



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



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evaluation

Final Report – PCB Cluster Evaluation

Office of Evaluation and Internal Oversight

**OFFICE OF EVALUATION AND INTERNAL OVERSIGHT
INDEPENDENT EVALUATION UNIT**

**FINAL REPORT
PCB CLUSTER EVALUATION**



**UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION**

Vienna, September 2023

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Distr. GENERAL | EIO/IEU/22/R.28 | September 2023 | Original: English

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Acknowledgements

The evaluation team would like to acknowledge and thank all individuals who volunteered their time and inputs to contribute to this evaluation. Their perspectives and inputs were essential for the assessment, and it would simply not have been possible to undertake this evaluation without their contribution.

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Abbreviations and acronyms

Abbreviation	Meaning
BAT	Best available techniques
BSP	Bhilai Steel Plant
CPRI	Central Power Research Institute
EDL	Electricité Du Laos
ESM	Environmental Sound Management
GEF	Global Environment Facility
ISID	Inclusive and Sustainable Industrial Development
M&E	Monitoring and Evaluation
METSD	Ministry of Energy Transition and Sustainable Development
MME	Maroc Maintenance Environnement
MOEFCC	Ministry of Environment Forestry and Climate Change
MSP	Medium-sized Project
MTR	Midterm Review
NC	National Coordinator
NEA	National Executing Agency
NEFCO	Nordic Finance Corporation
NGO	Non-governmental Organization
NIP	National Implementation Plan
NPC	National Project Coordinator
NPD	National Project Director
PCBs	Polychlorinated biphenyls
PDR	People's Democratic Republic of Lao
PGT	Project Guarantee Test
PM	Project Manager
PMC	Project Management Cost
PPE	Personal Protective Equipment
PIR	Project Implementation Report
PM	Project Manager
PPG	Project Preparatory Grant
POPs	Persistent Organic Pollutants
PRF	Project Results Framework
PSC	Project Steering Committee
SC	Stockholm Convention
TE	Terminal Evaluation
TOC	Theory of Change
TOR	Terms of Reference
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
WP	Work Plan

2. Executive summary

A. Introduction

The findings and information provided in this Report are based on the individual terminal evaluations of eight GEF-funded PCB projects implemented by UNIDO during the period 2010 – 2023:

- Bolivia (140296): ESM of PCB containing equipment and wastes and upgrade of technical expertise in Bolivia – GEF ID: 5646
- Republic of the Congo (140160): ESM and final disposal of PCBs – GEF ID: 5325
- Guatemala (140298): ESM and disposal of PCB-containing equipment and disposal of DDT wastes, and upgrade of technical expertise in Guatemala – GEF ID: 5325
- India (104044): ESM and final disposal of PCBs in India – GEF ID: 3775
- Lao PDR (140157): PCB Management and Disposal in the Energy Sector – GEF ID: 4782
- Morocco (170117): Making PCB management and elimination sustainable in Morocco – GEF ID: 9916
- Russian Federation (140019): ESM and final Disposal of PCBs at the Russian railroads network and other PCB owners (Phase I) – GEF ID: 4915
- Serbia (100313): ESM and final disposal of PCBs – GEF ID: 4877

B. Methodology, evaluation approach, and limitations

The individual terminal evaluations were based on the in-depth review of project documentation, interviews (face-to-face and remote) of key project stakeholders and partners as well as country missions to Bolivia and India. The planned mission in Russia was canceled due to the conflict in Ukraine. One main limitation of this evaluation was that national consultants, who would have assisted in information gathering and carrying out field visits, were not identified and recruited. In these countries (Republic of Congo, Guatemala, Lao PDR, Morocco, Russian Federation, and Serbia), information gathering was done remotely, which took time, and some stakeholders did not respond to requests made for interviews.

C. Key evaluation findings and conclusions

Relevance and Coherence

The projects are highly relevant as they are assisting the countries to fulfill their obligations concerning the Stockholm Convention in building their capacities for the phasing out and final elimination of PCBs by 2028. They are aligned with the National Development Plan and National Sustainable Development Strategy developed that

includes issues of POPs. The projects demonstrate coherence with identified PCB management issues and gaps in the countries.

Effectiveness delivery of outputs, achievement of outcomes, attainment of objectives, and impact

The projects were designed to strengthen the regulatory framework, raise awareness, and build capacity for the ESM of PCBs until their final disposal. For PCB elimination, different approaches were adopted. For countries with very significant amounts of PCB-contaminated equipment (India and the Russian Federation), the strategic approach of procuring and establishing destruction facilities running on BAT technologies was adopted. For Morocco, the project relied on the PCB decontamination platform established during a previous initiative (Pillar II of the national PCB programme), to treat lowly contaminated equipment. In Serbia, the technology has been contracted via a service provider. However, the technology producer was the Institute Nikola Tesla, which is based in the country. For the other countries with much lower amounts of PCB-contaminated equipment (Bolivia, Congo, Guatemala, and Lao PDR), the approach was to hire service providers. In terms of results, Guatemala and Serbia performed satisfactorily, meeting targets for all outputs and outcomes, and achieving the project objective by eliminating the planned amount of PCBs and DDT. In particular, Serbia succeeded in eliminating 447 tons of PCB-contaminated equipment surpassing the target of 200 tons. Bolivia, Congo, Laos, Morocco, and Russia had a moderate performance as targets related to inventory, and ESM of PCBs until final disposal were not fully achieved. Finally, the performance of the project in India was moderately unsatisfactory due to deficiencies in the establishment of the interim storage, the static destruction facility not yet commissioned, and the overall objective only partially achieved. The performance in terms of impact was assessed on the amount of POPs (PCBs including DDT for Guatemala) eliminated, which is summarized in the table below.

Country	The targeted amount to be eliminated	Amount disposed of	Comments
Bolivia	400 tons of PCBs	149.6 tons	
Congo	200 tons of PCBs	100 tons to be treated	Contract signed with a service provider, treatment not yet started
Guatemala	15 tons of DDT	19.32 tons of DDT	
	400 tons of PCBs	364.85 tons of PCBs	
India	7000 tons of PCBs	417 tons of PCBs by dechlorination mobile unit	The static facility is equipped with dechlorination technology for the treatment of lowly contaminated equipment and plasma technology for the elimination of highly contaminated equipment not yet commissioned
Lao PDR	250 tons of PCB-contaminated equipment	406 tons of contaminated equipment and 110,371 L of dielectric oil	Contract was signed with the service provider but decontamination has not yet started
Morocco	613 tons of highly contaminated equipment	63 of 250 tons eliminated	Contract signed for 250 tons, elimination on-going
	1740 lowly PCB-contaminated transformers	220 tons to be treated	Contract signed for 220 tons, treatment not yet started
Russia	3800 tons of PCB-contaminated equipment	No data available	A dechlorination unit procured by the project and already operational

			but no data on the amount treated was submitted to the evaluation A destruction facility running on plasma technology established but not yet operational
Serbia	200 tons of PCB	648 tons	Target exceeded
Total	12,878 tons of POPs* and 1740 lowly PCB-contaminated transformers	2,419 tons of POPs	

POPs*: PCBs and DDT

Efficiency

The projects faced significant delays requiring double the planned time in many cases. The reasons for these delays vary across projects and include slow start, reorganizations or changes in relevant ministries and authorities, challenges faced during inventory, COVID-19 disruptions, delays in technology or specialist entry, low awareness of partners on the requirements of the SC, political unrest, change of technology owner or change of site, failed bids, and delays for in-country official approvals and permits for construction. Despite the delays, the co-financing materialized and other factors such as quality technical support provided by consultants contributed to the delivery of quality products in the countries.

Sustainability

As risks are low for the India, Lao PDR, Morocco, the Russian Federation, and Serbia projects, the sustainability of the results is considered likely. For Bolivia, Congo, and Guatemala moderate risks have been identified: lack of resources for future investments from the public institutions' side and small PCB owners, stakeholder awareness-raising activities appear not to be sufficient to engage some stakeholders in supporting the long-term objectives, and the non-approval of the PCB law yet by the government.

UNIDO Performance

In general, the UNIDO PMs performed satisfactorily. They supported and guided national counterparts and stakeholders and proposed appropriate solutions to reported problems. Several PMs carried out missions to strengthen processes and follow up on critical phases. The hiring of international consultants for product development and technical support was satisfactory and appreciated by local counterparts for their high quality. In some cases, the UNIDO PMs promoted spaces for regional collaboration by exchanging experiences or establishing linkages and cooperation with other initiatives and agencies. UNIDO Regional Offices were not directly involved in the implementation of the projects but provided indirect support and represented the interventions at the highest level, and facilitated communication between interventions in some cases.

	Evaluation criteria	BOL	COD	GTM	IND	LAO	MAR	SRB	RUS
A	Impact	S	MS	S	MS	MS	MS	MS	S
B	Project design	S	MS	S	S	S	MS	S	S
1	• Overall design	S	MU	HS	S	S	MS	S	S
2	• Logframe	S	S	S	S	S	S	S	S
C	Project performance	MS	MS	S			MS	MS	
1	• Relevance	HS	HS	HS	HS	HS	HS	HS	HS
2	• Effectiveness	MS	MS	S	MU	MS	MS	MS	S
3	• Coherence	HS	S	HS	HS	HS	S	S	S
4	• Efficiency	MS	MU	S	MU	MU	MS	MS	S
5	• Sustainability of benefits	ML	ML	ML	L	L	L	L	L
D	Cross-cutting performance								
1	• Gender mainstreaming	MS	S	S	S	HS	S	S	S
2	• M&E: ✓ M&E design ✓ M&E implementation	S	MS	HS	MU	S	S	S	S
3	• Results-based Management	HS	S	HS	MU	MU	S	S	S
E	Performance of partners	S		HS					
1	• UNIDO	HS	MS	HS	MS	S	MS	S	S
2	• National counterparts	MS	MS	S	S	S	S	S	HS
3	• Donor	HS	S	HS	S	S	S	S	S
4	• PCB owners	HS		HS					S
F	Overall assessment	MS	MS	S	MS	MS	S	MS	S

BOL: Bolivia; COD: Republic of Congo; GTM: Guatemala; IND: India; Lao: Lao PDR; MAR: Morocco; RUS: Russian Federation; SRB: Serbia
Key: HS: Highly Satisfactory, S: Satisfactory, MS: Moderately Satisfactory, MU: Moderately Unsatisfactory, U: Unsatisfactory, HU: Highly Unsatisfactory
HL: Highly Likely, L: Likely, ML: Moderately Likely, MU: Moderately Unlikely, U: Unlikely, HU: Highly Unlikely

D. Summary of project-related recommendations

Documentation of co-finance: In some countries, information on co-financing that was executed or materialized was not available. In a few others, information was not complete as some stakeholder institutions that provided co-financing did not report on it. It is recommended that project managers ensure that national counterparts and other local partners provide complete information on co-financing periodically. If necessary, adequate guidance (e.g. development of a template for materialized co-financing) should be provided to the local partners and counterparts.

Budget: In two countries, the objective of the project could not be achieved at the onset either due to underestimation of PCB destruction cost or pledging in-kind contributions from beneficiaries instead of cash co-financing. When designing projects, project managers should allocate adequate budgets and pledge the proper type of co-financing contribution from partners and counterparts to ensure the successful delivery of goods and products that would contribute to meeting objectives.

Gender: Gender mainstreaming has not been adequately addressed in project design, as it was not a requirement at the time of project formulation, for example, under GEF-4. Nonetheless, some of the projects have ensured the appropriate involvement of both genders in project activities and, secondly, prepared gender-related awareness-raising

material. During project formulation and implementation, PMs should provide and track those activities that consider gender mainstreaming and specifically address gender, as appropriate.

Knowledge management: Projects should design and ensure a proper knowledge management system, firstly, for the exchange and transfer of knowledge during project implementation and secondly, for the transfer of knowledge after project completion.

Delays: For projects of large scope and budget, in case of delays, it may be necessary to carry out a risk analysis and feasibility study during project implementation, even if it has not been initially planned.

M&E - Medium Term Reviews: In case of delays, especially of projects of significant scope and longer delays, PMs should consider an additional MTR or other convenient activities such as self-evaluations depending on the project performance.

