procedures for equipment maintenance,
- Establish and implement guidelines for phase out, transportation, storage and disposal of PCB containing equipment,
- Establish progress monitoring mechanism,
- Capacity building for control and management of PCBs,
- Disposal of existing stocks and stockpiles,
- Rehabilitation and decontamination of contaminated sites,
- Introducing control measures to prevent cross contamination.

Article 3 para 1 of the Stockholm Convention states that, Parties shall

- a) Prohibit and/or take the legal and administrative measures necessary to eliminate:
 - i) Production and use of chemicals in Annex A (... Polychlorinated biphenyls (PCBs))
and
 - ii) Import and export of chemicals in Annex A, i.e., trade is restricted

For Annex C chemicals (PCDD/PCDF, Hexachlorobenzene, PCBs)

Parties shall, at a minimum, take measures to address the following:

- Develop an Action Plan,
- Release reduction or source elimination,
- Substitute materials, products, processes,
- For new and existing sources, use best available techniques (BAT) and best environmental practices (BEP).

Under the provisions of the Stockholm Convention, Sri Lanka is required to completely phase out the use of PCBs by 2025 and dispose off any stocks of PCB in an environmentally safe manner by 2028.

The preliminary inventory in Sri Lanka showed that there were 17,528 transformers owned by the CEB and 2,700 owned by LECO. Moreover, around 74 transformers were owned by independent power producers. 681 transformers were produced in or before 1986: of this 176 were subjected to the Field Test and 60% were positive for PCBs. However, out of this, only 48% could be confirmed as positive for PCBs, after the Gas Chromatography. Moreover, a more comprehensive survey was necessary to determine the exact number of transformers and capacitors containing PCBs.

The Central Environmental Authority (CEA) had initiated activities to implement load based licensing system to promote industries to take preventive measures and had included PCBs in the preliminary list of chemicals which were being proposed to be restricted and/or banned. Majority of the PCB stocks as well as PCB containing chemicals were with the Ceylon Electricity Board (CEB) and Lanka Transformers Ltd. (LTL).

There was no domestic legislation in Sri Lanka to prevent anyone from importing PCB or PCB containing equipment, this was a major challenge. Further, absence of legislation for management of PCBs within the country was another major identified challenge, as well as the absence of a comprehensive plan with adequate funding for phasing out PCB and PCB contaminated material.

2.3 Project Description

Project received GEF CEO endorsement on 25 February 2015; implementation at UNIDO commenced in June 2015. Planned project duration is 5 years, i.e. till May 2020. According to the project document, an independent mid-term evaluation is planned to take place at the end of the third year of project implementation.

Total project budget is USD 23,714,752, which includes USD 4,725,000 GEF funds and USD 18,989,752 co-financing (cash and in-kind).

According to the PIF (February 2015), the main project objective is to build capacity in Sri Lanka to introduce and implement an environmentally sound management of PCB wastes stockpiles and PCB-containing equipment. Further, specific problems related to PCB management and which the project aims to address are as follows [p.5]:

- Lack of adequate legislation to control imports;
- Environmental impacts and baseline levels not adequately studied;
- Lack of sufficient resources for identification and analysis;
- Lack of acceptable treatment, disposal and storage systems for PCB contaminated oils and equipment;
- Contaminated sites yet to be identified;
- Cross-contamination of non-PCB oil with PCB oil.

Main project components, besides M&E and project management, are:

- Institutional strengthening and awareness raising;
- Policy and regulatory framework;
- Disposal of PCBs, PCB-containing equipment and wastes.

Main project stakeholders are:

MMDE: Ministry of Mahaweli Development and Environment, formerly, the Ministry of Environment and Renewable Energy, also the focal point for the Stockholm Convention in Sri Lanka.

CEA: Central Environmental Authority – under the overall responsibility of the MMDE; responsible for the issuance of clearances and maintain the environmental standards in accordance with the National Environmental Act of 1980 and its amendments.

CEB: Ceylon Electricity Board – empowered to generate electric energy, transmit, and distribute it to reach all categories of consumers; largest owner of decommissioned transformers (probably containing PCBs). The CEB has been sub-contracted by the MMDE for the inventory.

LECO: Lanka Electricity Company Pvt. Ltd. – established to distribute electricity in areas which were previously served by Local Authorities.

LTL Transformers Pvt. Ltd. – established in 1982 as a joint venture of CEB and the Power Utility of Sri Lanka and European Investors to produce an indigenous transformer.

ITI: Industrial Technology Institute – wholly owned Institute of the Government of Sri Lanka, functions under the jurisdiction of the Ministry of Technology and Research.

3. Project assessment

The following evaluation criteria has been specified in the TOR for the MTE:

3.1 Project Design

Project design quality assessment criteria derive from the logical framework approach (LFA) methodology, leading to the establishment of LogFrame Matrix (LFM) and the main elements of the project, i.e. overall objective, outcomes, outputs, to defining their causal relationship, as well as indicators, their means of verification and the assumptions.

The evaluation will examine the extent to which:

- *The project's design is adequate to address the problems at hand;*
- *The project has a clear thematically focused development objective, the attainment of which can be determined by a set of verifiable indicators;*
- *The project was formulated based on the logical framework (project results framework) approach;*
- *Was there a need to reformulate the project design and the project results framework given changes in the country and operational context?*
- *All GEF-5 projects have incorporated relevant environmental and social risk considerations into the project design, established at the time of project design.*

Under the 3 different outcomes of the project, several activities are foreseen. Each outcome includes related outputs and corresponding activities. Output 1.1 inculcates capacity building for PCB management and disposal. Under this output, trainings have been planned for staff from industry, government, academic institutions and NGOs. Moreover, it also includes the drafting of an Official Guidance document, in agreement with main authorities and stakeholders.

Output 1.2 encompasses PCB inventory, including labeling, tracing and implementation of PCB traceability database and sampling of around 2000 transformers.

Under Output 1.3, awareness raising and training activities are planned, covering environmental, toxicology, technological and managerial aspects related to PCB.

Outputs formulated within the Outcome 2 are pertinent to policy regulations relevant to PCBs. It foresees the formulation of a Gap Analysis of the existing legislation. Output 2.1 encompasses the drafting of legislation on PCB including an enforcement strategy, clearly defining the role and responsibilities of the local and central authorities, deadline, incentive and penalties for the PCB owners as well as reporting and management obligations.

Outcome 3 deals with the disposal of 1000 tons of PCBs, PCB-containing equipment and wastes. Output 3.1 includes collection, packaging, transportation and storage of

PCB wastes. Output 3.2 inculcates the disposal and decontamination of PCB containing equipment. Output 3.3 includes the formulation of a long-term strategy on PCB management (based on project results).

As the project design considers various relevant aspects of PCB management, including training, guidance documents, legislation, inventory, sampling, disposal and decontamination, as well as a long-term strategy for PCB management, it is considered to be adequate to address the problems at hand.

The project has a clearly defined development objective, namely, to build capacity to introduce and implement a PCB management system to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment in an environmentally sound manner. Project was formulated based on the logical framework approach, and includes pertinent outcomes, outputs, and corresponding activities. As mentioned above, project activities foresee different aspects relevant to the management of PCBs, and include specific verifiable indicators.

Implementation performance at current stage of implementation

3.2 Relevance

The evaluation will examine the extent to which the project is relevant to the:

- *National development and environmental priorities and strategies of the Government and the population, and regional and international agreements. See possible evaluation questions under “Country ownership/drivenness” below.*
- *Target groups: relevance of the project’s objectives, outcomes and outputs to the different target groups of the interventions (e.g. companies, civil society, beneficiaries of capacity building and training, etc.).*
- *GEF’s focal areas/operational programme strategies: In retrospect, were the project’s outcomes consistent with the GEF focal area(s)/operational program strategies? Ascertain the likely nature and significance of the contribution of the project outcomes to the wider portfolio of POPs.*
- *Does the project remain relevant taking into account the changing environment?*

The Vision 2025 of the Government of Sri Lanka focusses on economic growth and development, also at grassroots level, however, does not include the country’s environmental priorities. The Voluntary National Review on the Status of Implementing the SDGs (2018) also does not mention the various Conventions, and only waste management and the resulting open burning as one of the issues to be considered, which are related to the obligations under the Stockholm Convention. The National Development Framework, Mahinda Chinthana – a Vision for Future, however, does highlight the need for all industries in the country to operate in an eco-friendly manner, and the need for proper collection and disposal of hazardous industrial wastes. Mission 6 of the National Action Plan for Haritha Lanka Program (2009) is the prevention of the accumulation of hazardous wastes in non-hazardous waste streams and the possibility of establishment of public-private partnership (PPP) for providing services for hazardous waste management.

Nevertheless, Sri Lanka ratified the Stockholm Convention in 2005. The Sri Lankan NIP was to be transmitted to the Secretariat of the Stockholm Convention in March 2008; Sri Lanka transmitted its NIP in September 2007. PCBs are specifically

mentioned in the NIP. The project is considered to be in line with national development and environmental priorities and strategies of the Government and the population.

All the interviewed stakeholders confirmed the high significance of the project for Sri Lanka (representatives of the Government, private sector, academia and NGO).

Project outcomes are consistent with the operational program strategies of the GEF⁷ and remain relevant taking into account the changing environment. The GEF's goal in the POPs focal area is to protect human health and the environment by assisting countries to reduce and eliminate production, use and releases of POPs, and consequently contribute generally to capacity development for the sound management of chemicals. Under GEF-4, this goal was to be achieved by amongst others: strengthening capacities for National Implementation Plan (NIP) implementation, including assisting those countries that lag farthest behind to establish basic, foundational capacities for sound management of chemicals.

GEF-5 encompasses an increase of 25% of resources for the POPs focal area compared to the GEF-4 allocation of \$300 million, to "...continue work in support of its objectives, in particular PCB phase out and disposal... and 23,000 tons of PCB-related waste and contaminated equipment"⁸.

The project aims at reducing PCBs via legislation, capacity building, technology transfer and awareness-raising activities, to enable Sri Lanka to comply with its obligations set out in the SC and lay a sound foundation to fulfill its commitments; moreover, it supports its chemical management regime, which in turn would contribute to protect human health and environment from the threat of POPs.

3.3 Effectiveness at current stage of implementation

- *The evaluation will assess the objectives and current results (results to date)*
- *The evaluation will assess to what extent results at various levels, including outcomes, if any at this current stage of implementation, have been achieved. In detail, the following issues will be assessed: To what extent have the expected outputs, and outcomes, if any, been achieved or are likely to be achieved? Has the project generated any results that could lead to changes of the assisted institutions? Have there been any unplanned effects?*
- *Are the project outcomes commensurate with the original or modified project objectives? If the original or modified expected results are merely outputs/inputs, the evaluators should assess if there were any real outcomes of the project and, if there were, determine whether these are commensurate with realistic expectations from the project.*
- *How do the stakeholders perceive the quality of outputs? Are the targeted beneficiary groups actually being reached?*
- *What outputs and outcomes has the project achieved so far (both qualitative and quantitative results)? Has the project generated any results that could lead to changes of the assisted institutions? Have there been any unplanned effects?*
- *Identify actual and/or potential longer-term impacts or at least indicate the steps taken to assess these (see also below "monitoring of long term changes"). Wherever*

⁷ https://www.thegef.org/sites/default/files/documents/GEF-5_FOCAL_AREA_STRATEGIES.pdf

⁸ Ibid. p.75.

possible, evaluators should indicate how findings on impacts will be reported in future.

- *Is a PCB management system in place to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment? Has the disposal of PCB waste and PCB-containing equipment in an environmentally sound manner commenced? How is it being carried out?*

Achievement of activities, outputs and outcomes is detailed below [document review; interview data; site visit]:

Expected Outcome 1: Institutional capacities and stakeholders' awareness on PCB issues strengthened.

Output 1.1. Technical and human resources capacity for PCB management and disposal strengthened.

Activity 1.1.1: Develop guidelines for the ESM of PCBs adapted to local needs and conditions in both English and local languages

A 1.1.2: Conduct technical training for officers from relevant institutions on the environmentally sound management of PCB containing equipment (identification, storage, transport, disposal)

A 1.1.3: Publication and dissemination of the guidelines

PCB official guidance document is yet to be drafted. Technical manual and inventory manual – have been drafted, and were being reviewed by the Publication committee for approval, after which hard copies are planned to be printed, which would include foreword from the Minister and Additional Secretary, and disseminated.

The Training Manual and Inventory Manual for Environmentally Sound Management of PCBs in Utility Sector of Sri Lanka was compiled by EML Consultants Pvt. Ltd. in 2018. It comprises an overview of POPs, PCBs, PCB sources, Effects of PCBs, Sectors that use PCBs in Sri Lanka, Main Issues in the Management of PCBs, general overview on development of an Inventory for Transformers, Tiers used to minimize the transformers to be selected, and Post Inventory Activities – short introduction to Storage, Handling and Transport of PCB-contaminated equipment.

The Training and Inventory Manual for ESM of PCBs in the Welding Sector of Sri Lanka was also compiled by EML Consultants Pvt. Ltd. in 2018. It incorporates an overview of POPs, PCBs, Effects of PCBs, Use of PCBs in the Welding Sector of Sri Lanka, Safe Measures – Preventive Measures, PPE, Causes of Accidents, Security, Storage Guidelines, and Alternatives for PCBs.

Technical training has been conducted for welders from welding sector, Officers of utility sector (Ceylon Electricity Board - CEB⁹) and for technical staff at the laboratories on 3 and 4 May 2017. Training was conducted by National and International Experts, on

⁹ <https://www.ceb.lk/ceb-history/en>

- Environmentally Sound Management and disposal of PCBs waste and PCB contaminated equipment in Sri Lanka (3 May 2017)
Main topics presented were:
 - Main issues in the management of PCBs in Sri Lanka
 - Identification, analysis and labelling of PCBs waste and contaminated equipment
 - Step-by-step guidelines for handling of PCB material
- Minimization of Possible Occupational Health Hazards of PCBs containing Welding Plants
Topics covered were as follows:
 - Project background
 - Main issues in the management of PCBs in the welding sector in Sri Lanka
 - Occupational health and safety

Output 1.2 PCB inventory on the utility sector verified and completed

A 1.2.1: Prepare inventory design and sampling plan

A 1.2.2: Sampling and analysis of at least 2000 transformers +5% cross check

A 1.2.3: Labeling, tracing and implementation of PCB traceability database

The MMDE has contracted ITI for the testing of the samples. The ITI Laboratory (Industrial Technology Institute¹⁰) is under the Ministry of Science, Technology and Research. As mentioned in the interviews, the CEB has its own Laboratory for testing for PCBs. If the analysed value is around or more than 50 ppm, the sample is sent to the ITI for GCMS analysis. The ITI possesses GC¹¹ with various detectors:

GC-FID/ECD: Chlorinated organic compound/volatile organic compound analysis

GC-ECD/NPD: Chlorinated organic compound analysis

GCMS: Volatile organic compound analysis

GCMS-MS: Volatile organic compound analysis.

UNIDO procured 3,500 bottles for samples and sent to the ITI.

[Sri Lanka] CEB is the Ceylon Electricity Board, the main company for power supply in Sri Lanka. It possesses around 33,000 transformers in service (around 10% of them are out of service). Most of them were procured after 1986; around 1,000 of them might have been procured before 1986. Moreover, the CEB has 2 laboratories, one in Kandy, and one at the HQ in Colombo, Kelanitissa Power Station. The MMDE has sub-contracted the CEB for the inventory. Further, within the framework of the project, the CEB has conducted 5 POPs, PCB and inventory training workshops for its employees; other stakeholders, including the MMDE were also invited to participate in the training workshops:

¹⁰ <http://iti.lk/en/>

¹¹ <http://iti.lk/en/component/content/article/80-our-divisions/technical-services/744-major-equipments-home.html>

Date conducted	No. of attendees
06.03.2018	65
07.03.2018	50
12.03.2018	48
27.03.2018	52
29.03.2018	43

Source: Attendance sheets; interview data.

The CEB has been sub-contracted by the MMDE for the inventory. Through the identification of tires, inventory design and sampling plan was finalized by the National and International Expert, together with the CEB officials, Information collection sheets and Identification tags prepared. Manual inventory had commenced; 19 teams had been formed with 4-5 persons each. Inventory of around 10% of transformers has been done manually. However, manual inventory could not be conducted speedily, and moreover, the potential for human error was considered to be given. To avoid the possibility of human error, and to speed up the process of inventory, it was under discussion to ensure the traceability of PCB data by having an online database facility and GPS based mobile application. However, the application (app) still needs to be developed according to the requirements. It is planned that CEB would be the owner of the database, and would also be responsible for its maintenance.

Moreover, it was mentioned to the evaluation that around 3,000 kg of old pure PCB oil is still in storage; it is stored in a separate closed room, which is not accessible for everyone. Further, very old transformers are also in storage; which might be contaminated.

Welding transformers were initially not included in the inventory plan. Nevertheless, the NGO People-to-People Volunteers¹² has established a database of almost 10,000 welding transformers (presented to the evaluation), collected 200 samples, from which around 125 have already been analysed.

Output 1.3 Stakeholder awareness and engagement including NGOs and civil society established

A 1.3.1: Preparation and dissemination of awareness raising material

A 1.3.2: Conduct awareness raising programmes on POPs for the general public focusing on women and children issues

A 1.3.3: Conduct awareness raising programme for the environmental authorities, customs and research institutions

¹² People to People Volunteers is a registered NGO in Sri Lanka. It implemented a Small Grants Programme (SGP) with the support of GEF funds, with a focus on awareness raising about PCBs in the welding sector, in two Provinces in Sri Lanka.

A 1.3.4: Conduct awareness raising programme for central and provincial power generation and distribution sector and for waste managers

Good collaboration has been established with the NGO People-to-People. Moreover, Project participated in an exhibition, and prepared awareness-raising dissemination materials – including video, bags, caps, brochures and posters, amongst others, with captions of PCB-free Sri Lanka. 4 articles were published in newspapers as follows:

20 August 2017	Sunday Observer	Do you know the facts?
13 December 2017	Vidusara	Welding industry, PCB and its environmental and health effects
24 December 2017	Sunday Observer	Risk posed by industrial contaminated PCB
27 December 2017	Sunday Observer	Our body burden

Source: PMU

The MMDE conducted an Exhibition, Sri Lanka Next - A Blue-Green Era, from 17-19 October 2016, on local regional and global efforts addressing climate change. Two stalls were kept at this Exhibition to disseminate knowledge about POPs, PCBs and especially PCBs in the welding sector. The Exhibition was attended by international delegates, youth delegates, scientists, business community representatives, school children, international and local media persons, and general public.

21 awareness-raising workshops have been organized since project inception by the NGO People to People Volunteers for the people related to the welding sector all over Sri Lanka, as follows:

No	Date	Venue	No. of participant	Target group
01	24.05.2016	Garden beach hotel, Kalutara	56	Welders
02	10.05.2016	Divisional secretariat office Auditorium, Negombo	43	Welders & government officers
03.	04.05.2016	Janahita Rest house, Welimada	53	Welders
04	04. 06.2016	Finlays, Timber Division premises, Mabola, Wattala	41	Workers & public Communities
05	16.07.2016	Cooperative hall, Kilinochchi	24	Welders
06	10.07.2016	“Sanasa” Hall, Gampaha	22	Welders & government officers
07	04.08.2016	Cooperative Hall, Nuwara-eliya	57	Welders , student of technical colleges
08	08.10.2016	District secretary conference hall, Galle	84	Welders , student of technical colleges, Student of PHI training , CEB offices and workers, Government offices
09	17.10.2016	BMICH	74	Public communities, school children, government officers
10	18.10.2016	BMICH	65	Public communities
11	19.10.2016	BMICH	53	Welders
12	17.11. 2016	Conference hall at the Colombo School of Business & Management, Ward place, Colombo -7	56	Sri Lanka Nature forum members (NGO network on nature conservation)
13	23.04.2017	Provincial Health service office, Jaffna	53	Public health inspectors of Northern Province

14	12.03.2018	Divisional secretariat office Madirigiriya	45	Grama Niladari, Development officers
15	14.05.2018	AG Office Ududumbara	47	Government offices, welders
16	02.06.2018	PPV Office , Talahena, Negambo	41	Welders, fisheries community, boat mechanics
17	23.07. 2018	Kandegama Community hall, Kandegama,	37	Welders, Village community,
18	06.09.2018	Sripali Vidyalaya, Horana	350	School Children, Teachers
19	02.11.2018	Town hall, Badulla	54	Welders, government officers,
20	06.01.2019	Hokandara Temple , Hokandera	52	Welders. Community leaders
21	02.02.2019	Diyasaru park, Battaramulla	51	Public communities, School children

Source: PMU.

Mobile awareness campaigns were conducted as follows:

	Date	Conducted AG Division area	No. of welding workers participated in the awareness campaign
22	11.08.2018	Kilinochchi	34
23	17.08.2018	Timbirigasyaya	76
24	21.08.2018	Negombo/Minuwangoda	57
25	22.08.2018	Gampaha	64
26	23.08.2018	Nittambuwa	51

Source: PMU.

Altogether nine capacity-building workshops have been conducted as follows:

	Date	Title	Participants mainly from Organization	No. Of participants
1	10-Jan-18	Inventory Training Workshop with Dr. Carlo Lupi	CEB, EML, MMDE, UNIDO	49

2	30-Jan-18	Curriculum Development Workshop for Universities	UOP,UOR,DOA,UOS,UNIDO, MMDE	32
3	06.Mär.18	Inventory Training Workshop 1	CEB	65
4	7-Mar-18	Inventory Training Workshop 2	CEB, UNIDO	50
5	12-Mar-18	Inventory Training Workshop 3	CEB,	48
6	22-Mar-18	Curriculum Development Workshop for Schools	Kandy district Schools and UOP	42
7	27-Mar-18	Inventory Training Workshop 4	CEB, UNIDO	52
8	29-Mar-18	Inventory Training Workshop 5	CEB	55
9	3-May-18	Curriculum Development Workshop for Vocational Training Institutes	NITA,TVEC,VTASL, OUSL,DTET, CGTTI, UOTEC,NYSC,DOSS,SITA	33

Source: PMU, workshop reports.

Training manuals have been developed for introduction at universities, vocational training institutes and schools (starting with primary). For this, a Cooperation Agreement was signed between the MMDE and the Centre for Environmental Studies (CES), University of Peradeniya. According to the Cooperation Agreement, the CES was responsible for developing courses for the subject areas related to POPs, including PCBs and training of trainers (TOT). The CES has carried out very detailed work to establish the requirements of schools (each Grade), universities and vocational training and prepared detailed manuals for each.

The CES gathered information from all related institutes including the Faculties of Medicine, Dental Sciences, Agriculture, Science, Engineering and analysed the gaps in the syllabi of the institutes related to chemicals. Based on that, the CES, together with the Heads of Departments of the identified Faculties, then prepared the curriculum and modules, including identification of Degree for introduction of course on Persistent Bio-accumulative and Toxic Chemicals (PBTs), with corresponding credits. The CES received positive feedback from the different Faculties with respect to the curriculum. Courses are expected to be introduced in the year 2020. In some Faculties, even the practical side of sampling and testing – Measurement and analysis – will be included in the course.

A similar procedure was followed for preparing the curriculum for schools - GAP analysis was carried out in existing curriculum with respect to PBTs. Relevant subject areas were identified. Working together with school teachers, effective delivery methods were identified, as well as co-curricular activities, according to age and competency level to prepare the curriculum to meet the right level of the target group. A Teachers' Guide was also prepared. To introduce new curriculum in school, the curriculum has to be approved by the National Institute of Education, and then by the Ministry of Education.

Various Ministries are involved in vocational training in Sri Lanka. The CES identified relevant Ministries and relevant courses as well as main subject areas. General course and case study according to the course has been developed.

Moreover, the CES developed an innovative app – QuizUp – with multiple choice questions, which was demonstrated to the evaluation.

Outcome 1: ongoing.

Outcome 2: Policy and regulations relevant to PCBs formulated and enforced

Output 2.1: Policy and regulatory framework developed and enforced for PCB management

A 2.1.1: Analysis of the gaps and barrier of the existing regulation

A 2.1.2: Drafting and adoption of a specific PCB regulation; amendment of norms on waste management, environmental quality as necessary under the National Environmental Act.

A 2.1.3: Development of a practical strategy for PCB regulation implementation and enforcement.

In Sri Lanka, under the current existing Laws, ‘polluter pays principle’ does not exist. A National Legal Expert was recruited to prepare the suggestions for the formulation of 6 gazette regulations. The Regulatory Gap Analysis Report has been prepared by the Legal Expert in 2017. The Gap Analysis found that the use of Industrial Chemicals can be regulated to some extent by the provisions of the National Environmental Act, which however are generic provisions and not specifically on POPs. The Gap Analysis, including a Concept Paper with suggestions for the formulation of the framework legislation, is being reviewed by the Legal Department of the MMDE. The ‘polluter pays principle’ has been proposed in the Amendment.

Outcome 2: ongoing.

Outcome 3: ESM system for 1000 tons of PCBs established

Output 3.1: PCB wastes collected, packaged, transported and stored

A 3.1.1: Collection and packaging of PCBs equipment for storage and transportation.