E. Lessons learned

The main lessons that emerged from the eight projects are summarized below:

- Despite involving renowned institutions showing high commitment and having the necessary financial capacity, projects can still run into unforeseeable challenges, which may cause unexpected delays in project implementation.
- The capacity-building requirements of partner institutions need to be taken into consideration to ensure the continuation of work and future flow of project results, after the completion of the project.
- For projects involving the strengthening of the legal and regulatory framework, which are generally very time demanding, the adequate planning of activities and timelines taking into consideration the local context would avoid delays in project implementation.
- For some specific projects, involving NGOs with the appropriate capacity and experience, and giving them the lead for project execution/monitoring is an alternative approach to ensure success.
- Approaching key stakeholders, in particular the PCB owners, with an adequate communication and information strategy, informing them on the benefits they will gain, will ensure their support, engagement, and participation in the project.
- For one project, due to the underestimation of PCB destruction cost, at the onset, the key project objective of eliminating a targeted amount of PCB-contaminated equipment could never be achieved. Planning for appropriate budgets at design would ensure the delivery of outputs, products, and results during the implementation phase.
- Procedures to select service providers are generally lengthy. For two projects implementation was much delayed due to failed bids. Launching bids with the appropriate terms of reference and taking into consideration the available budgets would not result in failed bids and thus avoid delays.
- For one project, only in-kind co-financing was pledged at design for the treatment and destruction of PCB-contaminated equipment. Given that only cash co-financing would be appropriate for such activities, there was a significant shortfall of cash funds. At the onset, the targets for these outputs could never be achieved. Planning

for the appropriate type of co-financing at design would ensure the achievement of targets for outputs and results during implementation.

2. Introduction

2.1. UNIDO PCBs portfolio background

1. The Stockholm Convention (SC) on persistent organic pollutants (POPs) recognizes that POPs including polychlorinated biphenyls (PCBs) “possess toxic properties, resist degradation, accumulate and are transported through air, water, and migratory species, across international boundaries and deposited far from their places, where they accumulate in terrestrial and aquatic ecosystems”. Exposure to PCBs is a major public health concern, in particular impacts upon women and, through them, upon future generations. PCBs are industrial products or chemicals mainly used in the energy sector, widely deployed as dielectric and coolant fluids in electrical apparatus, carbonless copy paper, and heat transfer fluids. Generally, PCBs are very stable, which explains their persistence in the environment.

2. UNIDO’s PCBs management and disposal strategy aims to create fundamental capacities within industries, governments, institutions, and PCBs owners, to comply with the PCB-related obligations under the SC. The projects implemented by UNIDO enhance the critical regulatory and legislative framework and strengthen institutions at the national, regional, and local levels to manage equipment and waste that contain PCBs in an environmentally sound manner.

3. Compliance with legislation is ensured by building capacities in local laboratories for PCB sampling and analysis, transferring technology know-how for local PCBs treatment and elimination, and undertaking inspections at PCB-contaminated sites. Environmentally sound PCB management practices reduce PCB releases and risks to human health and the environment; best practices are then further disseminated through public awareness-raising initiatives.

4. Furthermore, UNIDO’s PCB projects include the elimination and disposal of PCBs, often by leveraging the interests of the project recipient countries in non-combustion technology, which, in many cases, offer technical and financial advantages. One is on-site PCB decontamination, which solves many technical and procedural barriers for very large transformers that cannot be transported on the road to transformer maintenance facilities. The other is the regeneration of oil. Because workers would usually need to drain and dismantle these transformers, this helps reduce the workers’ risk of exposure to PCBs.

2.2. Evaluation rationale, purpose, objectives, and scope

Cluster Evaluation

5. United Nations Industrial Development Organization (UNIDO), in coordination with the Global Environment Facility (GEF) and countries, are implementing a project portfolio to meet the Stockholm Convention (SC) objectives and agreements.

6. Given the number of Environmental Sound Management (ESM) of Polychlorinated biphenyls (PCBs) projects in the last implementation phase and considering significant similarities at the project design level, a cluster evaluation approach was used in eight countries.

Table 1: List of projects for Cluster Evaluation

Country	UNIDO ID	GEF ID	Project budget (EUR)	Start	Duration (months)	Disposal Tons
SERBIA	100313	4877	2,100,000	2015	48	200
RUSSIAN FEDERATION	140019	4915	7,400,000	2014	54	3,800
INDIA	104044	3775	14,100,000	2010	60	7,700
LAO PDR	140157	4782	1,400,000	2014	48	250
BOLIVIA	140296	5646	2,000,000	2014	36	400
GUATEMALA	140298	5816	2,000,000	2016	36	15 DDT 400 PCB
CONGO	140160	5325	975,000	2015	36	200
MOROCCO	170117	9916	1,826,484	2017	36	613 PCB equipment 2.4 PCB oils

7. The following projects were evaluated:

- Bolivia: Environmentally sound management of polychlorinated biphenyl (PCB)-containing equipment and wastes and upgrade of technical expertise in Bolivia
- DR Congo: Environmentally Sound Management and Final Disposal of PCBs
- Guatemala: Environmentally sound management and disposal of polychlorinated biphenyl (PCB)-containing equipment and disposal of DDT wastes, and upgrade of technical expertise in Guatemala
- India: Environmentally Sound Management and Final Disposal of PCBs in India
- Lao PDR: PCB Management and Disposal in the Energy Sector
- Morocco: Making polychlorinated biphenyls management and elimination sustainable in Morocco
- The Russian Federation: Environmentally Sound Management and Final Disposal of PCBs at the Russian railroads network and other PCB owners (Phase I)
- Serbia: Environmentally sound management and final disposal of PCBs
-

Rationale and purpose

8. One of the main reasons for the cluster evaluation approach was to overcome some of the shortcomings present in traditional project evaluation, namely the inward-looking nature of the exercise, the timing, and high transactional costs and administrative burden.

9. This cluster approach was also to produce synergies and increase the value added in the conduct of evaluations. The efficiency gains produced by this approach would be invested in additional learning and more strategic assessments to inform UNIDO management, Member States, donors, and beneficiaries with further relevant and useful evaluation findings, conclusions, and recommendations, such as:

- a. Inter-project comparisons (e.g. differences in implementation approaches, different strategies for broader adoption)
- b. Incorporation of additional aspects normally not so well-covered (e.g. socio-economic and environmental impacts of projects, and other aspects (e.g., a global crisis such as the COVID-19 pandemic).
- c. Aggregated information for cross-cutting and recurrent issues, such as management, systemic challenges, and root causes based on several cases and therefore less anecdotal.

Objectives and Scope of the Evaluation

10. The PCB Cluster Evaluation followed the UNIDO Evaluation Policy¹, the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle², and UNIDO [Evaluation Manual](#).³ Furthermore, the GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations, the GEF Monitoring and Evaluation Policy³, and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies will be applied. The evaluation was also built upon the findings and recommendations of the Cluster Evaluation on the UNIDO POPs portfolio carried out in 2015⁴.

2.3. Evaluation approach and methodology

11. The findings and information provided in this report are based on the individual TEs of the eight projects. The cluster evaluation was carried out as an independent in-depth exercise using a participatory approach whereby all key parties associated with the eight projects (Table 1) to be evaluated were kept informed and consulted throughout the process. A team of three international consultants was involved in this cluster evaluation: Mr. Nee Sun CHOONG KWET YIVE (team leader), Ms. Suman LEDERER, and Ms. Paulina LAVERDE. During the inception phase in August 2022, the team liaised with the UNIDO Independent Evaluation Unit (ODG/EIO/IEU) on the conduct of the terminal evaluations, methodological issues, and collective report. It was agreed that the team leader (also French speaking) would be responsible for the evaluation of the Congo, Morocco, and Russia projects; Ms. Suman Lederer (also Hindi speaking) for the India, Serbia, and Lao PDR projects, and Ms. Paulina Laverde (also Spanish speaking) for the Bolivia and Guatemala projects (Table 2)

¹ UNIDO. (2021). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/2021/11)

² 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)

³ https://www.thegef.org/sites/default/files/council-meeting_documents/EN_GEF.ME_C56_02_GEF_Evaluation_Policy_May_2019_0.pdf

⁴ https://www.unido.org/sites/default/files/2015-04/FINAL_report_NIPS_CLUSTER_EVAL_20150409_0.pdf#page=81&zoom=100,120,76

Table 2: Evaluation Team Members

Name of evaluation team member	International Consultant (IC)	Responsible for:
Nee Sun CHOONG KWET YIVE, team leader	IC-1	DR Congo, Morocco, The Russian Federation
Suman LEDERER	IC-2	India, Lao PDR, Serbia
Paulina LAVERDE	IC-3	Bolivia, Guatemala

12. Furthermore, it was agreed to undertake evaluation missions in India, Russia, and Bolivia. For the other countries, it was decided to hire national consultants to assist the team in information gathering and site visits. However, due to the global political situation, it was decided not to undertake a mission to Russia but rather to rely on a national consultant for information gathering.

13. Unfortunately, despite efforts made, the UNIDO Evaluation Unit could not identify suitable national consultants for the Congo, Guatemala, Lao PDR, Morocco, Russian Federation, and Serbia projects, and the team was informed accordingly in November 2022. In this context, remote individual interviews⁵ with key stakeholders and partners for the six above-mentioned projects were carried out by the three international evaluation consultants themselves. The planning of the persons to be selected for interviews for the eight projects was done in close consultation with the UNIDO Evaluation Office and the UNIDO Project Managers (PM). A participatory approach that sought to keep informed and consult all key stakeholders of the project was used throughout the evaluation process. Where appropriate, both quantitative and qualitative evaluation methods were used to determine project achievements against the expected outputs, outcomes, and impacts.

14. The effective TEs were carried out from October 2022 to January 2023. The field missions in Bolivia and India were undertaken from 11 to 16 October and from 26 October to 5 November 2022 respectively. The remote interviews were carried out between mid-November and the end of January 2023. Before all the interviews, specific questionnaires were developed in the appropriate language (English, French, and Spanish), and emailed to all interviewees at least one week before the scheduled interview. They were requested

⁵ Using Zoom mainly

to fill out these questionnaires and email them back before the interview. As per the terms of reference for this evaluation, the evaluation team constructed and proposed a theory of change (TOC) that was used to identify causal and transformational pathways from the project outputs to outcomes and longer-term impacts, drivers, and assumptions to achieve them. In particular, the evaluation assessed the extent to which the project contributed to putting in place the conditions necessary to trigger the occurrence of the intermediate states proposed in the TOC to achieve long-term impact.

15. In preparing for interviews, the evaluators reviewed the extensive documentation provided by the UNIDO Project Managers and the National Project Coordinators for the respective countries. The use of the theory of change approach, remote interviews, and desk review of the project documents allowed the evaluators to assess causality, explain why objectives were achieved or not, and triangulate information. The full list of documents consulted and persons interviewed during the evaluation are given in Annexes 2 and 3 of the respective terminal evaluation reports.

2.4. Information sources and availability of information

16. In general, the evaluators were provided with extensive documentation, which included the project documents, the independent midterm evaluation reports where relevant, minutes of Project Steering Committee (PSC) meetings, annual and progress reports, Project Implementation Reports (PIR), awareness and training workshop reports, as well as technical reports of national experts. Whenever required, additional information was requested by email.

3. Theory of change

17. The eight projects were formulated based on a logical framework approach that included well-described outcomes, corresponding outputs and activities, verifiable indicators and sources of verification, as well as assumptions. For the eight projects, the causal pathways from outputs through outcomes to impact can be easily identified. As GEF-4 and GEF-5 projects, provide a theory of change (TOC), which is a methodology or a management tool that depicts the process of change by highlighting the causal linkages in the initiatives (the short-term, intermediate, and long-term outcomes), in the project document was not a requirement. Based on the project documentation, the evaluation team developed a common TOC for the eight projects which is displayed in Figure 1 below.

18. All eight projects had the common objective to build capacity for the ESM of PCBs in the respective countries. While there were many similarities in the nature of outcomes and outputs (strengthening of the regulatory framework, sound management and disposal of PCBs, and knowledge and information sharing), these were structured differently in the eight project documents. To develop the TOC, the evaluation team considered the common features of the eight projects and proposed three reformulated outcomes and seven reformulated outputs (see Figure 1). Furthermore, the evaluation team proposed three intermediate states that would need to emerge in the countries for long-term impact. It is anticipated that once the legislation on PCBs has been strengthened, the relevant authorities in the countries would take action for its enforcement to ensure full compliance

of PCB owners and that they are also implementing the PCB phase-out and disposal plan (Intermediate State 1). This would trigger Intermediate State 2, whereby the PCB owners would engage in establishing ESM systems for the identification and sound management of PCBs at their facilities. Finally, with the assistance and support of the relevant authorities, it is foreseen that by 2028, the PCB owners would have soundly disposed of all their PCBs, and hence would reduce the risk exposure of humans and the environment to the harmful effects of PCBs (Impact statement).

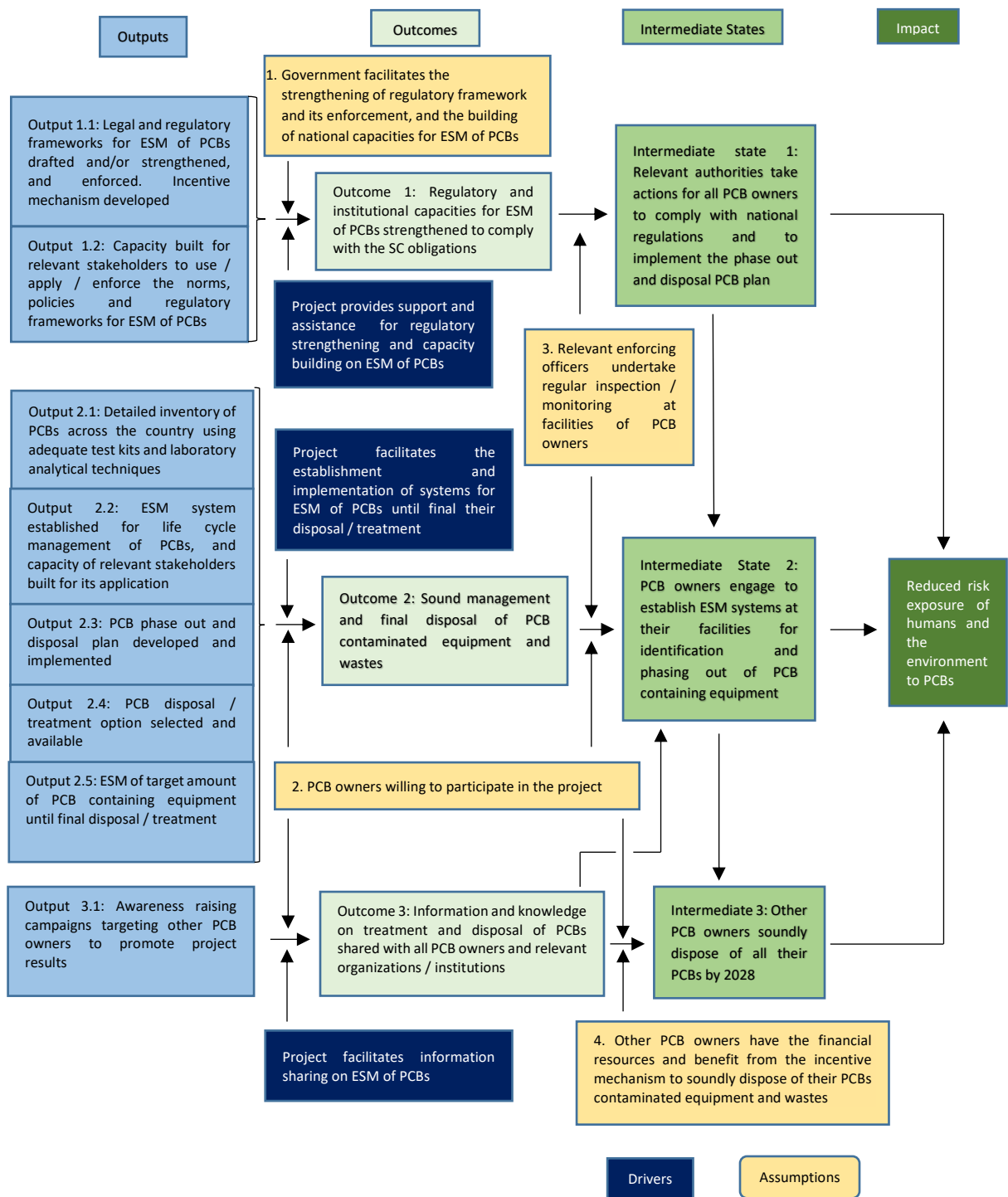


Figure 1: Theory of Change

4. Portfolio review

19. Table 3 below summarizes the eight projects that were assessed

Table 3: Portfolio Review

		Bolivia	Republic of Congo	Guatemala	India	Lao PDR	Morocco	Russian Federation	Serbia
Title		ESM of PCB containing equipment and wastes and upgrade of technical expertise in Bolivia	ESM and final disposal of PCBs	ESM and disposal of PCB containing equipment and disposal of DDT wastes, and upgrade of technical expertise in Guatemala	ESM and final disposal of PCBs in India	PCB Management and Disposal in the Energy Sector	Making PCB management and elimination sustainable in Morocco	ESM and final Disposal of PCBs at the Russian railroads network and other PCB owners (Phase I)	ESM and final disposal of PCBs
GEF ID		5646	5325	5816	3775	4782	9916	4915	4877
Project summary	Project Objective	To strengthen national capacities for the environmentally sound management (ESM) of PCBs, including disposal of up to 400 tons of PCB and related wastes and reduction/elimination of PCB releases from serviced electrical equipment at workshops and interim storage locations, to avoid cross-contamination of electrical equipment and to protect human health and the environment.	To establish an ESM system of PCBs, and dispose of 200 tons of PCBs contaminated equipment and waste by strengthening the institutional capacities of power and oil sectors for sound management of chemicals in the Republic of Congo.	To enhance inclusive and Sustainable Industrial Development (ISID) through the strengthening of national capacities for the environmentally sound management (ESM) of POPs, including disposal of 15 tons of DDT and up to 400 tons of PCB and related wastes, and reduction/elimination of PCB releases from serviced equipment at workshops and interim locations to protect human health and the environment	To reduce or eliminate the use and release of polychlorinated biphenyls (PCBs) to the environment through the development and implementation of a pilot project on the environmentally sound management (ESM) of PCBs and through the disposal of approximately 2,700 tons of pure PCBs and 5,000 tons of PCB-contaminated equipment, including PCB-contaminated mineral oils and related waste in three pilot states in India.	To facilitate the implementation of the Stockholm Convention on POPs in respect of sound management of PCBs and PCB-containing equipment and wastes including the development of specific legislations, implementation of environmentally sound management practices, inventory, testing, labeling of at least 1000 electrical equipment and disposal/decontamination of 250 tonnes of PCB-containing equipment and wastes.	To protect the environment through the safe elimination of PCB-containing oil, equipment, and wastes combined to strengthen the regulatory framework applicable to PCBs.	To build capacity to introduce and implement a PCB management system to facilitate the implementation of the Stockholm Convention, to soundly dispose of at least 3,800 tons of PCBs and PCB-containing equipment, and to maximize opportunities for PPP through the development of efficient policies and regulations	The project objective is to protect human health and the environment by reducing and eliminating the releases of and exposure to PCBs through the establishment of an environmentally sound PCB management system and final disposal of 200 tons of PCB equipment.
	Component 1	Regulatory and institutional strengthening and awareness raising for the implementation of PCB-related measures of the SC on POPs	Legal and institutional framework	Legal, regulatory, and institutional capacity for the ESM of PCBs within the strengthened and appropriate framework of POPs	Strengthening of policy and regulatory framework	Policy, legal framework, and institutional capacity	Strengthening the regulatory framework for chemicals management focusing on PCBs and compliance incentive measures	Institutional regulatory and human resources capacity building for the establishment and operation of ESM system for PCB disposal	Legal Framework
	Component 2	Environmentally sound management (ESM) of PCB-containing electrical equipment and waste	Sound management and disposal of PCBs	Environmentally sound management (ESM) of PCB-containing electrical equipment and waste, and disposal of DDT	Institutional capacity building and awareness raising	Technology transfer for sound management of PCBs in the energy sector	Promoting the adoption of PCBs safe management practices	Country-wide inventory of PCB-contaminated equipment and wastes	Institutional Capacities and Awareness Raising

	Component 3	Project Monitoring and Evaluation	M&E	Knowledge management and awareness raising	Regional implementation for ESM of PCBs	Public awareness raising, education, and dissemination of project results	PCBs elimination and promotion of Africa's first decontamination platform	ESM and disposal of PCB-contaminated equipment and wastes	Refining PCB Inventory
	Component 4	-	-	Monitoring and evaluation	Final treatment and disposal of PCB wastes	M&E	M&E	M&E	Decontamination of 200 tons of PCB Containing Equipment and Waste
	Component 5								National Assessment of Contaminated Sites
Project Cost (\$)	GEF	2,000,000	975,000	2,000,000	14,100,000	1,400,000	1,826,484	7,400,000	2,100,000
	Co-finance	9,696,435	5,009,220	13,771,100	29,000,000	5,600,000	5,700,500	34,200,000	9,129,630
Implementation arrangement	IA	UNIDO	UNIDO	UNIDO	UNIDO	UNIDO	UNIDO	UNIDO	UNIDO
	EA	MOEW	MOTE, EEC	MENR, NGO FDN	MoEFCC	MONRE	SSSD	MONRE	MOEP
Implementation and duration	CEO endorsement	20 Nov 2014	17 April 2015	07 Oct 2015	28 Dec 2009	15 April 2014	19 Oct 2017	20 Nov 2013	22 Dec 2014
	Actual start	1 Feb 2015	17 June 2015	01 Jan 2016	10 Jan 2010	May 2014	19 Jan 2018	5 Feb 2014	01 Feb 2015
	Planned closure date	1 Feb 2018	26 May 2018	07 Oct 2018	31 Jan 2015	30 May 2018	19 Jan 2021	5 Oct 2018	31 Jan 2019
	Actual closure date	31 Dec 2022	31 Dec 2022	31 Dec 2022 ^b	31 Dec 2023	30 June 2023	19 Nov 2023	31 Dec 2022	19 Nov 2023
	Planned Duration (months)	36	36	36	60	48	36	54	48
	Actual duration	95	91	83	164	108	70	104	106
Implementation approach					HQ-based implementation	HQ-based implementation			NEA
Changes during implementation		Product 2.1 National laboratory was canceled	<ul style="list-style-type: none"> Due to insufficient funding (weakness in the design), only 100 tons instead of 200 tons of PCB-contaminated equipment to be treated/destroyed. Instead of decontamination, retrofilling was undertaken 	New output 2.6 was included – MERN strengthen process	Interim storage not established; therefore, no procurement of specialized vehicles for PCB transport; one static plant with 2 types of stationary PCB-disposal units and 1 mobile unit procured, i/o 1 stationary and 2 mobile units.	PCB-decontamination serviced by SETCAR, instead of procuring decontamination equipment.	<ul style="list-style-type: none"> No contract issued to SSSD, NEA, all funds managed by UNIDO Due to a weakness in the design, as only in-kind co-financing has been pledged for component 3 at design instead of cash co-financing, targets for Outputs 3.1 and 3.2 would not be achieved at the onset 	<ul style="list-style-type: none"> Transfer of project implementation from UNIDO HQ to UNIDO CIIC, Moscow Only one instead of two mobile decontamination unit procured 	Laboratories with existing PCB-testing certification upgraded, i/o other laboratory for PCB-testing and analysis.

^b UNIDO website (March 2023) shows that the project will end on 29 Jun 2023

5. Overall performance of the evaluated projects

5.1. Project design

20. The projects were designed through a participatory approach, and appropriate organizational structures were proposed. The projects' objectives and outcomes were adequate and addressed the PCB problems identified in the need assessments, gaps analysis, barriers identification, and baselines. The logical frameworks had a good technical level and included SMART indicators. The implementation approaches were feasible and valid. Morocco, Guatemala, and Bolivia enriched their design based on previous projects implemented in their countries or regions. In India, the estimated time for the regulatory framework was insufficient, and some main activities, such as the environmental impact assessment, were not included. In Laos, the capacity-building output budget was not defined. In Congo, final disposal costs were underestimated, and a work plan description was missing. In Morocco, in-kind co-financing was promised instead of cash in the design, resulting in a significant shortfall of cash funds for PCB destruction/decontamination. In Guatemala, the M&E component did not include details such as targets, assumptions, or indicators. In Bolivia, opportunities for improvement include verification of risk categorization and checking the indicator's targets. Seven projects rated satisfactory and Congo moderate satisfactory.

Table 4: Project Design Ratings

4. Countries	5. Rating
6. Bolivia	7. Satisfactory
8. Congo	9. Moderately Satisfactory
10. Guatemala	11. Satisfactory
12. India	13. Satisfactory
14. Lao	15. Satisfactory
16. Morocco	17. Moderately Satisfactory
18. Russia	19. Satisfactory
20. Serbia	21. Satisfactory

5.2. Preparatory phase

21. In all projects, the responsible stakeholders gathered the design information through meetings and document review (mainly information collected during NIP development). In addition, the stakeholders did fieldwork in several cases to learn about maintenance

procedures and equipment management. As a result, estimates of the PCB inventory were generated, identification of the owners, diagnosis of PCB management and identification of needs, analysis of POPs management regulations, identification of the barriers of PCB owners, and definition of the co-financing partners and budgets.

22. India, Laos, Russia, Serbia, Bolivia, and Guatemala had GEF resources for PPG. The GEF resources were invested in the abovementioned activities, plus certain specific activities each country required; for example: In India, they invested in identifying pilots, evaluating profitability and sustainability, and awareness activities to ensure the participation of key stakeholders. In Russia, the GEF funds were invested in diagnosing the technical partners, an inventory exercise of 500 transformers, and identifying new partners. In Serbia, a diagnosis was made to prioritize contaminated sites. In Bolivia and Guatemala, a workshop was held with public and private representatives and tests for the PCB inventory with LX-2000 equipment. The projects in Congo, Morocco, did not apply for a PPG grant from the GEF.