A 3.1.2: PCB contaminated equipment safely transported and stored to the interim storage facility

Activities under Output 3.1 can commence only after the completion of the inventory [unless they are started with the contaminated oil from the welding transformers].

Output 3.2: *PCB wastes disposed and PCB containing equipment decontaminated based on selected technology option*

A 3.2.1: Conduct a feasibility analysis of commercially available technologies (cement kiln, chemical dehalogenation)

A 3.2.2: Selection and procurement of PCB disposal technology / services

A 3.2.3: Disposal of 1000 t of PCBs and PCB containing equipment

The evaluation visited the existing Cement Kiln, INSEE Cement Kiln in Puttalam. It encompasses well-equipped laboratories, with potential for extending/expanding capacity. The laboratory possesses a GC for PCB analysis; however, it was not working and in need of repair at the time of the evaluation mission. PCB-contaminated oil has been destructed in a trial at the Cement Kiln in the past¹³ (2007).

For the selection and procurement of PCB disposal technology/services, UNIDO's procurement process would need to be followed. Further, the selected entity/operator would have to apply for approval from the Central Environmental Authority of Sri Lanka to be established in Sri Lanka and to carry out the disposal, in case not already established in Sri Lanka with all necessary approvals.

Disposal of PCBs and PCB-contaminated equipment can commence only after the inventory has been done, unless project decides to start with the disposal of contaminated oil from the welding transformers.

Output 3.3: *Long-term strategy on PCB management developed (based on project results)*

A 3.3.1: Prepare financial and technical analysis of the disposal activity

¹³ [Presentation INSEE Cement Kiln] During the preparatory activities, information about the trial was provided to all technical committee members, regulatory bodies, local academia and research institutions. A series of awareness-raising sessions were conducted, targeting CCR Operators, senior burners, production staff, drivers, loaders, helpers, shift managers, quality control department and security personnel. Community Advisory Panel was also informed about the trial. PCB containing oil was transferred to intermediate bulk containers using a diaphragm pump. Transformer oil contained approximately 56-62% of PCBs, 33-38% tri-chlorobenzene, and 5-6% tetra chlorobenzene. Proper handling, collection, packaging in appropriate containers, labelling and transportation were carried out. All containers were clearly labeled with a hazard warning label and with the name of the hazardous material, PCB contaminated. It was homogenized with heavy furnace oil (HFO) to reduce the chlorine content by agitating the mix. Final mix of 10,000 l was prepared for the kiln. The PCB oil feed rate was Trial 1: 500 l / hr; Trial 2: 1000 l / hr.

The burning zone temperature was 1450°C. Environmental Guidelines were followed for the test trial. Samples were collected and stored for analysis. The destruction and removal efficiency DRE was measured to be 99.999999843% and 99.999999896% for the two trials respectively. The trial was accepted by the regulatory bodies. The trial demonstrated that PCB had been destroyed in an irreversible and environmentally sound manner.

A 3.3.2: Draft long-term strategy for PCB management

A 3.3.3: Hold final workshop for long term strategy introduction and approval

The Guidance document is yet to be drafted, which would include the long-term strategy for PCB management. Financial and technical analysis of the disposal activity can be done after the selection of the disposal facility.

Outcome 3: yet to commence.

The project outcomes, when achieved, are considered to be commensurate with the original project objectives. All the interviewed stakeholders perceive the quality of outputs achieved so far to be very high. Several awareness-raising trainings/workshops have been conducted, reaching several people from the welding community. A tailor-made app is under consideration for conducting the inventory. The database of transformers can be automatically updated, should the app be accomplished and taken in operation as planned. The disposal of PCB waste and PCB-containing equipment can commence after the inventory has been accomplished.

3.4 Efficiency at the current stage of implementation

The extent to which:

- *The project cost is effective? Is the project using the most cost-efficient options?*
- *Has the project produced results (outputs (and outcomes)) within the expected time frame? Has project implementation been delayed, and, if it is, is it affecting cost effectiveness or results? Wherever possible, the evaluator should also compare the costs incurred and the time taken to achieve outcomes with that for similar projects. Are the project's activities in line with the schedule of activities as defined by the project team and annual work plans? Are the disbursements and project expenditures in line with budgets?*
- *Have the inputs from the donor, UNIDO and Government/counterpart been provided as planned, and were they adequate to meet the requirements? Was the quality of UNIDO inputs and services as planned and timely?*
- *Was there coordination with other UNIDO and other donors' projects, and did possible synergy effects happen?*
- *Are there delays in project implementation and if so, what are their causes?*
- *Which Alternatives exist for the PCB management system in place to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment? Which Alternatives exist for the disposal of PCB waste and PCB-containing equipment in an environmentally sound manner?*

No issues about cost effectiveness were brought to the notice of the evaluation.

Project was approved by the GEF (CEO endorsement) on 25 February 2015. Project implementation at UNIDO commenced (first PAD issued) on 4 May 2015. Expected project completion date is 30 June 2020. An overview of project expenditures is provided in the following table:

Item	Disbursement in 2015	Disbursement in 2016	Disbursement in 2017	Disbursement in 2018 (till 31 December 2018)	Total disbursement (in USD) 2015- 31.12.2018
Staff & International Consultants			15.846,43	19.607,96	35.454,39
Local travel				2.905,90	2.905,90
Nat.Consult./Staff		21.951,17	47.095,76	53.859,35	122.906,28
Contractual Services		756.346,46	682,56		757.029,02
Train/Fellowship/Study				896,22	896,22
Premises					0,00
International Meetings					0,00
Equipment			31.812,00		31.812,00
Other Direct Costs		2.356,67	1.798,60	615,46	4.770,73
Total (in USD)	0,00	780.654,30	97.235,35	77.884,89	955.774,54

Source: PMU, 13 February 2019.

Output 1.2 PCB inventory on the utility sector verified (during PPG phase) and completed (Sampling and analysis of at least 2000 transformers +5% cross check) - has been delayed. It should have been completed in the 3rd year of project implementation. As mentioned under the Section Effectiveness at the current stage of implementation, the CEB has been sub-contracted by the MMDE for the inventory. Through the identification of tires, inventory design and sampling plan was finalized by the National and International Expert, together with the CEB officials, Information collection sheets and Identification tags prepared. Manual inventory had commenced; 19 teams had been formed with 4-5 persons each. Inventory of around 10% of transformers has been done manually. However, manual inventory could not be conducted speedily, and moreover, the potential for human error was considered to be given. To avoid the possibility of human error, and to speed up the process of inventory, it was under discussion to ensure the traceability of PCB data by having an online database facility and GPS based mobile application. However, the application (app) still needs to be developed according to the requirements. At the time of the MTE, it was decided to continue with the manual inventory, and at the same time to work on the development of the app, which would enable a speedier inventory.

Output 3.1 PCB wastes collected, packaged, transported and stored and **Output 3.2** PCB wastes disposed and PCB containing equipment decontaminated based on selected technology option should have commenced in the first year of implementation. The remaining time duration of the project is considered to be stringent to accomplish the above-mentioned activities, but not completely unrealistic to accomplish. Nevertheless, no issues of cost-effectiveness were mentioned to the evaluation.

All the interviewed stakeholders emphasized the significance and relevance of the inputs provided by the PMU, the National and International Experts and reported to be very satisfied with their inputs. The PM at HQ and the PMU in Sri Lanka are reported to have effective and regular communication. Similarly, communication between the PMU and stakeholders in Sri Lanka is reported to be regular. Queries are responded to quickly, as reported in the interviews.

The Secretary of the MMDE is the National Project Director and the Director of Environment Planning and Economics is de facto the Deputy National Project Director. The National Project Coordinator is the former Deputy Director, Environment Pollution Control and Chemical Management, Environment Planning and Economics. The PMU is based at the MMDE, and besides scheduled meetings, meets and discusses project matters as necessary.

Co-finance is being spent, however, not documented/not received by the evaluation. The MMDE is spending co-finance, as per its commitment, for office space and infrastructure. The MMDE emphasized its commitment to the Stockholm Convention and to the project, and its willingness to include certain amounts (co-finance) in its budget for the following years to support activities for PCB elimination in Sri Lanka.

Further, the CEB reported to have paid for some vehicles, used to send the teams for sampling. The CEB reiterated its commitment of co-finance for the following years also. After the inventory, the amount of PCB-contaminated oil would be known, and based on that the CEB plans to include the amounts in the following years' budget.

An overview of expected co-finance is provided in the table below:

Name of Co-financier (source)	Classification	Type	Project
UNIDO	GEF Agency	Cash	89,850
		In-kind	150,000
Ministry of Mahaweli Development and Environment	National Government	In-kind	179,028
Ministry of Power and Energy	National Government	Cash	1,549, 860
Ceylong Electricity Board	Natioal Government	Cash	12,685,567
		In-kind	3,171,392
Central Envrionment Authority	National Government	In-kind	142,663
Lanka Electricity Company	National Government	In-kind	95,130
Industrial Technology Institute(ITI)	National Government	In-kind	177,667
LTL Transformers (Pvt) Limited	Private sector	Cash	54,971
		In-kind	340,694
Geocycle	Private Sector	Cash	201,093
		In-kind	59,129
Total Co-Financing			18,989,752

(Source: CEO endorsement document)

Reported synergies have taken place via a Chemical Management International Workshop, which was organized together with the UNITAR, which is reported to have complimented with this project well.

Current existing system for PCB disposal in Sri Lanka would be the Cement Kiln, which, as mentioned under Section Effectiveness, has already carried out trial tests for PCB destruction in 2007. However, for the procurement of technology/services, the UNIDO procurement procedure needs to be followed. When the procurement notice is published, it would be open for any international bidder possibly with other

relevant technology. At the current stage of implementation, Alternatives cannot be assessed.

3.5 Assessment of risks to likelihood of sustainability of project outcomes

Sustainability is understood as the likelihood of continued benefits after the GEF project ends.

- **Financial risks:**
During the evaluation mission, the MMDE and the CEB reiterated their commitment, also financial, for sustaining the project outputs and outcomes. Inventory was not completed at the time of the MTE mission, technology/service provider was not selected yet. After the completion of the inventory and sampling, the amount of PCB to be phased out would be known. Based on that, the MMDE and CEB can include the amounts the following years in their annual budget for the following year. At this stage of project implementation, the significance of financial support, after project completion, can only be stressed.
- **Sociopolitical risks:**
Socio-political risks are considered to be low. Sri Lanka signed the Stockholm Convention in 2001, ratified it in 2005, transmitted its NIP in September 2007, started updating it in 2013, and updated it (according to its obligations under the Stockholm Convention). The NIP (and other environmental projects) are situated at the MMDE, which has emphasized its commitment to the Conventions and to the project(s). Ownership at the MMDE is considered to be high. All the interviewed stakeholders highlighted the significance of the project and the elimination of PCBs, and their commitment to its elimination in Sri Lanka.
- **Institutional framework and governance risks:**
Institutional framework and governance risks can be considered to be low, after the proposed changes in legislation have been approved. Project includes a component on legal framework, under which, based on a Gap analysis, suggestions have been proposed for improved legal framework. It was being reviewed by the Legal Department. After approval and implementation into regulation, it would provide a legal framework conducive to sustainability of project outcomes. Required technical know-how is in place.
- **Environmental risks:**
Environmental risks are considered to be low.

3.6 Assessment of monitoring and evaluation (M&E) systems, long-term changes, project coordination and management

A database of inventorised transformers is planned to be prepared, which will be under the responsibility of the CEB, to maintain it, even after project completion. This was also confirmed by the CEB during the interviews.

Project document included a logical framework with indicators for achieved outputs. It also included a Workplan for project implementation. Annual progress reports have been prepared and received by the evaluation for the years 2016 and 2017. Annual PIRs have been prepared and submitted to the GEF. The MTE has taken place, as foreseen in the project document. A new workplan for the year 2019 has been prepared. The PMU in Sri Lanka is in regular contact with all the stakeholders. The PM at UNIDO HQ is in regular contact with the PMU in Sri Lanka. Each can be reached easily and timely responses are received. The UNIDO Field Office in Colombo is not directly involved in project activities; nevertheless, is very supportive and informed regularly about project activities.

The PMU has been established with Officials of the MMDE included in the PMU. An Inception Workshop, as planned in the project document, was conducted, on 16 June 2015 in Colombo. It included presentations on Sri Lanka's Obligations to the Stockholm Convention, PCB Situation in Sri Lanka, Introduction of the Project, Project Implementation, Coordination and Management Arrangement and the Way Forward. Over 50 people with around 20% women participants attended the Inception Workshop, representing various Ministries, private sector, Academia, Customs, Environmental Authority, National Cleaner Production Center and NGO.