Table 5: Preparatory Phase Grants

Countries	GEF Budget PPG (USD)
Bolivia	85,000
Congo	No budget
Guatemala	85,000
India	350,000
Lao	58,000
Morocco	No budget
Russia	220,000
Serbia	75,000

5.3. Relevance and Coherence

23. The projects are aligned with the GEF, ISID (Inclusive and Sustainable Industrial Development), and UNIDO priorities and obligations, contributing to compliance with the countries' Stockholm Convention agreements. In general, the projects are highly relevant and aligned with the National Development Plan and National Sustainable Development Strategy developed that includes issues of POPs.

24. The projects are coherent with the PCB management issues and gaps identified in the design and addressed in the log frames and implementation. The coherency was highly satisfactory for Bolivia, Guatemala, India, Serbia, and Laos. In Congo, Russia, and

Morocco, the coherence was rated as satisfactory. In Congo, the preliminary inventories were useful in developing the project; additionally, the project planned to include all POPs in activities regarding strengthening all relevant environmental laws. The project faced the challenge of managing big transformers (>30 tons) in Morocco, and the logistics were unavailable. These would be taken under the umbrella of GEF (Med Programme). In Russia, the project established cooperation with the Nordic Environment Finance Corporation (NEFCO); it was agreed that the project would procure the technology for PCB disposal, and NEFCO would finance the needed infrastructure.

5.4. Project Outputs and Outcomes

25. The substantive outputs and outcomes of the eight projects were designed to strengthen the regulatory framework, raise awareness, and build capacity for the ESM of PCBs until their final disposal. The assessment of the eight projects in terms of delivery of outputs and achievement of outcomes was based on the extent to which targets as well as indicators provided in the PRF have been met or achieved. Of the eight countries only Guatemala and Serbia performed satisfactorily by achieving targets for all outputs and outcomes (see Table 6 below). For outputs, Bolivia, Congo, Laos, Morocco, and Russia performed moderately well. Targets related to inventory, and ESM of PCBs until final disposal were not fully achieved for the five countries. In Congo, Morocco, and Russia the strengthening of regulatory strengthening has not been fully implemented, while draft legal documents have been developed, not all have been adopted by the respective governments, and the achievement of outcomes for these three countries have been rated moderately unsatisfactory and moderately satisfactory respectively. Performance for India has been rated moderately unsatisfactory due to a number of deficiencies such as interim storage not being established, static destruction facility not yet commissioned, and operational at the time of the TE.

Table 6: Outputs, Outcomes, and Project Objective ratings

Countries	Bolivia	Congo	Guatemala	India	Laos	Morocco	Russia	Serbia
Delivery of outputs	MS	MS	S	MU	MS	MS	MS	S
Achievement of outcomes	S	MU	S	MU	MS	MS	MS	S
Project Objective	PA	PA	A	PA	PA	PA	PA	A
Effectiveness	MS	MS	S	MU	MS	MS	MS	S

PA: partially achieved; A: achieved

5.5. Effectiveness

26. The assessment of effectiveness was based on the performance in terms of delivery of outputs and achievement of outcomes and also whether the overall objective has been achieved or partially achieved (Table 6). Guatemala was given a satisfactory rating as it has satisfactorily built capacity for ESM of PCBs and succeeded in achieving 91% and 126% of the targets for PCB and DDT sound disposal respectively. Serbia was also rated satisfactorily as it disposed of 447.94 tons of PCB-contaminated equipment exceeding the project target of 200 tons.

27. Bolivia, Congo, Morocco, and Russia were rated moderately satisfactorily as project objectives were only partially achieved. In Bolivia, for instance, only 150 tons were destroyed out of the planned 400 tons. Despite having achieved two of the three substantive outcomes, India was rated moderately unsatisfactory as the overall project objective was not met.

5.6. Efficiency

28. The following table shows relevant data of the projects which have been taken into consideration for assessing efficiency.

Table 7: Project Main Information for Efficiency Analysis

Country	Start date	Planned Duration (months)	Actual End date	Actual duration (months)	Additional time (months)	% deviation	Project budget (USD)	Expenditure (USD)	Expenditure (%)
BOLIVIA	02.2015	36	12.2022	95	59	+163.8	2,000,000	1,946,299 (06.2022)	97.31
CONGO	06.2015	36	12.2022	91	55	+152.7	975,000	896,400 (PIR 2022)	91.93
GUATE- MALA	01.2016	36	12.2022	83	47	+130.5	2,000,000	1,774,673 (12.2022)	89.00
INDIA	01.2010	60	12.2023	164	104	+173.3	14,100,000	13,105,159 (12.2022)	92.94
LAO	05.2014	48	06.2023	108	60	+125.0	1,400,000	1,212,960 (12.2022)	86.64
MOROCC O	01.2018	36	11.2023	70	34	+94.4	1,826,484	1,773,350 (02.2023)	97.09
RUSSIA	02.2014	54	12.2022	104	50	+92.59	7,400,000	7,370,279 (06.2022)	99.59
SERBIA	02.2015	48	11.2023	106	58	+120.8	2,100,000	1,600,000 (01.2023)	76.19

29. As shown in the above table, all eight projects in the cluster have required at least almost double the planned time for implementation, with reasons varying in each project and are mentioned below. The timeframes planned for each project were not adequate. In this regard, delays have been experienced in both implementation approaches – HQ-based implementation and national executing agency or PM in the country. Moreover, the achievement of the legal component, that is, preparing and approving by the Government of new or updated legislation on PCBs has also taken longer time than foreseen, although this did not have an effect on the total time of implementation of the project.

30. Reasons mentioned in more than one project were - delays in the start-up process, reorganizations or changes in relevant Ministries/authorities/staff at relevant institutions/ change of NPC/ change of UNIDO PM, resulting in duplication of activities in some cases, repeating of tenders, challenges faced during inventory, COVID-19, and delays in entry of technology or specialists into the country for the decontamination.

31. Reasons mentioned in individual projects included - low awareness of project partners on the requirements of the Stockholm Convention, political unrest, stakeholder fatigue, other prioritization by stakeholders, change of technology owner, change in in-country fund-flow arrangement, change of site for the static facility, time taken for in-country procurement at stakeholder institution, in-country official approvals and permits for construction, equipment and operations, delay to procure technology due to sanctions.

32. The total GEF budget for the projects has remained unchanged, despite the delays. For various reasons, budget reallocations were done to adapt to situations in all the projects. However, more importantly, the delays, which ranged from almost 3 to over 8 years, impacted costs for project management, and in one case the cost was almost tripled compared to the budget allocated for design.

33. No synergies with other projects were seen for the Congo, India, Lao, and Serbia projects, neither during the preparatory phase nor preparing the projects nor during implementation, except for synergies such as the involvement of the same persons or any other individual synergies, have not been reported. On the other hand, in Bolivia and Guatemala, the projects were supported by the Peruvian experience at the design and start-up implementation stage and during the implementation, through parallel processes, for example, the equipment acquisitions. Similarly for Morocco, the project was designed based on previous initiatives, and cooperation was established with the UNEP Med Partnership Programme during implementation. For the Russia project, a cooperation agreement was established with NEFCO.

34. In general, the quality of the outputs produced under the projects has been appreciated by in-country stakeholders.

35. From Section 4.9, it is clear that stakeholder institutions in all the projects have spent co-finance; documentation of spent co-finance is however lacking or inadequate in most of the cases.

5.7. Likelihood of Sustainability of project results and impact

36. The following table illustrates the ratings of risks to the sustainability of project results of eight projects:

Table 8: Risks and Sustainability Ratings

Country	Financial risk	Socio-political risk	Institutional framework and governance risk	Environmental risk	Rating on sustainability
Bolivia	Medium	Low	Medium	Low	Moderately likely
Congo	Medium	Medium	Medium	Low	Moderately likely
Guatemala	Medium	Low	Medium	Low	Moderately likely
India	Low	Low	Low	Medium	Likely
Lao	Low	Low	Low	Low	Likely
Morocco	Low	Low	Low	Low	Likely
Russia	Low	Low	Low	Low	Likely
Serbia	Low	Low	Low	Low	Likely

37. Russia, India, Serbia, Lao, and Morocco project risks are low, and the sustainability of the results is ensured. On the other hand, Guatemala, Bolivia, and Congo have moderate risks that could compromise long-term sustainability; for example, financial risks due to the lack of clear resources, or institutional framework and governance risks due to the lack of structure or social risks due to weak stakeholders' awareness.

38. High risk to the sustainability of project results, regarding financial, socio-political, institutional, governance, and environmental aspects was not identified in any of the 8 countries, and the likelihood of sustainability is moderately likely to likely for the 8 projects.

39. In Bolivia, economic risks are related to a lack of resources for future investments from the public institutions' side and small PCB owners. In Congo, the stakeholder awareness-raising activities did not appear to be sufficient to engage some stakeholders in supporting the long-term objectives of the project. For instance, low involvement of the Ministry of Hydrocarbons, a key stakeholder, was seen during implementation. EEC, the biggest PCB owner did not confirm whether they could mobilize or not the necessary funds for the elimination of the remaining PCB-PCB-contaminated transformers. Furthermore, the non-approval of the PCB law by the government could compromise the long-term sustainability of the project results. In Guatemala, economic risks are "Moderate Likely" because the ministry needs to define the available budget for maintaining the results, and PCB small owners do not have enough

resources. In India, a one-year transition time is considered to be necessary and crucial, for the key stakeholder institution, BSP, where the static facility is located, to continue operations sustainably. In Serbia, environmental risks, in case the additionally identified old wooden railway crossties are not disposed of in an environmentally-sound manner, are considered to be high; this is outside the framework of the project.

5.8. Gender mainstreaming

40. In general, gender mainstreaming was rated as satisfactory except for Bolivia and Lao. Women's participation was active in all projects; some representatives of key stakeholders were women (such as ministries representatives or operative managers). Women were involved in capacity-building and awareness activities, and in almost all cases, the targets were reached. In Bolivia, gender mainstreaming was rated as moderately satisfactory because important processes were not implemented. For example, the interaction with women living in areas close to PCB storages, capacity building for blood and breast milk analysis and training materials content specifically developed for women. In Lao and Serbia gender mainstreaming was rated as high-satisfactory; the project designed specific materials that addressed women's and children's health issues related to PCB risks, for example, brochures highlighting effects of PCBs on pregnant women; and both projects have made successful efforts to involve women in different project activities, for example, inventory and analysis at the laboratory and preparation of course material at the university in Lao, and members of consortium dealing with disposal, disposal technology and composition of the NPMU in Serbia. Finally, in the India project, gender mainstreaming was not a requirement under GEF-4; although the indicators were not tracked by gender, stakeholders mentioned that women participated actively.

5.9. Co-finance

41. There is clear evidence that in all eight countries, partnering institutions and beneficiaries (mostly electricity companies) have all contributed co-financing (in-kind or cash) through the provision of office space, human resources, and logistics for project management, inventories, and other activities, replacement of PCB-contaminated equipment (in all countries), provision of site location for the establishment of treatment facilities (in India and Russia), etc. However, as reported in Table 9 below, complete materialized co-financing information was available for Lao PDR and the Russian Federation only. For the other countries, either no co-financing reports were submitted or not all co-financiers reported on the co-financing they contributed.

Table 9: Co-financing Information

Countries	Co-financing pledged (\$)	Co-financing metalized (\$)	%
Bolivia	9,696,435 (15% in-kind)	FNA*	-
Republic of Congo	5,009,220 (43% in-kind)	FNA*	-
Guatemala	13,771,100 (50% in-kind)	10,017,440**	73
India	29,000,000 (cash & in-kind)	1,132,125	-

		4,500,000**	
Lao PDR	5,600,000 (67% in-kind)	5,000,000	89
Morocco	5,700,500 (99% in-kind)	2,547,200**; ***	45
Russian Federation	34,200,000 (42% in-kind)	29,600,000	87
Serbia	9,129,630 (79% in-kind)	9,938,000****	109

*FNA: figures not available; **some stakeholders did not report although they provided co-financing; ***MME, not one of the co-financiers at design, contributed \$ 2,008,500; ****No official document available for \$9,500,000 reported to the TE

5.10. Knowledge management

42. A proper knowledge management system, for information and knowledge exchange or dissemination, even amongst the key project stakeholders, was not established in any of the eight projects. Information was provided to stakeholders during meetings – PSC/review/other – and by disseminating output reports and documents.

43. At UNIDO HQ, all documents related to the project are saved by the UNIDO PM in different folders, which can be accessed only by the UNIDO PM and mostly also by the Project Assistant. In individual cases, it was very challenging for the evaluator to comb through the different folders to find specific relevant documents for the evaluation.

44. In the countries, all project-related information was similarly stored by the NPC, normally without any access of other persons to the folders. In case of unexpected non-availability of the NPC, as in one case, it was very challenging for the successor to continue work with the same level of available information.

45. Lessons learned or challenges faced and mitigation measures have not been documented in almost all the projects, with the sole knowledge base being the NPC or the NPMU.

46. A systematic knowledge management system, which some of the project documents foresee, was lacking, and none of the projects have made any effort towards the planning or implementation of such.

47. Most of the projects have created a publicly-accessible website, being managed by any of the key stakeholder institutions, with information including about the project, output documents, activities, Stockholm Convention, POPs, and PCBs. However, projects have not considered the existence and maintenance of the websites after project completion. Examples are:

- Bolivia: <http://snia.mmaya.gob.bo/web/modulos/pronacops/biblioteca>
- Guatemala: <https://www.marn.gob.gt/viceministro-de-recursos-naturales-y-cambio-climatico/los-residuos-y-desechos-solidos/material-de-apoyo-dimards/>
- India: <https://www.cpri.res.in>
- The Russian Federation: <https://stoppcb.ru/en/> and <https://unido.ru/>

- Serbia: www.pcbsserbia.rs

5.11. Factors facilitating or limiting the achievement of results

5.11.1 Project management and Results-based work planning

48. UNIDO was the implementing agency for the eight projects, and a UNIDO PM at headquarters was responsible for overall project management, mostly supported by a project assistant. NPCs and/or NPMs were recruited or nominated by the pertinent Ministry, who were responsible for the day-to-day management of project activities in the country; except in Guatemala and Bolivia, where NCs were selected by a committee and worked directly with the PM, the NC coordinated with the ministries, in Guatemala an NGO was hired to work as PMU with the NC guidance. In Serbia, project implementation was carried out by a National Executing Agency, and in the Russian Federation, overall project management was transferred in 2016 from UNIDO HQ in Vienna, Austria to UNIDO CIIC in Moscow. National and international experts were recruited for different activities under the different components.

49. Work plans have been prepared and updated, normally on an annual basis. However, in all the projects, it was not possible to carry out the activities as per the respective work plans, and delays have been caused, these are explained under 'Efficiency'. PMs have carried out work following results-based management and participatory approach, participation of stakeholders being managed via different ways, for example, participation in decision-making during PSC or other meetings, direct consultations, or via the NPC or the UNIDO field office, if present in the country. In some cases, adaptive management measures have been implemented, for example, in Serbia, after completion of the foreseen quantity of PCB disposal, the project has carried on with it with the remaining budget. In India, despite the delays, and the large scope of the static facility, a proper risk analysis was not done.

Table 10: Project Management and Results-Based Work Planning Rating

Country	Project Management Rating
Bolivia	Highly Satisfactory
Congo	Moderately Satisfactory
Guatemala	Highly Satisfactory
India	Moderately Satisfactory
Lao PDR	Satisfactory
Morocco	Moderately Satisfactory

Russia	Satisfactory
Serbia	Satisfactory

5.11.2 M&E

50. The M&E System design and budget of all the projects were well designed and distributed. The main products expected were the annual plans and the Project Implementation Reports, which were delivered and approved; sometimes, the reports were delivered late due to delays or extensions. Some projects did not monitor the execution of funds from co-financing partners, for example, in Bolivia and India. The PSC and TAC of each project fulfilled their role; in a few cases, the meetings were not held annually. Serbia, Laos and Russia carried out the MTR according to the work plan; India and Congo did the MTR with a significant delay; in Bolivia, due to delays, extensions and some conflicts with the ministry, the project did not execute an MTR. Instead, the PM coordinated technical visits and assessments to determine if extending the project was convenient; finally, the last extension was approved at the end of the analysis. Guatemala CEO Approval document mentioned in the M&E section that an MTR could be included, but the activity was not included in the budget; in the end, the MTR was not executed. The projects in Serbia, India and Laos completed the Final Evaluation. Bolivia, Guatemala, Lao, Morocco and Serbia rated M&E as satisfactory. The Congo and Russia projects categorized the M&E system as moderately satisfactory; the first one had some difficulties, such as the absence of measurement of impact indicators due to a lack of resources from co-financing; in the second case, the PIRs were not complete, and the PMU did not implement all MTR recommendations. The M&E system in India was rated as moderately unsatisfactory because the plan proposed was not the same as the project implemented, monitoring was not really strengthened as per the recommendation of the MTR and despite the delays, and no additional monitoring mechanism or mitigation measures were implemented to assess the risk factor.

Table 11: Monitoring and Evaluation Rating

Country	M&E Rating
Bolivia	Satisfactory
Congo	Moderately Satisfactory
Guatemala	Highly Satisfactory
India	Moderately Unsatisfactory
Lao	Satisfactory
Morocco	Satisfactory
Russia	Satisfactory
Serbia	Satisfactory

5.11.3 Stakeholder engagement and communication

51. In all the projects, key stakeholders are reported to have been well and actively engaged in different project activities; however, stakeholder fatigue has also been reported; for example, in Bolivia, active participation decreased due to the delays in activities, and the Ministry delegated several activities due to the lack of human resources. In Congo, the Ministry of Hydrocarbons was poorly involved in the project and did not fulfill its role and the petroleum companies, which committed themselves during the preparatory phase, became reluctant during implementation, to provide data for the inventory. Moreover, other reasons for a fluctuation in stakeholder engagement have been changes in persons at the institutions and restructuring at the institutions.

52. In India, Laos, Serbia, and Guatemala, key stakeholder institutions have spent considerable amounts of co-finance; in India, the key stakeholder where the static facility is based, BSP, has provided 12,000 sqm of space to construct the static facility, for which it has also taken up the costs reportedly amounting to USD 4.5 million itself; the other key stakeholder for the mobile facility, CPRI, has spent over USD 1 million to maintain and operate the mobile facility. In Laos and Serbia, it was similar, and key stakeholder institutions, EDL and Serbian Railways, and EPS have spent considerable amounts of co-finance for the inventory and replacement of transformers. Finally, in Guatemala, The National Electrification Institute (INDE) provided a shed conditioned according to international standards for the project's storage and local treatment; other PCB owners invested in their own PCB exportation process, for example, ENERGUATE disposed of 42 TM. All the key stakeholders are reported to actively participate in PSC and other meetings and consultations, and in decision-making during these meetings.

53. Mostly, the NPC or NPM is reported to be the pivot for coordination and communication with the in-country key stakeholders and with the UNIDO PM. In Congo, Bolivia, and Lao, change of NPC is reported to also have been a contributing factor to a slowing of communication and implementation of project activities. In Congo, despite communication efforts, it was not

possible to fully engage the Ministry of Hydrocarbon. In India, the key stakeholders working on / involved in the same component were in regular contact and communication with each other, however, all stakeholders were not involved.

6. Impact assessment

6.1. Progress towards Impact

54. The key indicator for progress towards impact is the amount of PCB-contaminated equipment that has been soundly disposed of. Table 12 below summarizes the targeted amount and the actual amount of PCB and DDT (for Guatemala). Of the eight countries, only Serbia succeeded more than satisfactorily in soundly disposing of the targeted amount of PCB-contaminated equipment, 648 tons soundly disposed of against a target of 200 tons. The other countries either were below the expected target or disposal activities are not yet completed (Congo, India, Lao PDR, and Morocco). For Russia, no information was available on the amount treated despite requests made. For Congo and Morocco, the targets would not be achieved due to a shortfall in funds. Out of the 12,878 tons planned initially, only 2,419 tons of POPs (DDT and PCBs) were soundly disposed of.

Table 12: Targeted and achieved amount of POPs eliminated

Country	Targeted amount of POP to be disposed of	The actual amount of POPs disposed of
Bolivia	400 tons of PCB	149.6 tons
Congo	200 tons of PCB	100 tons of PCB to be treated
Guatemala	15 tons of DDT	19.32 tons of DDT
	400 tons of PCB	364.85 tons
India	7000 tons of PCB	417 tons
Lao PDR	250 tons of PCB-contaminated equipment	Decontamination not yet started
Morocco	613 tons of highly PCB-contaminated equipment	63 tons of 250 tons already done
	1740 lowly PCB-contaminated transformers	Only 220 tons to be treated, not done yet

Russia	3800 tons of PCB-contaminated equipment	No figures available, target not achieved
Serbia	200 tons of PCB-contaminated equipment	Target exceeded, 648 tons disposed of
Total	12,878 tons of POPs and 1740 lowly PCB-contaminated transformers	2,419 tons of POPs

6.2. Economic Impact

55. The economic impact concerned mainly the cost for PCB destruction. The table below summarizes the approach adopted for sound disposal of contaminated equipment, and also the destruction cost per ton based on GEF funds invested or spent for these approaches. The destruction costs per ton reported are for total mass including the equipment plus oil in most countries, and for the mass of oil only for Lao PDR.

56. For countries with very significant amounts of PCB-contaminated equipment (India and the Russian Federation), the strategic approach of procuring and establishing destruction facilities running on BAT technologies was adopted. For Morocco, the project relied on the PCB decontamination platform operated by MME, established during a previous initiative (Pillar II of the national PCB programme), to treat lowly contaminated equipment. In Serbia, the technology has been contracted via a service provider. However, the technology producer was the Institute Nikola Tesla, which was based in the country. For the other countries with much lower amounts of PCB-contaminated equipment (Bolivia, Congo, Guatemala, and Lao PDR), the approach was to hire service providers.

57. It appears that the approach adopted by Serbia to produce a mobile PCB-decontamination and oil regeneration unit has been very cost-effective and highly competitive compared to the other approaches implemented in the other countries: the lowest destruction cost of \$ 842 per ton. This approach would work on the condition that institutions with the right technical, research, and development capacity such as the Institute of Nikola Tesla exist in the country.

Table 13: Cost of PCB destruction per tons

Country	Approach adopted for PCB disposal	Destruction cost (\$/ton)
Bolivia	TREDI contracted: local dechlorination for lowly contaminated equipment Exportation for pure PCBs and highly contaminated equipment The company contracted a local partner INAMTRADES	No information

Congo	Fuera contracted for retrofilling	\$4,500 per ton (equipment + oil)
Guatemala	SETCAR contracted for local dechlorination for lowly-PCB contaminated equipment Exportation of highly PCB-contaminated equipment The company contracted a local partner REPELSA	\$5,000 per ton
India	Procurement and establishing BAT technologies: dechlorination unit for lowly contaminated equipment. Plasma technology for pure PCB and highly contaminated dielectric oils	Lowly contaminated equipment: \$2,850 per ton (equipment + oil)
Lao	SETCAR contracted for decontamination	\$4,850 per ton (oil only)
Morocco	MME contracted for lowly contaminated equipment	\$2,045 per ton (equipment + oil)
	Exportation for pure PCBs and highly contaminated equipment	\$ 1856 (equipment + oil)
Russia	Procurement and establishing BAT technologies: dechlorination unit for lowly contaminated equipment. Plasma technology for pure PCB and highly contaminated dielectric oils	\$ 3,700* per ton (equipment + oil)
Serbia	Establishment of PCB decontamination unit by Nicola Tesla Institution	\$ 842 per ton (equipment + oil)

*Official rate as per government decree and not based on actual funds invested.

6.3.Environmental Impact

Table 14: Environmental Impact Information

Country	Foreseen quantity (MT)	Commenced?	Completed?	Quantity treated (MT)
Bolivia	400	Yes	No	149.6
Congo	200	No	No	-
Guatemala	400	Yes	Yes	364.85
	15 MT DDT	Yes	Yes	19.32
India	7,700	Yes (mobile) No (static)	No	417
Lao	250	No	No	-
Morocco	613	Yes	No	63
The Russian Federation	3,800	Yes (for mobile unit) No (plasma)	No No	-
Serbia	200	Yes	Yes	648
TOTAL	12,950			1,661.77

58. In all the projects, BAT for PCB disposal did not exist in the countries. In 6 projects, service providers have been contracted to carry out PCB-decontamination, and in 2 projects – India and the Russian Federation – projects have procured technology which would then remain in the country. In Serbia, the technology has been contracted via a service provider, however, the technology producer is the Institute Nikola Tesla which is based in the country.

59. Since the commencement of project implementation, the electrical sector organisations being the key stakeholder organizations, became aware of environmental risks related to PCBs, via the capacity-building and awareness-raising activities of the projects. The projects catalysed that the decision-makers prioritize the advantages of discarding PCBs, helped improve the awareness of the workers’ occupational safety as well as the implementation of ESM of PCBs and disposal of PCBs. Maintenance centres are reported to have implemented practices based on ESM of PCBs and technical guidelines to avoid cross-contamination; key

stakeholders have confirmed transferring knowledge to their respective staff on ESM of PCBs, thus potentially contributing to a reduction of cross-contamination or contaminated sites. Thus, projects have contributed to enhancing awareness on PCBs and adopting ESM of PCBs, thus potentially reducing environmental risks.

60. In Bolivia, thanks to the project, the sector established new practices; when they buy new equipment it is compulsory to request PCB-free certification accredited by quantitative analysis. As a rule, maintenance centres implement qualitative analysis before treating the equipment. The communities living around organisations' storage now are not exposed to PCB; the project collected the equipment from 15 places at the national level. In Russia, the Russian Railway company, located in 77 out of 89 constituent entities of the Russian Federation territory, employing more than 700,000 people, and owning about 28,000 power transformers and more than 25,000 capacitors, has implemented an ESM plan for management of PCB-contaminated equipment and wastes.