[Cabinet Memorandum] The PSC was established based on a recommendation by the Cabinet in December 2015. Sri Lanka is party to Environmental Conventions, amongst others, the Stockholm Convention. In order to comply with its obligations under the different Conventions, Sri Lanka was in the process of implementing different projects with the support of different Multilateral Agencies/International Organizations. It was considered necessary to establish a National PSC for guiding and monitoring project activities, comprising stakeholders from government, semi-government, education, private and non-governmental sectors relevant to the field.

Members of the PSC and relevant stakeholders, as reported by the PMU to the evaluation, are:

1. Ministry of Mahaweli Development & Environment
2. Ministry of Health, Nutrition and Indigenous Medicine,
3. Ministry of Education
4. Ministry of Higher Education
5. Ministry of Industry and commerce
6. Ministry of Power and Renewable Energy
7. Ministry of Science & Technology
8. Ministry of Indigenous Medicine
9. Ministry of Local Government
10. Ministry of Rural Economic Affairs
11. Ministry of Traditional Industries and Small Enterprise Development

12. Ministry of Agriculture
13. Department of National Planning
14. Import and Export Control Department
15. Sri Lanka Customs
16. Central Environment Authority
17. Marine Environmental Protection Authority
18. Consumer Affairs Authority
19. National Gem & Jewelry Authority
20. Geological Survey and Mines Bureau
21. Ceylon Electricity Board
22. LTL Holdings (PVT) Ltd
23. Industrial Technology Institute
24. Industrial Development Board
25. Board of Investment
26. National Water Supply and Drainage Board
27. Sri Lanka Port Authority
28. Sri Lanka Sustainable Energy Authority
29. Register of Pesticides
30. National Cleaner Production Centre
31. Faculty of Chemical & Process Engineering, University of Moratuwa
32. Department of Chemistry, University of Colombo
33. Members of NGO's related to Chemical Management
34. Private Sector
35. Ministry of Finance and Planning

PSC meetings have been held on the following dates:

1	20 July 2016
2	8 September 2016
3	28 November 2016
4	20 December 2016
5	23 February 2017
6	6 April 2017
7	12 June 2017
8	2 November 2017
9	29 December 2017
10	11 April 2018

3.7 Assessment of gender mainstreaming

Project logical framework does not specifically remark gender dimensions in its interventions. A gender analysis was not included in the baseline study or needs assessment. Nevertheless, gender dimension has been recognised as a critical component in the project document. The project document acknowledges that the level of exposure to PCBs might be different depending on type, level and frequency of exposure, and identifies the exposure of male population as a vital concern. The Project plans to integrate gender mainstreaming by involving women and vulnerable groups at sector level via the Ministry of Health, Ministry of Agriculture, at the stakeholder level in workshops, and at the informational level during the awareness-raising activities.

The evaluation evidenced the participation of both genders in the evaluation meetings, and did not evidence a lack of participation of any one gender. Both women and men are expected to benefit equally from project interventions; men probably nevertheless more. Owing to the nature of work, it can be expected that more men come in touch with PCB-contaminated equipment. Hence, they are expected to benefit more from project interventions.

4. Conclusions, recommendations, lessons learnt

4.1 Key Conclusions and Recommendations

Conclusions	Recommendations
<p>Ownership and Relevance</p> <p>Considered highly relevant by all interviewed stakeholders interviewed:</p> <ul style="list-style-type: none"> • Ministry of Mahaweli Development and Environment • Central Environmental Authority • CEB • UNIDO • Academia • NGO • Compliance with the obligations under the Stockholm Convention <p>In line with the strategies and policies of</p> <ul style="list-style-type: none"> • Sri Lanka (NIP) • GEF • UNIDO 	

<p>Ownership is considered to be high. Overall, highly relevant for the management and elimination of PCBs – leading to health and social benefits</p>	<p>Continued cooperation and active participation of all stakeholders</p>
<p>Effectiveness at current stage of implementation</p> <p>Project Management Unit (PMU) in place</p> <p>PSC in place</p> <p>National Experts on board and activities conducted / ongoing</p> <p>Outcome 1: Institutional capacities and stakeholders' awareness on PCB issues strengthened</p> <p>Output 1.1: Technical and human resources capacity for PCB management and disposal strengthened.</p> <ul style="list-style-type: none"> • 9 capacity building and awareness-raising workshops have taken place • PCB training and inventory manual drafted; administrative procedures for approval ongoing. Official Guidance document to be drafted. <p>Output 1.2: PCB inventory on the utility sector verified and completed</p> <ul style="list-style-type: none"> • Manual inventory commenced; 19 teams with 4-5 persons each formed; around 10% transformers covered • Welding transformers initially not included; however, database of almost 10,000 welding transformers established by the NGO, People-to-People. 200 samples collected, around 125 samples already analysed. • Old pure PCB oil in storage 	<ul style="list-style-type: none"> • Expedite inventory • Continue manual inventory • Consider introduction of an app to expedite inventory with the app (also expected to reduce the probability of manual typos; moreover, possibility of automatic update of database in future) • Inclusion of welding transformers and commencement of destruction of PCB-contaminated oil from the welding transformers • Despite possible adequate storage, in view of the risk of

<ul style="list-style-type: none"> • Very old transformers still stored (probably contaminated) <p>Output 1.3: Stakeholder awareness and engagement including NGOs and civil society established</p> <ul style="list-style-type: none"> • 9 awareness-raising and capacity-building workshops conducted; • Collaboration with the NGO, People-to-People Volunteers • Participation in exhibition, prepared awareness-raising materials – video, bags, books, brochures, posters • Training manuals developed for introduction at universities, vocational training institutes and schools (starting with primary) by the CES. <p>Outcome 2: Policy and regulations relevant to PCBs formulated and enforced</p> <p>Output 2.1: Policy and regulatory framework developed and enforced for PCB management.</p> <ul style="list-style-type: none"> • Gap analysis report completed • Concept paper with suggestions for the formulation of the framework legislation drafted – currently being reviewed by the Legal Department – evaluation to review the documents <p>Outcome 3: Disposal of 1000 tons of PCBs, PCB-containing equipments and wastes</p> <p>Output 3.1: PCB waste collected, packaged, transported and stored.</p>	<p>spillage/leakage, disposal at the realistic earliest time period, within the framework of the project, to be considered</p> <ul style="list-style-type: none"> • Appropriate disposal to be discussed between stakeholders and carried out at the realistic earliest time period • Continuation of capacity-building and awareness-raising activities • Provide further support and information as necessary • Expedite the inventory (app) as mentioned earlier
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<ul style="list-style-type: none"> • Yet to commence (after the completion of the inventory) <p>Output 3.2: PCB wastes disposed and PCB-containing equipment decontaminated based on selected technical option</p> <ul style="list-style-type: none"> • Yet to commence (after the completion of the inventory) • Evaluation visited existing facility, INSEE Cement Kiln, in Puttalam: <ul style="list-style-type: none"> • PCB-contaminated oil has been destructed at the above Cement Kiln in the past (2007) • Includes well-equipped laboratories, with potential for extending/expanding capacity • Possesses a GC for PCB analysis – however, not functioning currently, needs to be repaired/replaced. • New facility/operator would have to receive approval from the Central Environmental Authority (CEA), Sri Lanka to be established in Sri Lanka and to carry out the disposal. <p>Output 3.3: Long-term strategy on PCB-management developed (based on project results)</p> <ul style="list-style-type: none"> • Training and inventory manual drafted; long-term strategy in the Guidance Document, which is yet to be drafted <p>At this stage of implementation, national capacity, strong interest, support, commitment and cooperation were observed, which are conducive to implementation of project activities.</p>	<ul style="list-style-type: none"> • PSC to consider the collection, transportation and disposal of the contaminated oil from the welding transformers. • Business Plan to be prepared • PSC to consider the commencement of disposal of PCB contaminated oil from the welding transformers; explore possibilities of disposal, in line with UNIDO and national procurement procedures, as required. • Inclusion of information, including on cross-contamination, and lessons learned from the project (at project completion) in the long-term strategy. • Expedite inventory.
<p>Efficiency at current stage of implementation</p>	

<ul style="list-style-type: none"> • Inventory ongoing <ul style="list-style-type: none"> • According to timeline of activities in the PIF, should have been completed in the 3rd year of implementation • Co-finance being spent, however, not documented • No issues regarding project expenditures were mentioned to the evaluation team <p>Remain time duration of the project is considered to be slightly stringent to accomplish the inventory, selection of technology, and destruction of 1000t of PCBs/PCB-contaminated equipment; however, it is not considered to be unrealistic.</p>	<ul style="list-style-type: none"> • Expedite inventory, as several activities depend on the completion of this activity • Expenditure of co-finance to be documented.
<p>Likelihood of Sustainability and Impact</p> <p>Owing to the observed strong interest, support, cooperation, commitment and active participation of all stakeholders at current stage of implementation, particularly support and commitment (including financial) expressed by the MMDE, as well as ongoing capacity building and awareness raising activities, risks to the likelihood of sustainability of project outcomes are considered to be low.</p>	<p>Continued cooperation and active participation of all stakeholders including financial support and planning for future activities (also after project completion), possibly via inclusion in national/MMDE budget.</p>
<p>Project coordination, monitoring and management</p> <ul style="list-style-type: none"> • Project team considered to be very effective by all the interviewed stakeholders • Appropriate documentation carried out by the project team • Regular communication of stakeholders with the project team • Good cooperation with the UNIDO Representative Office in Colombo <p>Overall field coordination mechanisms effective and efficient</p>	
<p>Gender</p> <p>Participation of both genders evidenced during the evaluation meetings</p>	

4.2 Lessons learnt

Support and follow-up are necessary to document co-finance figures.

Partnership with NGO and University contributes to successful implementation of project activities.

5. Annexes

- I Organizations visited and persons interviewed
- II Documents consulted/reviewed
- III Evaluation Matrix
- IV Terms of Reference (ToR)

5.1 Organizations visited and persons interviewed

Name	Institution	Position	Role in Project
Mr. Anura Dissanayake	Ministry of Mahaweli Development and Environment (MMDE)	Secretary to the Minister	National Project Director
Ms. Dhammika Wijayasinghe	MMDE	Director, Environment Planning and Economics Division	Deputy NPD
Mr. Senarath Mahinda Werahera	MMDE	Deputy Director, Environmental Pollution Control and Chemical Management Division	National Project Coordinator
Mr. Nawaz Rajabdeen	UNIDO	National Director	
Ms. Carmela Centeno	UNIDO	Industrial Development Officer	Project Manager
Mr. Tissa Gamage	Central Environment Authority (CEA)	Official	Stakeholder
Mr. G.A. Jayantha	Ceylon Electricity Board (CEB)	Additional General Manager	CEB - Transformer owner
Mr. H.M.A. Jayrath	CEB	Deputy General Manager	CEB - Transformer owner
Mr. Krishantha Hemaratne	CEB	Chief Engineer, Condition Monitoring and Protection	CEB - Transformer owner
Prof. Mr. Parakrama Karunaratne	University of Peraduniya	Center for Environmental Studies	National Expert
LTL Transformers Pvt. Ltd.	LTL Transformers Pvt. Ltd.	Transformer storage	Stakeholder
Dr. Chamara Jayasundara	University of Peraduniya	Center for Environmental Studies	National Expert
Mr. Anuradha Prabhath Kumara	People to People Volunteers	Vice President	National Expert
Mr. Sanjeewa Chulakumara	INSEE Cement Kiln	INSEE Ecocycle Lanka General Manager	Stakeholder
Ms. Arosha Hemali	INSEE Cement Kiln	Business Development Manager	Stakeholder

5.2 Documents consulted/reviewed

GEF5 CEO endorsement document re submission signed
TOR for the Mid-term Evaluation
NIP Sri Lanka
Terms of Cooperation – MMDE / University of Perediniya
Terms of Cooperation – MMDE / EML Consultants Pvt. Ltd.
CEB – Presentation for the Mid-term Evaluation
CEB – Information Collection Format
CEB – Technical Specification
CEB – Compliance Sheet
Certificate – All Island Poster Competition
Financial Progress 2018
Newspaper articles
Presentation – Main Issues in the Management of PCBs in Sri Lanka
Presentation – Step by step Guidelines for handling of PCB material
Presentation – PCB Inventory
Presentation – Building Worker Awareness
Presentation – Handling and co-processing of PCB at INSEE
PIR – 2016
PIR – 2017
Inception Workshop Report
Inventory Progress Report – Welding sector by PPV
Voluntary National Review on the status of implementing the SDGs, 2018
Inventory Workshop List of Participants – March 2018
Inventory Workshop Agenda
Final Training Manual on PCBs in the Utility Sector
Final Training Manual on PCBs in the Welding Sector
Curricular Workshop List of Participants
Regulatory Provision in Sri Lanka – Draft Report
Educational Sector Gap Analysis
Flyer and other awareness raising material
Draft awareness raising plan and strategy report
Communication strategy