61. In all countries, even if PCB-disposal has not commenced, mechanisms, and technology have been procured or contracted, that is, put into place, to treat or dispose of PCBs, thus contributing positively to the environment.

6.4. Social Impact

62. In all eight projects, social impact is measured in terms of employees of the related organizations receiving information about PCBs, thus being aware of PCBs, and able to protect themselves accordingly, for example, with the use of personal protective equipment (PPE). As confirmed by key stakeholder institutions, they have transferred knowledge and information about PCBs to their respective staff, making them aware of the adverse effects of PCBs on human health and environment, as well as about ESM of PCBs, thus working towards safety and health of employees and cleaner work environments. This also reduces the risk of their families and communities living in close vicinity coming into contact with contaminated oil. By reducing or eliminating human exposure to toxic chemicals such as PCBs, the risk of developing diseases caused by the exposure to these compounds would be reduced, and therefore people's health would be protected, thus bringing down health and social costs. In Guatemala, the project demystified the belief that oil transformers oils are curative for bone and joint problems. In India, the new static PCB-plant established would require, besides the engineers already working at the BSP, further persons to be employed in various functions, thus potentially contributing to new jobs and employment.

7. Performance of UNIDO in evaluated project

63. UNIDO PMs supported and guided national counterparts and stakeholders and proposed appropriate solutions to reported problems. Several PMs carried out missions to strengthen

processes and follow up on critical phases. The hiring of international consultants for product development and technical support was satisfactory and appreciated by local counterparts for their high quality, such were the cases of Russia, Guatemala, and Bolivia. UNIDO Regional Offices were not directly involved in the implementation of the projects but provided indirect support and represented the interventions at the highest level. In Guatemala and Bolivia, UNIDO, through the PM, promoted spaces for regional collaboration by exchanging experiences with similar projects and learning from them in the initial implementation phase. It also facilitated communication between interventions.

64. In India, Serbia, Bolivia, Guatemala, and Laos, there was no change of PM throughout the execution. On the other hand, in Congo and Morocco, there was a change of the PM, which caused delays in the initial phase of the project for Congo but did not generate adverse effects for Morocco.

65. In Congo and Morocco, decisions by the PMs on issues related to the bidding for the final disposal of PCBs delayed the projects, in the first case 12 months and in the second 15. On the other hand, in India, despite the delays and challenges of the project, the PM could have included useful tools such as risk and feasibility analyses, which were not carried out.

66. In Russia, the management of the project was transferred from UNIDO HQ to the CIIC in Moscow at the request of the local counterparts, and although it caused a few months of delay, an adequate delivery was achieved. For this project, the inclusion of a Russian PM greatly facilitated the implementation of the project and its relationship at the country level.

Table 15: UNIDO Performance Rating

Country	UNIDO Performance Rating
Bolivia	High Satisfactory
Congo	Moderately Satisfactory
Guatemala	Highly Satisfactory
India	Moderately Satisfactory
Lao	Satisfactory

8. Overall assessment and ratings table

67. The table below summarizes the assessment for the eight projects.

Table 16: Overall Assessment – Final Rating

	Evaluation criteria	BOL	COD	GTM	IND	LAO	MAR	SRB	RUS
A	Impact	S	MS	S	MS	MS	MS	MS	S
B	Project design	S	MS	S	S	S	MS	S	S
1	• Overall design	S	MU	HS	S	S	MS	S	S
2	• Logframe	S	S	S	S	S	S	S	S
C	Project performance	MS	MS	S			MS	MS	
1	• Relevance	HS	HS	HS	HS	HS	HS	HS	HS
2	• Effectiveness	MS	MS	S	MU	MS	MS	MS	S
3	• Coherence	HS	S	HS	HS	HS	S	S	S
4	• Efficiency	MS	MU	S	MU	MU	MS	MS	S
5	• Sustainability of benefits	ML	ML	ML	L	L	L	L	L
D	Cross-cutting performance								
1	• Gender mainstreaming	MS	S	S	S	HS	S	S	S
2	• M&E: ✓ M&E design ✓ M&E implementation	S	MS	HS	MU	S	S	S	S
3	• Results-based Management	HS	S	HS	MU	MU	S	S	S
E	Performance of partners	S		HS					
1	• UNIDO	HS	MS	HS	MS	S	MS	S	S
2	• National counterparts	MS	MS	S	S	S	S	S	HS
3	• Donor	HS	S	HS	S	S	S	S	S
4	• PCB owners	HS		HS					S
F	Overall assessment	MS	MS	S	MS	MS	S	MS	S

BOL: Bolivia; COD: Republic of Congo; GTM: Guatemala; IND: India; Lao: Lao PDR; MAR: Morocco; RUS: Russian Federation; SRB: Serbia

9. Conclusions, recommendations, and lessons learned

9.1. Conclusion

68. The projects were designed to strengthen the regulatory framework and build capacity for the ESM of PCBs including identifying, sound management, and sound disposal as well as raising awareness at all levels. While in Bolivia, Guatemala, India, Laos, and Serbia, the regulatory framework has been strengthened, in Congo, Morocco, and Russia, not all the drafted legal documents have been adopted by the respective governments. On the other hand, in all countries laboratory capacities have been built for the identification of PCBs, and partial inventories, almost complete in a few countries such as Congo, have been successfully carried out. However, in Morocco and Russia, the target was not met. Regarding final PCB

elimination, only Serbia has been able to successfully dispose of 648 tons of contaminated equipment, largely exceeding the project target of 200 tons. In most of the other countries, targets would not be reached, and disposal was still ongoing at the time of the TE. Given that targets have been achieved in only two of the eight countries, and although two countries have been granted further extensions, this portfolio of projects on PCB elimination was not very successful.

9.2. Lessons learned

69. Many lessons have emerged during the implementation of the eight projects. The main ones are summarized below:

- Despite involving gigantic and renowned institutions showing high commitment and having the necessary financial capacity, projects can still run into unforeseeable challenges, which may cause unexpected delays in project implementation.
- The capacity-building requirements of partner institutions need to be taken into consideration to ensure the continuation of work and future flow of project results, after the completion of the project.
- For projects involving the strengthening of the legal and regulatory framework, which are generally very time demanding, the adequate planning of activities and timelines taking into consideration the local context would avoid delays in project implementation.
- For some specific projects, involving NGOs with the appropriate capacity and experience, and giving them the lead for project execution/monitoring is an alternative approach to ensure success.
- Approaching key stakeholders, in particular the PCB owners, with the adequate communication and information strategy, informing them on the benefits they will gain, will ensure their support, engagement and participation in the project.
- For one project, due to the underestimation of PCB destruction cost, at the onset the key project objective of eliminating a targeted amount of PCB-contaminated equipment could never be achieved. Planning for appropriate budgets at design would ensure the delivery of outputs, products and results during the implementation phase.
- Procedures to select service providers are lengthy. For two projects implementation was much delayed due to failed bids. Launching bids with the appropriate terms of reference and taking into consideration the available budgets would not result in failed bids and thus avoiding delays implementation would not be delayed.
- For one project, only in-kind co-financing was pledged at design for the treatment and destruction of PCB contaminated equipment. Given that only cash co-financing would be appropriate for such activities, there was a significant shortfall of cash funds. At

the onset, the targets for these outputs could never be achieved. Planning for the appropriate type of co-financing at design would ensure the achievement of targets for outputs and results during implementation.

9.3. Good practices

70. Good practices from the individual TEs are as follows:

71. Bolivia:

- The storage assessment visits before the PCB equipment collection processes were extremely productive since they identified the logistical requirements for the procedure, missing information and identification of the equipment's physical state; this permitted the identification of the best treatment and disposal strategy.
- In the country, when an organization buys or maintains a transformer, now they request a PCB negative test before buying or treatment; this strengthens the importance of avoiding cross-contamination.

72. Guatemala:

- To hire an NGO to strengthen the project implementation and avoid political interventions. The PM can be more focused on the political level instead of operative issues.
- To share with stakeholders clearly from the beginning, the project's objective and benefits, contributes to their participation and satisfaction level
- Including a product with a long-term PCB inventory and disposal strategy where a financial analysis is included based on the project results strengthens the sustainability benefits because it provides the public and private stakeholders with a route map.

73. India:

- One NE each is based at the key stakeholder institutions, which was highlighted by all interviewed stakeholders to be very helpful for information exchange, good communication and coordination of activities.
- Continuation of knowledge about project and its activities was given at both BSP and CPRI, as UNIDO has recruited, as NEs, one at each institution, persons who were involved in the project since its commencement, and had retired after a few years.
- The project is partnering with well-established and renowned institutions, BSP, CPRI, which are not only known in the country, but also internationally. They bring with them high commitment towards project objective and willingness to achieve it, also by committing and spending their own resources.
- Knowledge has been transferred to the NEs recruited to operate the mobile facility, 2 chemical engineers and 1 mechanical engineer, and they are operating the facility on their own; since CPRI has the overall responsibility for the mobile unit, the operations are supervised by a staff of CPRI.
- Providing information on CPRI's public website is also considered to be a good practice, as it enables easy accessibility of PCB-related as well as project-related

information and documents produced within the framework of the project to the wider public.

74. Laos:

- One good practice was the preparation and inclusion of the course content on POPs, including PCBs, at the National University of Lao.
- Another good practice, related to the above good practice, is the engagement of national experts from the National University of Lao to prepare the course content.
- A brochure was prepared for awareness-raising on the effects of PCBs on children and pregnant women.

75. Serbia:

- In-country Institute Nikola Tesla has produced the mobile PCB-decontamination unit itself, and was a member of the consortium which won the tender for PCB disposal in the country.
- Taking the gender aspect into consideration, a special brochure was prepared for pregnant women about the effects of PCBs on pregnant women

9.4. Summary of Recommendations⁷

76. Documentation of co-finance: In some countries, information on co-financing that was executed or materialized was not available. In few others, information was not complete as some stakeholder institutions that provided co-financing did not report on it. It is recommended that project managers should ensure that national counterparts and other local partners provide complete information on co-financing periodically. If necessary, adequate guidance (e.g. development of a template for materialized co-financing) should be provided to the local partners and counterparts.

77. Budget: In two countries, the objective of the project could not be achieved at the onset either due to underestimation of PCB destruction cost or pledging in-kind contributions from beneficiaries instead of cash co-financing. When designing projects, project managers should allocate adequate budgets and pledge the proper type of co-financing contribution from partners and counterparts to ensure the successful delivery of goods and products that would contribute to meeting objectives.

78. Gender: Gender mainstreaming has not been adequately addressed in project design, as it was not a requirement at the time of project formulation, for example, under GEF-4. Nonetheless, some of the projects have ensured the appropriate involvement of both genders in project activities and, secondly, prepared gender-related awareness-raising material.

⁷ Please refer to the individual PCB reports for details:

During project formulation and implementation, PMs should provide and track those activities that consider gender mainstreaming and specifically address gender, as appropriate.

79. Knowledge management: Projects should design and ensure a proper knowledge management system, firstly, for the exchange and transfer of knowledge during project implementation and secondly, for the transfer of knowledge after project completion.

80. Delays: For projects of large scope and budget, in case of delays, it may be necessary to carry out a risk analysis and feasibility study during project implementation, even if it has not been initially planned.

81. M&E - Medium Term Reviews: In case of delays, especially of projects of significant scope and longer delays, PMs should consider an additional MTR or other convenient activities such as self-evaluations depending on the project performance, stakeholders' participation, reasons for delays, and project stage.

Annexes

Annex I. TOR



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE **Cluster evaluation of UNIDO projects**

Polychlorinated biphenyls (PCBs)

1. UNIDO PCBs portfolio background

The Stockholm Convention (SC) on persistent organic pollutants (POPs) recognizes that POPs including polychlorinated biphenyls (PCBs) “possess toxic properties, resist degradation, accumulate and are transported through air, water and migratory species, across international boundaries and deposited far from their places, where they accumulate in terrestrial and aquatic ecosystems”. Exposure to PCBs is of a major public health concern, in particular impacts upon women and, through them, upon future generations.

PCBs are industrial products or chemicals mainly used in the energy sector, widely deployed as dielectric and coolant fluids in electrical apparatus, carbonless copy paper and heat transfer fluids. Generally, PCBs are very stable, which explains their persistence in the environment.

UNIDO’s PCBs management and disposal strategy aims to create fundamental capacities within industries, governments, institutions and PCBs owners, in order to comply with the PCB-related obligations under the SC. The projects implemented by UNIDO enhance the critical regulatory and legislative framework and strengthen institutions at the national, regional and local level to manage equipment and waste that contain PCBs in an environmentally sound manner.

Compliance with legislation is ensured by building capacities in local laboratories for PCB sampling and analysis, transfer of technology know-how for local PCBs treatment and elimination and undertaking inspections at PCB-contaminated sites. Environmentally sound PCB management practices reduce PCB releases and risks to human health and the environment; best practices are then further disseminated through public awareness raising initiatives.