PCB short clip

TOR CEB

TOR Curriculum Expert

TOR PSC

TOR Regulatory and Technical Expert of Institute

Article – Welders PCB Contaminated Oils Sri Lanka

University Curriculum

5.3 Evaluation Matrix

Criteria / Issues	Questions	Indicators	Sources of information
Relevance of objectives	Are the objectives of the project consistent with UNIDO and the GEF policies and strategies?	<ul style="list-style-type: none"> ➤ Policies and strategies of UNIDO ➤ GEF focal areas 	<ul style="list-style-type: none"> ➤ Project document ➤ UNIDO and GEF websites
	Are the objectives of the project consistent with policies and strategies of the Democratic Socialist Republic of Sri Lanka?	<ul style="list-style-type: none"> ➤ Priorities established in the NIP of the Democratic Socialist Republic of Sri Lanka 	<ul style="list-style-type: none"> ➤ Project document ➤ NIP/NIP Update of Democratic Socialist Republic of Sri Lanka
Effectiveness at current state of implementation:	What activities have been completed since the project started in the Democratic Socialist Republic of Sri Lanka?	<ul style="list-style-type: none"> ➤ Government policies and regulations ➤ Utilities successfully participating in project ➤ Trained personnel undertaking inventory and labelling of transformers and disposal of PCB-containing equipment and wastes ➤ Monitoring system in place ➤ Awareness-raising trainings/brochures 	<ul style="list-style-type: none"> ➤ PIR 2015, 2016, 2017 ➤ Technical reports ➤ Workshop reports of capacity-building workshops ➤ Selection criteria for the technical options ➤ Results and data gathered from pilot cases ➤ Analytical reports ➤ Interviews with stakeholders (amongst others NPD, NPC, PM, NPM, PCB owners - CEB)
Assessment of risks to likelihood of sustainability of results	Financial risks, Sociopolitical risks,	<ul style="list-style-type: none"> ➤ Financial mechanisms in place ➤ Government plans ➤ Government strategies 	<ul style="list-style-type: none"> ➤ Project reports ➤ Interviews with major national stakeholders (e.g. MMDE, NPM, UNIDO, CEB)

	Institutional framework and governance risks, Environmental risks.		➤ Internet research
Efficiency at current state of implementation	Has the project been cost effective?	<ul style="list-style-type: none"> ➤ Planned outputs produced with respect to budgeted funds ➤ Delays in delivery of outputs 	<ul style="list-style-type: none"> ➤ Project reports including technical, progress, financial ➤ Interviews with NPM, UNIDO
UNIDO integration	<p>What are UNIDO's inputs in the implementation of the project?</p> <p>To what extent is UNIDO providing planned inputs and are they being provided in a timely manner?</p>	<ul style="list-style-type: none"> ➤ Contribution at meetings and workshops (PSC, inception, etc.) ➤ Communications with NPM and other national stakeholders ➤ Feedback from interviews 	<ul style="list-style-type: none"> ➤ Notes of meetings ➤ Interviews with NPM, national stakeholders and PCB owners - CEB ➤ Reports of workshops ➤ Project document

5.4 TOR



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

DRAFT

TERMS OF REFERENCE

Independent mid-term evaluation of the UNIDO project:

***Environmentally sound management and disposal of PCBs wastes
and PCB contaminated equipment in Sri Lanka***

UNIDO SAP ID: 150050

GEF ID: 5314

SEPTEMBER 2018

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I. Project background and overview

1.1.1.1.1.1.1.1.1

1. Project factsheet

Project Title	Environmentally sound management and disposal of PCBs wastes and PCB contaminated equipment in Sri Lanka
UNIDO project No. and/or SAP ID	SAP ID: 150050
GEF project ID	5314
Region	Asia and Pacific
Country(ies)	Democratic Socialist Republic of Sri Lanka
GEF focal area(s) and operational programme	GEF-5: POPs
GEF implementing agency(ies)	UNIDO
GEF executing partner(s)	Ministry of Mahaweli Development and Environment (MMDE), Ministry of Power and Energy (MPE)
Project size (FSP, MSP, EA)	FSP
Project CEO endorsement / Approval date	25 February 2015
Project implementation start date (First PAD issuance date)	01 June 2015
Expected implementation end date (indicated in CEO endorsement/Approval document)	31 May 2020
Revised expected implementation end date (if applicable)	
Actual implementation end date	
GEF project grant (excluding PPG, in USD)	4,725,000
GEF PPG (if applicable, in USD)	150,000
UNIDO co-financing (in USD)	89,850 (cash¹⁴) + 150,000 (in-kind)

¹⁴ Sourced out from GEF-PTC Facility funds. Values reflected in the PIF amended to reflect actual funds allocated for project implementation.

Total co-financing at CEO endorsement (in USD)	18,989,752 (cash+in-kind)
Materialized co-financing at project completion (in USD)	
Total project cost (excluding PPG and agency support cost, in USD; i.e., GEF project grant + total co-financing at CEO endorsement)	23,714,752
Mid-term review date	October – December 2018
Planned terminal evaluation date	

(Source: Project document)

2. Project background and context

The National Implementation Plan (NIP) for the Stockholm Convention of the Democratic Socialist Republic of Sri Lanka identified phase-out and disposal of PCBs as one of the priorities requiring immediate attention and action. The rationale and objectives of the project were derived the priorities and key objectives established by the NIP:

- (i) Develop and put in place legislation for PCB management, Establish full inventory of PCB containing equipment;
- (ii) Establish procedures for equipment maintenance; Establish appropriate PCBs analysis laboratory facilities;
- (iii) Establish and implement guidelines for phase out, transportation, storage and disposal of PCBs equipment;
- (iv) Establish progress monitoring mechanisms;
- (v) Capacity building for control and management of PCBs; and
- (vi) Disposal of existing stocks and stockpiles.

The project is funded through a GEF grant, amounting to USD 4,725,000; a UNIDO contribution of USD 239,850 (cash and in-kind); and the counterparts' co-financing of USD 18,989,752 (cash and in kind), which amount to total project budget of USD 23,714,752.

Project implementation started in June 2015 and the initial planned project end date is May 2020.

The mid-term evaluation (MTE) is scheduled to take place from October - December 2018.

3. Project objective and structure

The main objective of the proposed project is to build capacity in Sri Lanka to introduce and implement an environmentally sound management of PCB wastes stockpiles and PCB-containing equipment.

The following **3 project components** have been developed, in addition to impact monitoring and evaluation, to achieve the project objectives:

Component 1: Institutional strengthening and awareness-raising

Component 2: Policy and regulatory framework

Component 3: Disposal of PCBs, PCB-containing equipment and wastes

4. Project implementation and execution arrangements

UNIDO: is the GEF implementing agency for the project and responsible for overall project implementation, including UNIDO country-level monitoring. The UNIDO Regional Office in India and the UNIDO Focal Point in Sri Lanka are expected to play a significant role in implementation and monitoring of the project.

Ministry of Mahweli Development and Environment (MMDE): Main executing partner for the project.

Project Management Unit (PMU): to be established within the Ministry. A National Project Director (**NPD**) to be appointed from the MMDE, to chair the PSC. A National Project Coordinator (**NPC**) to be assigned also from the MMDE to oversee project activities, together with the **NPM**.

Project Steering Committee (PSC): to be composed of representatives of MMDE, representatives from relevant Ministries, UNIDO and other relevant stakeholders.

Technical Working Group (TWG): may be formed.

5. Budget information

The project is funded through a GEF grant, amounting to USD 4,725,000; a UNIDO contribution of USD 239,850 (cash and in-kind); and the counterparts' co-financing of USD 18,989,752 (cash and in kind), which amount to total project budget of USD 23,714,752.

Some financial details are shown below:

Project outcomes	GEF (\$)	Co-Financing (\$)	Total (\$)
1. Institutional capacities and stakeholders' on PCB issues strengthened	550,000	2,000,000	2,550,000
2. Policy and regulations relevant to PCBs formulated and enforced	250,000	1,000,000	1,250,000
3. ESM of PCBs established in Sri Lanka	3,400,000	14,589,752	17,989,752S
5. Impact Monitoring and evaluation	300,000	500,000	800,000
Project management cost	225,000	900,000	1,100,000
Total	4,725,000	18,989,752	23,714,752

(Source: CEO endorsement document)

Expected co-financing source breakdown is as follows:

Name of Co-financier (source)	Classification	Type	Project
UNIDO	GEF Agency	Cash	89,850
		In-kind	150,000

Ministry of Mahaweli Development and Environment	National Government	In-kind	179,028
Ministry of Power and Energy	National Government	Cash	1,549, 860
Ceylong Electricity Board	Natioal Government	Cash	12,685,567
		In-kind	3,171,392
Central Envrionment Authority	National Government	In-kind	142,663
Lanka Electricity Company	National Government	In-kind	95,130
Industrial Technology Institute(ITI)	National Government	In-kind	177,667
LTL Transformers (Pvt) Limited	Private sector	Cash	54,971
		In-kind	340,694
Geocycle	Private Sector	Cash	201,093
		In-kind	59,129
Total Co-Financing			18,989,752

(Source: CEO endorsement document)

II. Scope and purpose of the evaluation

The independent mid-term evaluation (MTE) will cover the whole duration of the project from its commencement in June 2015 till 30 September 2018 and assess the likelihood of the project achieving its intended outcomes and impacts, including their likelihood of sustainability. It will analyse project performance against the criteria: relevance, effectiveness, efficiency, likelihood of sustainability and impact.

The MTE should provide an analysis of the likelihood of attainment of the project objective(s) and the technical components or outputs. Through its assessments, the evaluation should enable the Government, counterparts, the GEF, UNIDO and other stakeholders and donors to:

- (a) Provide evidence of **results to date** and of the likelihood of outcomes and impact in the future. The assessment includes re-examination of the relevance of the objectives and other elements of project design according to the project review parameters defined in chapter V.
- (b) Identify the challenges and risks to achievement of the project objectives and to derive improving actions needed for the project to achieve maximum impact and sustainability.
- (c) Enhance project relevance, effectiveness, efficiency and sustainability by proposing a set of recommendations and/or corrective actions with a view to ongoing and future activities until the end of project implementation.

III. Evaluation approach and methodology

The mid-term evaluation will be conducted in accordance with the UNIDO Evaluation Policy¹⁵, the UNIDO Guidelines for the Technical Cooperation Programme and Project Cycle¹⁶, the GEF Monitoring and Evaluation Policy¹⁷ and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies¹⁸.

It will be carried out as an independent in-depth evaluation using a participatory approach whereby all key parties associated with the project are kept informed and regularly consulted throughout the evaluation. The evaluation team will liaise with the UNIDO project manager (PM) on the conduct of the evaluation and methodological issues.

The evaluation will be required to use different methods to ensure that data gathering and analysis deliver evidence-based qualitative and quantitative information, based on diverse sources, as necessary: desk studies and literature review, statistical analysis, individual interviews, focus group meetings, surveys and direct observation. This approach will not only enable the evaluation to assess causality through quantitative means but also to provide reasons for why certain results were achieved or not and to triangulate information for higher reliability of findings. The specific mixed methodological approach will be described in the inception report.

¹⁵ UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)

¹⁶ UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

¹⁷ GEF. (2010) The GEF Monitoring and Evaluation Policy (Evaluation Office, November 2010)

¹⁸ GEF. (2011). GEF Minimum Fiduciary Standards: Separation of Implementation and Execution Functions in GEF Partner Agencies (GEF/C.41/06/Rev.01, 3 November 2011, prepared by the Trustee)

The evaluation will develop interview guidelines. Field interviews can take place either in the form of focus-group discussions or one-to-one consultations.