Furthermore, UNIDO’s PCB projects include the elimination and disposal of PCBs, often by leveraging interests of the project recipient countries in non-combustion technology, which, in many cases, offer technical and financial advantages. One is on-site PCB decontamination, which solves many technical and procedural barriers for very large transformers that cannot be transported on the road to transformer maintenance facilities. The other is the regeneration of oil. Because workers would usually need to drain and dismantle these transformers, this helps reducing the workers’ risk of exposure to PCBs.

2. Rationale and purpose of the evaluation

Given the number of PCB projects in the last phase of implementation and taken into account significant similarities at project design level, a cluster evaluation approach will be used. The cluster will be tentatively composed of eight (8) projects selected from Table 1 below and the final list of projects included will be validated at Inception phase.

One of the main reasons of the Cluster evaluation would be to overcome some of the shortcomings present in traditional project evaluation, namely the inward-looking nature of the exercise, the timing and high transactional costs and administrative burden.

The purpose of the cluster approach is to produce synergies and increase the value added in the conduct of evaluations.

The efficiency gains produced by this approach will be invested in additional learning and more strategic assessments to inform UNIDO management, Member States, donors and beneficiaries with further more relevant and useful evaluation findings, conclusions and recommendations, such as:

- a) Inter-project comparisons (e.g. differences in implementation approaches, different strategies for broader adoption)
- b) Incorporation of additional aspects normally not so well-covered (e.g. socio-economic and environmental impacts of projects, other aspects (e.g., global crisis such as the COVID 19 pandemic).
- c) Aggregated information for cross-cutting and recurrent issues, such as management, systemic challenges and root causes based on several cases and therefore less anecdotal.

Table 1: List of projects for Cluster Evaluation

Region	Country	UNIDO project N.	GEF ID	Them area	Project budget(EUR)	Year of Eval	Budget left (SAP 31.03.22 USD)
EUR	SERBIA	100313	4877	PCB	2,100,000	2022	786,423
ASP	INDIA	104044	3775	PCB	14,100,000	2022	107,230
ASP	LAO PDR	140157	4782	PCB	1,400,000	2022	271,414
LAC	BOLIVIA	140296	5646	PCB	2,000,000	2022	278,300
LAC	GUATEMALA	140298	5816	PCB	2,000,000	2022	403,866
EUR	RUSSIAN FEDERATION	140019	4915	PCB	7,400,000	2022	30,000
AFR	CONGO	140160	5325	PCB	975,000	2022	25,000
AFR	MOROCCO	170117	9916	PCB	1,826,484	2022	621,734 (ex OpenData)
<u>tot</u>					<u>31,801,484</u>		<u>1,902,233</u>

3. Scope and focus of the evaluation

The final cluster of projects will be decided upon in the Inception Report, based on the following criteria:

Thematic: projects from same or similar programme, or within interrelated technical areas

Timing: project which Terminal Evaluations are due within +/- 6 months

Projects will be selected based on the planned timing for the project end or operational completion and the respective thematic focal area. The final selection will be made in coordination with the respective project managers and the GEF coordination unit to ensure smooth implementation of the evaluation.

The Cluster Evaluation, as foreseen in the Independent Evaluation Division Work Plan (WP 2018-198 and

reiterated in WP 2020-219, will follow the UNIDO Evaluation Policy¹⁰, the UNIDO Guidelines for the

Technical Cooperation Project and Project Cycle¹¹, and UNIDO [Evaluation Manual](#). Furthermore, the GEF

Guidelines for GEF Agencies in Conducting Terminal Evaluations, the GEF Monitoring and Evaluation

Policy¹² and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies will be

applied. The evaluation will also build upon the findings and recommendations of the Cluster Evaluation

on UNIDO POPs portfolio carried out in 2015¹³.

The evaluation has three main specific objectives:

- i) Assess the projects` performance in terms of relevance, effectiveness, efficiency, sustainability, coherence, and progress to impact; and
- ii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.
- iii) Contribute to organizational learning, by UNIDO and its counterparts, while being forward looking, thus also guiding the development of new similar projects.

⁸ https://www.unido.org/sites/default/files/files/2018-11/IEV_WP_2018-19_final_180228.pdf

⁹ https://www.unido.org/sites/default/files/files/2021-06/2021-04-21_EIO%20Evaluation%20work%20plan-budget%202020-21_Update%202021_EB%20Approved_F.pdf

¹⁰ UNIDO. (2018). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/2018/08)

¹¹ 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)

¹² <https://www.thegef.org/sites/default/files/council-meeting>

documents/EN_GEF.ME_C56_02_GEF_Evaluation_Policy_May_2019_0.pdf

¹³ [https://www.unido.org/sites/default/files/2015-](https://www.unido.org/sites/default/files/2015-04/FINAL_report_NIPS_CLUSTER_EVAL_20150409_0.pdf#page=81&zoom=100,120,76)

04/FINAL_report_NIPS_CLUSTER_EVAL_20150409_0.pdf#page=81&zoom=100,120,76

4. Evaluation approach and methodology

The cluster evaluation will be carried out as an independent in-depth exercise using a participatory approach whereby all key parties associated with the projects to be evaluated will be informed and consulted throughout the process. The evaluation team leader will liaise with the UNIDO Independent Evaluation Division (ODG/EIO/IED) on the conduct of the evaluation and methodological issues.

The evaluation will use a theory of change (ToC) approach¹⁴ and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The theory of change will depict the causal and transformational pathways from project outputs to outcomes and longer-term impacts. It also identifies the drivers and barriers to achieving results. The learning from this analysis will be useful for the design of the future projects so that the management team can effectively use the theory of change to manage the project based on results.

5. Data collection methods

The complete array of instruments for data collection will be finalized at Inception Report stage. Among the main methods foreseen to be used by the Evaluation Team:

- a) **Desk and literature review** of documents related to the projects, including but not limited to:
 - The original project document, monitoring reports (such as progress and financial reports, mid-term review report, technical reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
 - Notes from the meetings of steering committees involved in the project.
- b) **Stakeholder consultations** will be conducted through structured and semi-structured interviews and focus group discussion. Key stakeholders to be interviewed include:
 - UNIDO Management and staff involved in the projects; and
 - Representatives of donors, counterparts and stakeholders.
- c) Whenever possible, **field visits** to project sites in the involved countries. Due to the persisting emergency caused by the virus Covid-19, it shall be noted that restrictions on international travels are still in place at the time this ToR is drafted, therefore the field visits should be carried out by the national consultants only.
 - On-site observation of results achieved by the project, including interviews of actual and potential project beneficiaries.
 - Interviews with the relevant UNIDO Country Office(s) representative to the extent that he/she was involved in the project, and the project's management members and

¹⁴ For more information on Theory of Change, please see chapter 3.4 of UNIDO [Evaluation Manual](#)

the various national [and sub-regional] authorities dealing with project activities as necessary.

d) **Online data collection** methods such as surveys will be used to the extent possible.

6. Evaluation key questions and criteria

The key evaluation questions, to be further refined at the level of Inception Report, are the following:

- 1) Have they done the right things in the context of PCB issues in the respective countries? How well have the projects fit with other policies and interventions that affect PCBs in the respective countries?
- 2) What are the projects` key results (outputs, outcome and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent are the achieved results to be sustained after the completion of the projects?
- 3) What are the key drivers and barriers to achieve the long term objectives? To what extent have the projects helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long term objectives?
- 4) What are the key risks (e.g. in terms of financial, socio-political, institutional and environmental risks) and how these risks may affect the continuation of results after the projects end?
- 5) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the analysed projects?
- 6) How far have the Mid-term reviews conducted on the cluster projects been used to ensure the success of the projects in the second phase of implementation?
- 7) Are there tangible differences with regard to the evaluation criteria between MSPs and FSPs?
- 8) Were lessons learned from previous projects in the countries and the POPs thematic area sufficiently taken into account while designing the cluster projects?
- 9) Was the gender dimension given sufficient attention at both project design and implementation?

The table below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2 of UNIDO [Evaluation Manual](#).

Table 2: Project evaluation criteria

#	<u>Evaluation criteria</u>	<u>Mandatory rating</u>
A	Progress to impact	Yes
B	Project design	Yes
1	• Overall design	Yes
2	• Logframe	Yes
C	Project performance	
1	• Relevance	Yes
2	• Effectiveness	Yes

#	<u>Evaluation criteria</u>	<u>Mandatory rating</u>
3	• Coherence	Yes
4	• Efficiency	Yes
5	• Sustainability of benefits	Yes
D	Cross-cutting performance criteria	
1	• Gender mainstreaming	Yes
2	• M&E: ✓ M&E design ✓ M&E implementation	Yes Yes
3	• Results-based Management (RBM)	Yes
E	Performance of partners	
1	• UNIDO	Yes
2	• National counterparts	Yes
3	• Donor	Yes
F	Overall assessment	Yes

Performance of partners

The assessment of performance of partners will **include** the quality of implementation and execution of the GEF Agencies and project executing entities in discharging their expected roles and responsibilities. The assessment will take into account the following:

- Quality of Implementation, e.g. the extent to which the agency delivered effectively, with focus on elements that were controllable from the given implementing agency's perspective and how well risks were identified and managed.
- Quality of Execution, e.g. the appropriate use of funds, procurement and contracting of goods and services.

The cluster evaluation will assess the following topics, for which ratings are not required:

- Need for follow-up:** e.g. in instances financial mismanagement, unintended negative impacts or risks.
- Materialization of co-financing:** e.g. the extent to which the expected co-financing materialized, whether co-financing was administered by the project management or by some other organization; whether and how shortfall or excess in co-financing affected project results.
- Environmental and Social Safeguards¹⁵:** appropriate environmental and social safeguards were addressed in the projects' design and implementation, e.g. preventive

¹⁵ Refer to GEF/C.41/10/Rev.1 available at: <http://www.thegef.org/sites/default/files/council-meetingdocuments/>

C.41.10.Rev_1.Policy_on_Environmental_and_Social_Safeguards.Final%20of%20Nov%2018.pdf

or mitigation measures for any foreseeable adverse effects and/or harm to environment or to any stakeholder.

7. Rating system

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Division uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory) as per table below.

Table 3: Project rating criteria

Score		Definition	Category
6	Highly satisfactory	Level of achievement presents no shortcomings (90% - 100% achievement rate of planned expectations and targets).	SATISFACTORY
5	Satisfactory	Level of achievement presents minor shortcomings (70% - 89% achievement rate of planned expectations and targets).	
4	Moderately satisfactory	Level of achievement presents moderate shortcomings (50% - 69% achievement rate of planned expectations and targets).	
3	Moderately unsatisfactory	Level of achievement presents some significant shortcomings (30% - 49% achievement rate of planned expectations and targets).	UNSATISFACTORY

2	Unsatisfactory	Level of achievement presents major shortcomings (10% - 29% achievement rate of planned expectations and targets).	
1	Highly unsatisfactory	Level of achievement presents severe shortcomings (0% - 9% achievement rate of planned expectations and targets).	

8. Evaluation process

The cluster evaluation will be conducted from June 2022 to December 2022. The evaluation will be implemented in five phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

- 1) Inception phase: The evaluation team will prepare the inception report providing details on the evaluation methodology and include an evaluation matrix with specific issues for the evaluation to address; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term reviews – whenever available – and the current limitations imposed by the Covid-10 pandemic.
- 2) Desk review and data analysis;
- 3) Interviews, survey and literature review;
- 4) Country visits (whenever possible) and debriefing to key relevant stakeholders in the field;
- 5) Data analysis, report writing and virtual debriefing to UNIDO staff at the Headquarters; and
- 6) Final report issuance and distribution, and publication of the final evaluation report in UNIDO website.
- 7)

9. Time schedule and deliverables

The evaluation is scheduled to take place from April 2022 to August 2022. The data collection phase from the field is tentatively planned for May 2022 but will be tailored on the different stages of projects` implementation and specific requirements by the different countries. At the end of the data collection, the evaluation team will present the preliminary findings for key relevant stakeholders involved in the project in the country. The tentative timelines are provided in the table below.

After the debriefing to the national stakeholders, the evaluation team will debrief UNIDO Headquarters and the internal stakeholders involved for debriefing and presentation of the preliminary findings of the terminal evaluation. Online presentation is to be arranged in case the visit cannot take place.

After this phase and the factual validation, a synthesis aggregating the comparable findings from the different projects is expected to be produced by the team. The draft TE report will be submitted 4 to 6 weeks after the end of the mission. The draft TE report is to be shared with the UNIDO Project Managers (PMs), UNIDO Independent Evaluation Division, the UNIDO GEF Coordinator and GEF OFP and other stakeholders for comments. The ET leader is expected to revise the draft TE report based on the comments received, edit the language and submit the final version of the TE report in accordance with UNIDO ODG/EIO/EID standards.