The methodology will be based on the following:

1. A desk review of project documents, including, but not limited to:
 - (a) The original project document, monitoring reports (such as progress and financial reports to UNIDO and UNIDO-GEF annual Project Implementation Reports (PIRs)), output reports (case studies, action plans, sub-regional strategies, etc.), back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
 - (b) If applicable, notes from the meetings of committees involved in the project (e.g. approval and steering committees).
 - (c) Other project-related material produced by the project.
2. The evaluation will use available models of (or reconstruct if necessary) theory of change for the different types of intervention (enabling, capacity, investment, demonstration). The validity of the theory of change will be examined through specific questions in interviews and possibly through a survey of stakeholders.
3. Counterfactual information: In those cases where baseline information for relevant indicators is not available, the evaluation will aim at establishing a proxy-baseline through recall and secondary information.
4. Interviews with project management and technical support including staff and management at UNIDO HQ and in the field and – if necessary - staff associated with the project's financial administration and procurement.
5. Interviews with project partners and stakeholders, including, among others, government counterparts, GEF OFP, project stakeholders, and co-financing partners as shown in the corresponding sections of the project documents.
6. On-site observation of results achieved by demonstration projects, including interviews of actual and potential beneficiaries of improved technologies.
7. Interviews and telephone interviews with intended users for the project outputs and other stakeholders involved in the project. The evaluation shall determine whether to seek additional information and opinions from representatives of any donor agency(ies) or other organizations.
8. Interviews with the relevant UNIDO Field/Regional Offices (in India and Sri Lanka), to the extent that it was involved in the project, and the project's management members and the various national and sub-regional authorities dealing with project activities as necessary. If deemed necessary, the evaluation shall also gain broader perspectives from discussions with relevant GEF Secretariat staff.
9. Other interviews, surveys or document reviews as deemed necessary by the evaluation and/or UNIDO PM for triangulation purposes.
10. The inception report will provide details on the methodology used by the evaluation and include an evaluation matrix.

IV. Evaluation team composition

The evaluation team will be composed of one international evaluation consultant acting as the team leader, accompanied by one international technical expert. The consultants will be contracted by UNIDO. The tasks of each team member are specified in the job descriptions annexed to these terms of reference.

The evaluation team is required to provide information relevant for follow-up studies, including mid-term evaluation verification on request to the GEF partnership up to three years after completion of the mid-term evaluation.

Members of the evaluation team must not have been directly involved in the design and/or implementation of the projects/programme under evaluation.

The UNIDO project manager and the project teams in the participating countries will support the evaluation team. GEF OFP will, where applicable and feasible, also be briefed and debriefed at the start and end of the evaluation mission.

V. Time schedule and deliverables

The evaluation is scheduled to take place from 1 October – 31 December 2018. The evaluation mission is planned for October 2018. At the end of the field mission, there will be a presentation of the preliminary findings for all stakeholders involved in this project/programme.

After the evaluation mission, the evaluation team will come to UNIDO HQ for debriefing and presentation of the preliminary findings of the mid-term evaluation. This can however, also be done online via any web-conference tool. The draft MTE report will be submitted 4 to 6 weeks after the end of the mission. The draft MTE report is to be shared with the UNIDO PM, and other relevant stakeholders for receipt of comments. The evaluation team is expected to revise the draft MTE report based on the comments received, edit the language and form and submit the final version of the MTE report in accordance with UNIDO standards.

VI. Project evaluation parameters

6.

The evaluation team will rate the projects. The **ratings for the parameters described in the following sub-chapters A to J will be presented in the form of a table** with each of the categories rated separately and with **brief justifications for the rating** based on the findings of the main analysis. An overall rating for the project should also be given.

A. Project design

Project design quality assessment criteria derive from the logical framework approach (LFA) methodology, leading to the establishment of LogFrame Matrix (LFM) and the main elements of the project, i.e. overall objective, outcomes, outputs, to defining their causal relationship, as well as indicators, their means of verification and the assumptions.

The evaluation will examine the extent to which:

- The project's design is adequate to address the problems at hand;
- The project has a clear thematically focused development objective, the attainment of which can be determined by a set of verifiable indicators;
- The project was formulated based on the logical framework (project results framework) approach;
- Was there a need to reformulate the project design and the project results framework given changes in the country and operational context?
- All GEF-5 projects have incorporated relevant environmental and social risk considerations into the project design, established at the time of project design.

B. Implementation Performance at current stage of implementation

a) Relevance and ownership

The evaluation will examine the extent to which the project is relevant to the:

- National development and environmental priorities and strategies of the Government and the population, and regional and international agreements. See possible evaluation questions under "Country ownership/drivenness" below.
- Target groups: relevance of the project's objectives, outcomes and outputs to the different target groups of the interventions (e.g. companies, civil society, beneficiaries of capacity building and training, etc.).
- GEF's focal areas/operational programme strategies: In retrospect, were the project's outcomes consistent with the GEF focal area(s)/operational program strategies? Ascertain the likely nature and significance of the contribution of the project outcomes to the wider portfolio of POPs.
- Does the project remain relevant taking into account the changing environment?

b) Effectiveness at current stage of implementation

- The evaluation will assess the objectives and current results (results to date)
- The evaluation will assess to what extent results at various levels, including outcomes, if any at this current stage of implementation, have been achieved. In detail, the following issues will be assessed: To what extent have the expected outputs, and outcomes, if any, been achieved or are likely to be achieved? Has the project generated any results that

could lead to changes of the assisted institutions? Have there been any unplanned effects?

- Are the project outcomes commensurate with the original or modified project objectives? If the original or modified expected results are merely outputs/inputs, the evaluators should assess if there were any real outcomes of the project and, if there were, determine whether these are commensurate with realistic expectations from the project.
- How do the stakeholders perceive the quality of outputs? Are the targeted beneficiary groups actually being reached?
- What outputs and outcomes has the project achieved so far (both qualitative and quantitative results)? Has the project generated any results that could lead to changes of the assisted institutions? Have there been any unplanned effects?
- Identify actual and/or potential longer-term impacts or at least indicate the steps taken to assess these (see also below “monitoring of long term changes”). Wherever possible, evaluators should indicate how findings on impacts will be reported in future.
- Is a PCB management system in place to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment? Has the disposal of PCB waste and PCB-containing equipment in an environmentally sound manner commenced? How is it being carried out?

c) Efficiency at current stage of implementation

The extent to which:

- The project cost is effective? Is the project using the most cost-efficient options?
- Has the project produced results (outputs (and outcomes)) within the expected time frame? Has project implementation been delayed, and, if it is, is it affecting cost effectiveness or results? Wherever possible, the evaluator should also compare the costs incurred and the time taken to achieve outcomes with that for similar projects. Are the project’s activities in line with the schedule of activities as defined by the project team and annual work plans? Are the disbursements and project expenditures in line with budgets?
- Have the inputs from the donor, UNIDO and Government/counterpart been provided as planned, and were they adequate to meet the requirements? Was the quality of UNIDO inputs and services as planned and timely?
- Was there coordination with other UNIDO and other donors’ projects, and did possible synergy effects happen?
- Are there delays in project implementation and if so, what are their causes?
- Which Alternatives exist for the PCB management system in place to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment? Which Alternatives exist for the disposal of PCB waste and PCB-containing equipment in an environmentally sound manner?

d) Assessment of risks to likelihood of sustainability of project outcomes

Sustainability is understood as the likelihood of continued benefits after the GEF project ends. Assessment of sustainability of outcomes will be given special attention but also technical, financial and organization sustainability will be reviewed. This assessment should explain how the risks to project outcomes will affect continuation of benefits after the GEF project ends. It will

include both exogenous and endogenous risks. The following four dimensions or aspects of risks to sustainability will be addressed:

- **Financial risks.** Are there any financial risks that may jeopardize sustainability of project outcomes? What is the likelihood of financial and economic resources not being available once GEF assistance ends? (Such resources can be from multiple sources, such as the public and private sectors or income-generating activities; these can also include trends that indicate the likelihood that, in future, there will be adequate financial resources for sustaining project outcomes.) Was the project successful in identifying and leveraging co-financing?
- **Sociopolitical risks.** Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that project benefits continue to flow? Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?
- **Institutional framework and governance risks.** Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? Are requisite systems for accountability and transparency and required technical know-how in place?
- **Environmental risks.** Are there any environmental risks that may jeopardize sustainability of project outcomes? Are there any environmental factors, positive or negative, that can influence the future flow of project benefits? Are there any project outputs or higher level results that are likely to have adverse environmental impacts, which, in turn, might affect sustainability of project benefits? The evaluation should assess whether certain activities will pose a threat to the sustainability of the project outcomes.

e) Assessment of monitoring and evaluation (M&E) systems

- **M&E design.** Did the project have an M&E plan to monitor results and track progress towards achieving project objectives? The evaluation will assess whether the project met the minimum requirements for the application of the Project M&E plan (see annex 3).
- **M&E plan implementation.** The evaluation should verify that an M&E system was in place and facilitated timely tracking of progress toward project objectives by collecting information on chosen indicators continually throughout the project implementation period; annual project reports were complete and accurate, with well-justified ratings; the information provided by the M&E system was used during the project to improve performance and to adapt to changing needs; and the project had an M&E system in place with proper training for parties responsible for M&E activities to ensure that data will continue to be collected and used after project closure. Was monitoring and self-evaluation carried out effectively, based on indicators for outputs, outcomes and impacts? Are there any annual work plans? Was any steering or advisory mechanism put in place? Did reporting and performance reviews take place regularly?
- **Budgeting and Funding for M&E activities.** In addition to incorporating information on funding for M&E while assessing M&E design, the evaluators will determine whether M&E was sufficiently budgeted for at the project planning stage and whether M&E was adequately funded and in a timely manner during implementation.

f) Monitoring of long-term changes

The M&E of long-term changes is often incorporated in GEF-supported projects as a separate component and may include determination of environmental baselines; specification of indicators; and provisioning of equipment and capacity building for data gathering, analysis, and use. This section of the evaluation report will describe project actions and accomplishments towards establishing a long-term monitoring system. The evaluation will address the following questions:

- a. Did the project contribute to the establishment of a long-term monitoring system? If it did not, should the project have included such a component?
- b. What were the accomplishments and shortcomings in establishment of this system?
- c. Is the system sustainable — that is, is it embedded in a proper institutional structure and does it have financing? How likely is it that this system continues operating upon project completion?
- d. Is the information generated by this system being used as originally intended?

g) Project coordination and management

The extent to which:

- The national management and overall coordination mechanisms have been efficient and effective? Did each partner have assigned roles and responsibilities from the beginning? Did each partner fulfil its role and responsibilities (e.g. providing strategic support, monitoring and reviewing performance, allocating funds, providing technical support, following up agreed/corrective actions)?
- The UNIDO HQ-based management, coordination, monitoring, quality control and technical inputs have been efficient, timely and effective (e.g. problems identified timely and accurately; quality support provided timely and effectively; right staffing levels, continuity, skill mix and frequency of field visits)?

h) Assessment of gender mainstreaming

Guidance on integrating gender is included in Annex 4.

The evaluation will consider, but need not be limited to, the following issues that may have affected gender mainstreaming in the project:

- Did the project/programme design adequately consider the gender dimensions in its interventions? If so, how?
- Was a gender analysis included in a baseline study or needs assessment (if any)?
- How gender-balanced was the composition of the project management team, the Steering Committee, experts and consultants and the beneficiaries?
- Have women and men benefited equally from the project's interventions? Do the results affect women and men differently? If so, why and how? How are the results likely to affect gender relations (e.g., division of labour, decision-making authority)?
- Are women/gender-focused groups, associations or gender units in partner organizations consulted/included in the project?

- To what extent were socioeconomic benefits delivered by the project at the national and local levels, including consideration of gender dimensions?

VII. Reporting

Inception report

These terms of reference (TOR) provide some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the evaluation team will prepare a short inception report that will operationalize the TOR relating to the evaluation questions and provide information on what type of and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible in the UNIDO Office for Independent Evaluation.

The inception report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework (“evaluation matrix”); division of work between the international evaluation consultants; mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable¹⁹.

Evaluation report format and review procedures

The draft report will be delivered to UNIDO PM (the suggested report outline is in annex 1) and national stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report provided by the stakeholders will be sent to UNIDO PM for collation and onward transmission to the project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the mid-term evaluation report.

A presentation of preliminary findings will take place at UNIDO HQ after the field mission. This can also be done via Skype or any other web-based tele-conferencing tool, as deemed appropriate.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given in annex 1.

¹⁹ The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by the UNIDO Office for Independent Evaluation.

Evaluation work plan

The “Evaluation Work Plan” includes the following main products:

1. Desk review, briefing by project manager and development of methodology: Following the receipt of all relevant documents, and consultation with the Project Manager about the documentation, including reaching an agreement on the methodology, the desk review could be completed.
2. Inception report: At the time of departure to the field mission, all the received material has been reviewed and consolidated into the Inception report.
3. Field mission: The principal responsibility for managing this evaluation lies with UNIDO. It will be responsible for liaising with the project team to set up the stakeholder interviews, arrange the field missions, coordinate with the Government. At the end of the field mission, there will be a presentation of preliminary findings to the key stakeholders in the country where the project was implemented.
4. Preliminary findings from the field mission: Following the field mission, the main findings, conclusions and recommendations would be prepared and presented in the field and at UNIDO Headquarters.
5. A draft mid-term evaluation report will be forwarded electronically to the UNIDO Project Manager and circulated to main stakeholders.
6. Final mid-term evaluation report will incorporate comments received.