Table 4: Tentative timelines

Timelines	Tasks
June 2022	Desk review and writing of inception report
June 2022	Online briefing with UNIDO project manager and the project teams based in Vienna.
July-August 2022	Data collection from the Field
August 2022	Debriefing in Vienna Preparation of first draft evaluation report
September 2022	Internal peer review of the report by UNIDO’s Independent Evaluation Division and other stakeholder comments to draft evaluation report
October 2022	Preparation of the synthesis of aggregated findings from the clustered evaluations
November 2022	Review of the Synthesis and the first draft
December 2022	Final evaluation report

10. Evaluation team composition

Given the number of projects included in the Evaluation and the current travel restrictions in place, the evaluation team will be composed of a mix of two international evaluation consultants - one acting as the team leader - and one national evaluation consultant per country, supported by a Cluster Evaluation coordinator from UNIDO IED. The evaluation team members will possess a mixed skill set and experience including evaluation, relevant technical expertise, social and environmental safeguards, and gender. All the consultants will be contracted by UNIDO pooling funds from the projects’ evaluation budgets.

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 terminal evaluation verification on request to the GEF partnership up to three years after completion of the terminal evaluation.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.

The UNIDO Project Manager and the project management team in the different countries involved will support the evaluation team. The UNIDO GEF Coordinator and GEF Operational Focal Point (OFP) will be briefed on the evaluation and provide support to its conduct. GEF OFP(s) will, where applicable and feasible, also be briefed and debriefed at the start and end of the evaluation mission.

An evaluation manager from UNIDO Independent Evaluation Division will provide technical backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Project Managers and national project teams will act as resourced persons and provide support to the evaluation team and the evaluation manager.

10. Reporting

Inception report

This Terms of Reference (ToR) provides 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 Team Leader will prepare, in collaboration with

the team member, a short inception report that will operationalize the ToR relating to the evaluation questions and provide information on what type and how the evidence will be collected (methodology). It will be discussed with and cleared by the responsible UNIDO Evaluation Manager.

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 evaluation team members; field mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable¹⁶. The draft inception report will also include a suggested outline of the overall synthesis report (see below), including the specific evaluation questions for the cross-cutting analysis.

Evaluation report format and review procedures

All selected projects will be evaluated meeting GEF minimum requirements (see Annex I).

In terms of final outputs, one short evaluation report per project will be produced, including project performance ratings according to OECD-DAC criteria.

In addition, a final synthesis report of the evaluation findings of the cluster projects, inter-project comparisons and additional evaluation aspects will also be produced.

The draft reports will be delivered to UNIDO Independent Evaluation Division (with a suggested report outline) and circulated to UNIDO staff and key 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 will be sent to UNIDO’s Independent Evaluation Division for collation and onward transmission to the 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 terminal evaluation report.

The evaluation team will present its preliminary findings to the local stakeholders at the end of the field visit and take into account their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ afterwards.

The evaluation report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

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 by UNIDO Independent Evaluation Division.

12. Quality assurance

All UNIDO evaluations are subject to quality assessments by UNIDO Independent Evaluation Division. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO Independent Evaluation Division, providing inputs regarding findings, lessons learned and

¹⁶ The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by UNIDO Independent Evaluation Division.

recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO's Independent Evaluation Division).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO Independent Evaluation Division should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO Independent Evaluation Division, which will submit the final report to the GEF Evaluation Office and circulate it within UNIDO together with a management response sheet.

Annex II - Evaluation framework

Evaluation criteria	Evaluation indicators	Means of verification
Project Design		
<p>The evaluation will examine the extent to which:</p> <ul style="list-style-type: none"> • 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 countries and operational context? • Is inventory data (conducted during the preparatory phase) included in the project document based on remote inventory, physical inventory or estimates? • Are relevant environmental and social risk considerations included at the time of project design? 	<ul style="list-style-type: none"> • Situational analysis • Project results framework • Risk assessment and management • Adjustments made due to operational context • Environmental and social safeguards 	<ul style="list-style-type: none"> • Project document and annexes • Interviews with UNIDO, National Focal Points, key national partners, and other project stakeholders
Relevance and Coherence		
<p>The evaluation will examine the extent to which the project is relevant or coherent to the:</p> <ul style="list-style-type: none"> • National development and environmental priorities, national implementation plans and strategies of the national governments and their populations, as well as regional and international agreements. • Target groups: relevance of the project's objectives, outcomes, and outputs to the different target groups of the interventions (e.g., national governments, municipalities, NGOs, women's associations, waste pickers, etc.). • GEF's focal areas/operational program strategies: In retrospect, were the project's outcomes consistent with the GEF focal area(s)/ operational 	<ul style="list-style-type: none"> • Level of alignment with regional, sub-regional, and national environmental priorities, NIP, as well as with UNIDO and GEF strategic priorities at the time of design and implementation 	<ul style="list-style-type: none"> • Pertinent project documents and annexes • Interviews with UNIDO, national project coordinators,

Evaluation criteria	Evaluation indicators	Means of verification
<p>program strategies? Ascertain the likely nature and significance of the contribution of the project outcomes in the reduction or elimination of releases of uPOPs from open burning</p> <ul style="list-style-type: none"> • Does the project remain relevant taking into account the changing environment? • To what extent was the project aligned with – and complementary to – other work being delivered within the participating countries? 		<p>key national stakeholders</p>
Effectiveness and Progress to impact		
<p>The evaluation will assess the objectives and current results (results to date):</p> <ul style="list-style-type: none"> • The evaluation will assess whether the results at various levels, including outcomes, have been achieved. In detail, the following issues will be assessed: Have the expected outputs and outcomes, been successfully achieved? What are the main reasons for the achievement/non-achievement of project objectives? • Are the project outcomes commensurate with the original or modified project objectives? If the original or modified expected results are merely outputs/inputs, were there any real outcomes of the project? If there were, are these commensurate with realistic expectations from the project? • Are the targeted beneficiary groups actually being reached? How do the stakeholders perceive the quality of outputs? • 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. • Have the relevant authorities in the countries prepared and enforced the regulations on PCBs? • What is the geographical coverage of the project? • What quantity of PCBs have been identified? And disposed off? • Have any spillages been observed or reported? • Does a certified laboratory for testing of PCB-oil exist in the country? • Will the participating countries continue with PCB disposal? 	<ul style="list-style-type: none"> • Target for outputs, outcomes, and objectives of Project Results Framework • Occurrence of intermediate states in the participating countries • Stated contribution of stakeholders in achievement of outputs 	<ul style="list-style-type: none"> • Review of relevant documents such as PIRs, progress reports, meeting reports • Direct observation and discussion during evaluation mission • Interviews with UNIDO, NPCs, National Focal Points, key government representative

Evaluation criteria	Evaluation indicators	Means of verification
<ul style="list-style-type: none"> • Has the project provided information on POPs, including PCBs, to educational institutions (schools, colleges, universities, ...)? 		es, consultants and other partners such as NGOs, academia, etc.
Efficiency at current stage of implementation		

Evaluation criteria	Evaluation indicators	Means of verification
<p>The extent to which:</p> <ul style="list-style-type: none"> • The project cost is effective? Has the project used the most cost-efficient options? • Has the project produced results (outputs and outcomes) within the expected time frame? Has project implementation been delayed? If the project has been delayed, what were the reasons for the delay, and has it affected cost effectiveness or results? • Have the project's activities been in line with the schedule of activities as defined by the project team and annual work plans? Have the disbursements and project expenditures been 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? • Have the counterpart institutions spent co-finance as initially committed? • Was there coordination with other UNIDO and other donors' projects, and did possible synergy effects happen? • Give the reasons/justifications for the extension granted to the project. • Has a knowledge management system been established? • To what extent have the recommendations of the mid-term evaluation been taken into consideration? • What has been the impact of COVID-19 on project implementation? 	<ul style="list-style-type: none"> • Level of compliance with expected milestones mentioned in logical framework and with respect to financial planning and annual plans • Level of co-finance mobilized • Document the delays that occurred • List of reasons, validated by project team 	<p>For all questions under Efficiency:</p> <ul style="list-style-type: none"> • PIRs, PSC meeting reports, annual and progress reports, NPSC meeting reports, national reports • Interviews with UNIDO, NPC, National Focal Points, consultants and other project stakeholders
Assessment of risks to likelihood of sustainability of project outcomes		
<p>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 organizational sustainability will be reviewed. This assessment will 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.</p>	<p>UNIDO risk level indicators: Low, Moderate, High</p>	<ul style="list-style-type: none"> • Review of relevant documents such as PIRs, progress

Evaluation criteria	Evaluation indicators	Means of verification
<p>The following four dimensions or aspects of risks to sustainability will be addressed:</p> <ul style="list-style-type: none"> • 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 now that the GEF assistance has ended? (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 the future, there will be adequate financial resources for sustaining project outcomes.) Was the project successful in leveraging the co-financing pledged at design? • Socio-political 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 will assess whether certain activities will pose a threat to the sustainability of the project outcomes. 		<p>reports, meeting documents, progress reports</p> <ul style="list-style-type: none"> • Interviews with UNIDO, NPCs, National Focal Points, and other national stakeholders and NGOs
Assessment of M&E systems		

Evaluation criteria	Evaluation indicators	Means of verification
<ul style="list-style-type: none"> • 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. • M&E plan implementation. The evaluation should verify that an M&E system was in place and facilitated timely tracking of progress towards 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 at regional and national levels, based on indicators for outputs, outcomes, and impacts? Are there any annual work plans? Were the steering or advisory mechanisms put in place at national and regional levels? 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. 	<ul style="list-style-type: none"> • Availability of logframe, workplans, roles of overseeing bodies, budgeted M&E plan • Level of implementation of M&E system (execution of activities); changes in implementation approach to adapt to changing situations; compliance of the countries in the submission of relevant reports in a timely manner • Compliance with reporting requirements as mentioned in TORs and/or project document 	<ul style="list-style-type: none"> • Project document • PIRs, meeting reports, progress and annual reports, financial and reports, audit and other relevant reports • Interviews with UNIDO, NPCs, and NPSC members, and other relevant stakeholders / partners
Monitoring of long-term changes		
<p>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:</p>	<ul style="list-style-type: none"> • Evidence of initial efforts to establish a long-term monitoring system 	<ul style="list-style-type: none"> • Project reports, M&E reports • Interviews with UNIDO, NPCs, National

Evaluation criteria	Evaluation indicators	Means of verification
<ul style="list-style-type: none"> 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 will continue operating upon project completion? d. Is the information generated by this system being used as originally intended? 		Focal Points, and other relevant stakeholders
Project coordination and management		
<p>The extent to which:</p> <ul style="list-style-type: none"> • The national management and overall coordination mechanisms have been established and been efficient and effective. Did each partner have assigned roles and responsibilities from the beginning? Did each partner fulfill 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)? • The UNIDO CO is involved in the project. 	<ul style="list-style-type: none"> • Level and quality of project coordination and management at regional and national level 	<ul style="list-style-type: none"> • PIRs, meeting reports, and project coordination and management reports • Interviews with UNIDO, NPCs, National Focal Points, and other relevant stakeholders
Gender mainstreaming		

Evaluation criteria	Evaluation indicators	Means of verification
<p>The evaluation will consider, but need not be limited to, the following issues that may have affected gender mainstreaming in the project:</p> <ul style="list-style-type: none"> • Did the project design adequately consider the gender dimensions in its interventions? If so, how? (For GEF-4 take this point out?) • Was a gender analysis included in a baseline study or needs assessment (if any)? (For GEF-4 take this point out?) • How gender-balanced was the composition of the project management team at regional and national levels, the Regional and National Steering Committees, 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 socio-economic benefits delivered by the project at the regional, national, and local levels, including consideration of gender dimensions? 	<p>Incorporation of gender-responsive approaches and indicators, such as:</p> <ul style="list-style-type: none"> • Women's participation • Gender balance • Integration of gender dimensions in project delivery • Equality, benefits, and results 	<ul style="list-style-type: none"> • Project reports • Interviews with UNIDO, NPCs, National Focal Points, NGOs, Women's Associations involved, and other beneficiaries

Annex III - TE reports of eight projects

[Environmental sound management and final disposal of PCBs in Serbia](#)

[Environmentally sound management of PCB-containing wastes and upgrade of technical expertise in Bolivia](#)

[Environmentally sound management and disposal of polychlorinated biphenyl \(PCB\)-containing equipment and disposal of DDT wastes, and upgrade of technical expertise in Guatemala](#)

[Environmentally Sound Management and Final Disposal of PCBs in the Republic of Congo](#)

[Lao People's Democratic Republic - PCB Management and Disposal at the Energy Sector](#)

[Environmentally Sound Management and Final Disposal of PCBs at the Russian Railways network and other PCB owners \(Phase I\)](#)

[Environmentally Sound Management and Final Disposal of PCBs in India](#)

[Making polychlorinated biphenyls management and elimination sustainable in Morocco](#)



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