Evaluation phases	Deliverables
Desk review	Development of methodology approach and evaluation tools
Briefing with UNIDO Project Manager and other key stakeholder at HQ	Interview notes, detailed evaluation schedule and list of stakeholders to interview during field mission
Data analysis	Inception evaluation report
Field mission	Presentation of main findings to key stakeholders in the field.

Present preliminary findings and recommendations to key stakeholders in the field	
Debriefing at UNIDO HQ	Present preliminary findings and recommendations to the stakeholders at UNIDO HQ Additional interviews and analysis
Analysis of the data collected	Draft mid-term evaluation report
Circulation of the draft report to UNIDO/relevant stakeholders and revision	Final mid-term evaluation report

7.

7.1 Annex 1 - Outline of an in-depth project evaluation report

1.1.1.1.1.1.2 Executive summary

- Must provide a synopsis of the storyline which includes the main evaluation findings and recommendations
- Must present strengths and weaknesses of the project
- Must be self-explanatory and should be maximum 3-4 pages in length

I. Evaluation objectives, methodology and process

- Information on the evaluation: why, when, by whom, etc.
- Scope and objectives of the evaluation, main questions to be addressed
- Information sources and availability of information
- Methodological remarks, limitations encountered and validity of the findings

1.1.1.1.1.1.3

II. Country and project background

- Brief country context: an overview of the economy, the environment, institutional development, demographic and other data of relevance to the project
- Sector-specific issues of concern to the project²⁰ and important developments during the project implementation period
- Project summary:
 - Fact sheet of the project: including project objectives and structure, donors and counterparts, project timing and duration, project costs and co-financing
 - Brief description including history and previous cooperation
 - Project implementation arrangements and implementation modalities, institutions involved, major changes to project implementation
 - Positioning of the UNIDO project (other initiatives of Government, other donors, private sector, etc.)
 - Counterpart organization(s)

III. Project assessment

This is the key chapter of the report and should address all evaluation criteria and questions outlined in the TOR (see section VI - Project evaluation parameters). Assessment must be based on factual evidence collected and analyzed from different sources. The evaluators' assessment can be broken into the following sections:

- A. Project design
- B. Implementation performance
 - a) Relevance and ownership (report on the relevance of project towards countries and beneficiaries, country ownership, stakeholder involvement)
 - b) Effectiveness (the extent to which the development intervention's objectives and deliverables were achieved, or are expected to be achieved, taking into account their relative importance)
 - c) Efficiency (report on the overall cost-benefit of the project and partner countries' contribution to the achievement of project objectives)

²⁰ Explicit and implicit assumptions in the logical framework of the project can provide insights into key-issues of concern (e.g., relevant legislation, enforcement capacities, government initiatives)

- d) Likelihood of sustainability of project outcomes (report on the risks and vulnerability of the project, considering the likely effects of sociopolitical and institutional changes in partner countries, and its impact on continuation of benefits after the GEF project ends, specifically the financial, sociopolitical, institutional framework and governance, and environmental risks)
- e) Project coordination and management (Report on the project management conditions and achievements, and partner countries' commitment)
- f) Assessment of monitoring and evaluation systems (report on M&E design, M&E plan implementation, and budgeting and funding for M&E activities)
- g) Monitoring of long-term changes

C. Gender mainstreaming

IV. Conclusions, recommendations and lessons learned

This chapter can be divided into three sections:

A. Conclusions

This section should include a storyline of the main evaluation conclusions related to the project's achievements and shortfalls. It is important to avoid providing a summary based on each and every evaluation criterion. The main conclusions should be cross-referenced to relevant sections of the evaluation report.

B. Recommendations

This section should be succinct and contain few key recommendations. They should be:

- Based on evaluation findings
- Realistic and feasible within a project context
- Indicating institution(s) responsible for implementation (addressed to a specific officer, group or entity who can act on it) and have a proposed timeline for implementation if possible
- Commensurate with the available capacities of project team and partners
- Taking resource requirements into account.

Recommendations should be structured by addressees:

- UNIDO
- Government and/or counterpart organizations
- Donor

C. Lessons learned

- Lessons learned must be of wider applicability beyond the evaluated project but must be based on findings and conclusions of the evaluation
- For each lesson, the context from which they are derived should be briefly stated

Annexes should include the evaluation TOR, list of interviewees, documents reviewed, a summary of project identification and financial data, including an updated table of expenditures to date, and other detailed quantitative information. Dissident views or management responses to the evaluation findings may later be appended in an annex.

7.2 Annex 2 - GEF Minimum requirements for M&E²¹

Minimum requirement 1: Project design of M&E

All projects will include a concrete and fully budgeted M&E plan by the time of work program entry for full-sized projects (FSP) and CEO approval for medium-sized projects (MSP). This M&E plan will contain as a minimum:

- SMART indicators for project implementation, or, if no indicators are identified, an alternative plan for monitoring that will deliver reliable and valid information to management;
- SMART indicators for results (outcomes and, if applicable, impacts), and, where appropriate, indicators identified at the corporate level;
- Baseline for the project, with a description of the problem to be addressed, with indicator data, or, if major baseline indicators are not identified, an alternative plan for addressing this within one year of implementation;
- Identification of reviews and evaluations that will be undertaken, such as mid-term reviews or evaluations of activities; and
- Organizational set-up and budgets for monitoring and evaluation.

Minimum requirement 2: Application of project M&E

Project monitoring and supervision will include implementation of the M&E plan, comprising:

- SMART indicators for implementation are actively used, or if not, a reasonable explanation is provided;
- SMART indicators for results are actively used, or if not, a reasonable explanation is provided;
- The baseline for the project is fully established and data compiled to review progress reviews, and evaluations are undertaken as planned; and
- The organizational set-up for M&E is operational and budgets are spent as planned.

²¹ http://www.thegef.org/gef/sites/thegef.org/files/documents/ME_Policy_2010.pdf

7.3 Annex 3 – Required project identification and financial data

The evaluation report should provide information on project identification, time frame, actual expenditures, and co-financing in the following format, which is modeled after the project identification form (PIF).

I. Dates

Milestone	Expected date	Actual date
Project CEO endorsement/approval date		
Project implementation start date (PAD issuance date)		
Original expected implementation end date (indicated in CEO endorsement/approval document)		
Revised expected implementation end date (if any)		
Mid-term evaluation completion		
Planned tracking tool date		

II. Project framework

Project component	Activity type	GEF financing (in USD)		Co-financing (in USD)	
		Approved	Actual	Promised	Actual
1.					
2.					
3.					
4.					
5.					

6. Project management					
Total (in USD)					

Activity types are:

- h) Experts, researches hired
- i) technical assistance, Workshop, Meetings or experts consultation scientific and technical analysis, experts researches hired
- j) Promised co-financing refers to the amount indicated on endorsement/approval.

III. Co-financing

Source of co-financing (name of specific co-financiers)	Type of co-financier (e.g. government, GEF agency(ies), Bilateral and aid agency (ies), multilateral agency(ies), private sector, NGO/CSOs, other)	Type of co-financing	Project preparation – CEO endorsement/ approval stage (in USD)		Project implementation stage (in USD)		Total (in USD)	
			Expected	Actual	Expected	Actual	Expected	Actual
	...							
Total co-financing (in USD)								

Expected amounts are those submitted by the GEF agencies in the original project appraisal document. Co-financing types are grant, soft loan, hard loan, guarantee, in kind, or cash.

IV. UNIDO GEF-grant disbursement breakdown:

Item	Disbursement (expenditure, incl. commitment) in 2014	Disbursement in 2015	Disbursement in 2016	Total disbursement (in USD) (2014-present)
Staff & Intern Consu				
Local travel				
Staff Travel				
Nat.Consult./Staff				
Contractual Services				
Train/Fellowship/Stu				
International Meetin				

Premises				
Equipment				
Other Direct Costs				
Total (in USD)				

(Source: SAP database)

7.4 Annex 4 – Job descriptions



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International evaluation consultant, team leader
Main Duty Station and Location:	Home-based
Missions:	Mission to the Democratic Socialist Republic of Sri Lanka
Start of Contract (EOD):	01 October 2018
End of Contract (COB):	31 December 2018
Number of Working Days:	30 working days till 31 December 2018

1. PROJECT CONTEXT

The main objective of the proposed project is to build capacity in Sri Lanka to introduce and implement an environmentally sound management of PCB wastes stockpiles and PCB-containing equipment.

The following **3 project components** have been developed, in addition to impact monitoring and evaluation, to achieve the project objectives:

Component 1: Institutional strengthening and awareness-raising

Component 2: Policy and regulatory framework

Component 3: Disposal of PCBs, PCB-containing equipment and wastes

Detailed background information of the project can be found the terms of reference (TOR) for the mid-term evaluation.

2. DUTIES AND RESPONSIBILITIES

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
<p>1. Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data); determine key data to collect in the field and adjust the key data collection instrument of 3A accordingly (if needed);</p> <p>Assess the adequacy of legislative and regulatory framework relevant to the project's activities and analyze other background info.</p>	<ul style="list-style-type: none"> • Adjust table of evaluation questions, depending on country specific context; • Draft list of stakeholders to interview during the field missions; • Brief assessment of the adequacy of the country's legislative and regulatory framework. 	7 days	Home-based
<p>2. Briefing with the UNIDO project manager and other key stakeholders at UNIDO HQ (via any web-based tele-conference tool)</p> <p>Preparation of the Inception Report</p>	<ul style="list-style-type: none"> • Detailed evaluation schedule with tentative mission agenda (incl. list of stakeholders to interview and site visits); mission planning; • Division of evaluation tasks with the Technical Expert. • Inception Report 	4 days	Home-based
<p>3. Conduct field mission to Sri Lanka in October 2018²².</p>	<ul style="list-style-type: none"> • Conduct meetings with relevant project stakeholders, beneficiaries, the GEF Operational Focal Point (OFP), etc. for the collection of data and clarifications; • Agreement with the Technical Expert on the structure and content of the evaluation report and the distribution of writing tasks; • Evaluation presentation of the evaluation's initial findings prepared, draft conclusions and recommendations to stakeholders in the country, including the GEF OFP, at the end of the mission. 	4 days	Sri Lanka

²² The exact mission dates will be decided in agreement with the Consultant, UNIDO HQ, and the country counterparts.

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
4. Present overall findings and recommendations to the stakeholders at UNIDO HQ via Skype/teleconference	<ul style="list-style-type: none"> After field mission(s): Presentation slides, feedback from stakeholders obtained and discussed 	1 days	Home-based
5. Prepare the evaluation report, with inputs from the Technical Expert, according to the TOR; Coordinate the inputs from the Technical Expert and combine with her/his own inputs into the draft evaluation report. Share the evaluation report with UNIDO HQ and national stakeholders for feedback and comments.	<ul style="list-style-type: none"> Draft evaluation report. 	10 days	Home-based
6. Revise the draft project evaluation report based on comments from UNIDO PM and stakeholders and edit the language and form of the final version according to UNIDO standards.	<ul style="list-style-type: none"> Final evaluation report. 	4 days	Home-based
	TOTAL	30 days	

1.1.1.1.2 MINIMUM ORGANIZATIONAL REQUIREMENTS

Education:

Advanced degree in environment, energy, engineering, development studies or related areas

Technical and functional experience:

- Minimum of 5 years' experience in environmental/energy project management and/or evaluation (of development projects)
- Knowledge about GEF operational programs and strategies and about relevant GEF policies such as those on project life cycle, M&E, incremental costs, and fiduciary standards
- Experience in the evaluation of GEF projects and knowledge of UNIDO activities an asset
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks
- Working experience in developing countries, particularly, experience in conducting evaluations in the Asian region.

Languages:

Fluency in written and spoken English is required.

Reporting and deliverables

- 1) At the beginning of the assignment the Consultant will submit a concise Inception Report that will outline the general methodology and presents a concept Table of Contents.

- 2) The country assignment will have the following deliverables:
 - Presentation of initial findings of the mission to key national stakeholders;
 - Draft report;
 - Final report, comprising of executive summary, findings regarding design, implementation and results, conclusions and recommendations.

- 3) Debriefing at UNIDO HQ:
 - Presentation and discussion of findings;
 - Concise summary and comparative analysis of the main results of the evaluation report.

All reports and related documents must be in English and presented in electronic format.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Office for Independent Evaluation.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International Technical Expert
Main Duty Station and Location:	Home-based
Mission/s to:	Travel to Democratic Socialist Republic of Sri Lanka
Start of Contract:	01 October 2018
End of Contract:	31 December 2018
Number of Working Days:	10 days till 31 December 2018

PROJECT CONTEXT

The main objective of the proposed project is to build capacity in Sri Lanka to introduce and implement an environmentally sound management of PCB wastes stockpiles and PCB-containing equipment.

The following **3 project components** have been developed, in addition to impact monitoring and evaluation, to achieve the project objectives:

Component 1: Institutional strengthening and awareness-raising

Component 2: Policy and regulatory framework

Component 3: Disposal of PCBs, PCB-containing equipment and wastes

Detailed background information of the project can be found the terms of reference (TOR) for the mid-term evaluation.

The international technical expert will contribute to the evaluation according to the terms of reference (TOR) together with the team leader (international evaluation consultant). S/he will perform the following tasks:

<u>MAIN DUTIES</u>	Concrete/measurable outputs to be achieved	Expected duration	Location
<p>Review and analyze project documentation.</p> <p>Research on available Alternatives for PCB management system in place to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment</p> <p>Alternative methods for the disposal of PCB waste and PCB-containing equipment in an environmentally sound manner</p>	<ul style="list-style-type: none"> • List of available Alternatives and evaluation questions based on them • Inputs to the inception report • Coordination with the team leader 	2 days	Home-based
<p>Coordinate and conduct the field mission with the team leader in cooperation with the Project Management Unit, where required</p> <p>Consult with the team leader on the structure and content of the evaluation report and the distribution of writing tasks.</p>	<ul style="list-style-type: none"> • Presentations of the evaluation's initial findings, draft conclusions and recommendations to stakeholders in the country at the end of the mission. • Inputs to the evaluation report. 	4 days	Sri Lanka
<p>Prepare inputs and analysis to the evaluation report according to TOR and as agreed with the Team Leader.</p>	<p>Draft evaluation report prepared.</p>	3 days	Home-based

<u>MAIN DUTIES</u>	Concrete/measurable outputs to be achieved	Expected duration	Location
Revise the draft project evaluation report based on comments from UNIDO PM and stakeholders and edit the language and form of the final version according to UNIDO standards.	Final evaluation report prepared.	1 days	Home-based
TOTAL		10 days	

1.1.1.1.3 MINIMUM ORGANIZATIONAL REQUIREMENTS

Education:

Advanced degree in environment, energy, engineering, development studies or related areas

Technical and functional experience:

- Minimum of 10 years' experience in environmental/energy projects and specifically knowledge and experience in PCB management
- Knowledge about GEF operational programs and strategies and about relevant GEF policies
- Knowledge of UNIDO activities an asset
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks
- Working experience in developing countries

Languages:

Fluency in written and spoken English is required.

Reporting and deliverables

- 1) At the beginning of the assignment the Consultant will submit inputs to the Inception Report in consultation with the UNIDO PM and the evaluation team leader

2) The country assignment will have the following deliverables, in consultation with the UNIDO PM and the evaluation team leader:

- Presentation of initial findings of the mission to key national stakeholders;
- Inputs to the Draft report;
- Inputs to the Final report.

All reports and related documents must be in English and presented in electronic format.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Office for Independent Evaluation.

Annex 5 – Project results framework

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
Project Development Objective: To build capacity to introduce and implement a polychlorinated biphenyl (PCB) management system to reduce and/or eliminate releases from PCB waste stockpiles and PCB-containing equipment in an environmentally sound manner.	<p>Availability of a PCB regulation and national PCB phase out plan.</p> <p>Tons of PCB contaminated equipment disposed in an environmentally safe manner.</p> <p>Amount of incremental investment achieved.</p> <p>Increased Level of awareness and technical capability of institutional and private stakeholders</p>	<p>A regulation on PCB is missing.</p> <p>PCB equipment are not currently managed in compliance with Stockholm Convention.</p> <p>Co-financing is leveraged from relevant stakeholders at CEO Endorsement stage.</p> <p>Limited experience on the disposal of PCB contaminated equipment and oil by cement kiln incineration</p>	<p>A PCB regulation compliant with the SC convention is adopted and enforced.</p> <p>Committed cofinancing utilized for intended purpose.</p> <p>1000 t of PCB contaminated equipment disposed in an environmentally safe manner.</p>	<p>Project reports, interviews, certificate of analysis, proof of performance test report, certificate of disposal, survey of PCB management sites and activities.</p>	<p>Government of Sri Lanka is committed to issue and enforce a regulation on PCB.</p> <p>PCB owners are committed to environmentally sound management of their PCB equipment.</p> <p>Stocks of PCB contaminated equipment will be identified and secured for treatment / disposal.</p>
Component 1. Institutional strengthening and awareness raising					
<u>Outcome 1. Institutional capacities and stakeholders' awareness on PCB issues strengthened</u>	<p>Number of people (male/female) trained.</p> <p>Availability of an updated PCB inventory.</p> <p>Awareness on PCB issue measurably increased.</p>	<p>Limited awareness on PCB.</p>	<p>All the relevant stakeholders and the public are aware of the PCB issue.</p>	<p>Reports, official guidance, interviews-</p>	<p>MMDE and the main industrial stakeholders are committed to improve their awareness and capability on PCBs.</p>
<u>Output 1.1. Technical and human resources capacity for PCB management and disposal strengthened.</u>	<p>Number of staff (male/female) successfully trained</p> <p>Number of official guidance/policies on PCBs.</p> <p>Number of relevant stakeholders adopting best practices on PCB management.</p>	<p>Industry managers and technical staff lack awareness and knowledge on PCB issue with specific reference to cross-contamination.</p>	<p>Training of at least 30 staff from industry successfully completed.</p> <p>A PCB official guidance drafted in agreement with authority and main stakeholders.</p> <p>Communication and dissemination on the official guidance.</p>	<p>Training reports (pre and post training assessment reports, training materials).</p> <p>PCB management official guidance.</p>	<p>Institutional and industrial stakeholders are committed to attend training on PCB management.</p>

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
<u>Output 1.2 PCB inventory on the utility sector verified and completed:</u>	No. of transformers sampled and analyzed Availability of a database with PCB transformers data linked to univocal code in PCB labels	Preliminary PCB inventory carried out in 2006, and reassessed in 2012 identified 2210 transformers manufactured before 1986, of which around 48% is considered PCB contaminated, based on results of a limited number (around 10%) of transformers tested. The contaminated transformers were not labelled therefore the updating of the inventory shall include identification and tracking. At least one laboratory (Lab of the Industrial Technology Institute) is available that has the technical capacity to perform the determination of dielectric oil in transformers.	Inventory design and sampling plan Sampling and analysis of at least 2000 transformers + 5% cross check Labeling, tracing and implementation of PCB traceability database	Inventory and sampling plan. Certificate of analysis for 2100 transformers (of which 5% cross-checked) Database linked to PCB transformer label univocal code.	There is enough analytical capacity for carrying out PCB analysis as required by the project. The contracting and upgrading of laboratory equipment and methodology can be carried out timely to ensure completion of the required analytical tasks. With the commitment of project partners, the completion of the countrywide inventory envisaging sampling and analysis of 2000 transformers can be carried out within the required timeframe.
<u>Output 1.3 Stakeholder awareness and engagement including NGOs and civil society established</u>	Number of people, institute, enterprises and communities trained and informed on PCB . Number of awareness raising workshops conducted considering a measurably increased awareness on PCB issues.	Awareness on the toxicological, environmental, technological and legal aspects related to PCB is very low in the country, at all level.	Awareness raising and training programs covering environmental, toxicology, technological and managerial aspects related to PCB implemented for general public, authorities, custom, research institutions, potential PCB owners and waste managers	Awareness raising material. Interviews / questionnaire with relevant stakeholder at midterm and at project completion.	Relevant stakeholders committed and interested in increasing their capacity and awareness on PCB technical and scientific aspects.
Component 2. Policy and regulatory framework.					
<u>Outcome 2.. Policy and</u>	Number of environment	Currently, the only	Gap analysis of the	Gap analysis report,	Sri Lanka governmental

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
<u>regulations relevant to PCBs formulated and enforced</u>	policies/guidance documents adopted relevant to PCB management covering the full management cycle of PCB containing equipment, including inventory, operation, maintenance, decontamination, disposal compliant with Stockholm requirements on PCBs (Annex A, part II).	national regulation concerning PCBs is their inclusion in the waste legislation (schedule VIII). No legislation exists concerning the management of equipment containing PCBs (inventory, labeling, management plans, phase out and disposal) Sri Lanka however has submitted a NIP which includes PCBs as a priority.	existing legislation completed. Text of the framework regulations on PCBs drafted. Official guidance documents approved and demonstrated in the project. New PCB regulation approved by to the regulatory body of the Sri Lanka government.	meeting minutes, reports, copy of the officially adopted guidance, reports concerning the discussion on the draft regulation.	stakeholders are supportive in providing information on the best and fastest way to implement new regulation and guidance documents.
<u>Output 2.1. Policy and regulatory framework developed and enforced for PCB management.</u>	Number of instruments and guidance documents compliant with Stockholm requirements on PCBs (Annex A, part II) adopted. Availability of a practical strategy for implementing the new PCB regulation agreed with the stakeholders and implemented.	Currently, the only national regulation concerning PCBs is their inclusion in the waste legislation (schedule VIII). No legislation exists concerning the management of equipment containing PCBs (inventory, labeling, management plans, phase out and disposal)	A legislation on PCB drafted and adopted. An enforcement strategy which will clearly define the role and responsibilities of the local and central authority, deadline, incentive and penalties for the PCB owners, reporting and management obligation is drafted and agreed with relevant ministries and industry representatives	Meeting reports, draft of the legislation on PCB, official act related to the promulgation of the legislation, preliminary and final draft of the enforcement strategy.	Sri Lanka governmental stakeholders together with industry stakeholders are proactive in identifying proper mechanisms, specific for Sri Lanka, for the enforcement of the PCB legislation.
Component 3. Disposal of PCBs, PCB-containing equipment and wastes					
<u>Outcome 3 Disposal of 1000 tons of PCBs, PCB-containing equipments and wastes</u>	Tons of PCB handled and disposed of. Number of new businesses created Number of jobs created	Only the Holcim cement plant is currently available for PCB disposal. A functional system for the environmental sound management of PCB is lacking. Substantial risk of release of PCB in the environment as a result of	A functional system for the ESM management of PCB established. 1000 tons of PCB equipment disposed or treated. Risk of release of PCB in the environment significantly reduced.	Certificate of disposal / treatment of PCB contaminated material. Site surveys. Technology proof of performance test reports. Design of storage facilities. Supervision reports	A suitable technology will be available for treating at least 1000 t of PCB within project time span. The economic advantage chemical treatment of PCB contaminated oil may represent a viable alternative to cement kiln incineration.

Hierarchy of Objectives	Indicators	Baseline	Target	Sources of Verification	Assumptions
		mismanagement and climate related risks.			
<u>Output 3.1 PCB waste collected, packaged, transported and stored.</u>	Tons of PCB waste and PCB containing equipment safeguarded.	Currently, identification, transportation and storage of PCB equipment is not carried out in an environmentally sound way.	Guidance procedures for the packaging, temporary storage, transportation and disposal of PCBs in Sri Lanka put in place and verified. At least one temporary storage facility established or upgraded for the storage, packaging and transportation of PCBs	Guidance documents for the safe handling of PCBs. Reports and documentation concerning storage, packaging and transportation of PCBs. Supervision at PCB storage facility. Supervision reports.	Based on the experience of the project partners, a PCB guidance document can be prepared timely and effective to be adopted in project operations.
<u>Output 3.2 PCB wastes disposed and PCB containing equipment decontaminated based on selected technical option;</u>	Tons of PCBs equipment and waste successfully disposed Tons of equivalent CO ₂ prevented Tons of materials recycled or reused Commercial value of materials recycled and reuse	Currently, the only facility that can dispose PCB in Sri Lanka is the Holcim cement kiln, which can accept an equivalent of 5 kg pure PCB per hour maximum, due to constraints in chlorine input. Other options, including chemical dehalogenation, need to be explored	One or more suitable disposal or treatment facilities, compliant with the SC BAT/BEP criteria, for a capacity suitable to fulfill or exceed project needs, established, tested and permitted. At least 1000 tons of PCBs equipment or waste treated or disposed by means of such facility	Bidding documents and reports for disposal technology Proof of Performance test report of the PCB disposal facility	There may be enough economic and environmental benefit to demonstrate an additional technology in addition to cement kiln co-incineration.
<u>Output 3.3. Long-term strategy on PCB management developed (based on project results).</u>	Number of stakeholders stakeholders with PCB management plans integrated into the national PCB management plan.	A long term national plan for PCB management, with special reference with cross PCB contaminated equipment is missing	A country national plan for the phase out or treatment of PCB contaminated equipment, including specific sub-plans for the largest industries (electric power companies and large electricity consumers) drafted, agreed among stakeholders and adopted.	National plan and sectorial (electric industry, large electricity consumers) plans for the phase out or treatment of contaminated equipment.	Enough experience is accumulated in the course of the project to draft an effective long term strategy on PCB