Sound Chemicals Management Mainstreaming and UPOPs reduction in Kenya

UNDP/GEF Project

(UNDP PIMS ID: 5361)

(GEF ID No: 5689)

TERMINAL EVALUATION REPORT

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Acronyms and Abbreviations

3R	Reduce, Reuse and Recycle
AAK	Agrochemicals Association of Kenya
APCS	Air Pollution Control System
APR	Annual Project Report
AWP	Annual Work Plan
BAT	Best Available Techniques
BEP	Best Environmental Practices
ESM	Environmentally Sound Management
GCD	Government Chemist Department
GEF	Global Environment Facility
GBM	Green Belt Movement
GoK	Government of Kenya
HCF	Healthcare Facilities
HCW	Healthcare Waste
HCWM	Healthcare Waste Management
HCWMC	Healthcare Waste Management Committee (in HCFs)
IP	Implementing Partner
IR	Inception Report
I-TEq	Internationally agreed Toxic Equivalent
KAM	Kenya Association of Manufacturers
KDC	Kenya Disaster Concern
LDPE	Low-density polyethylene
MENR/MEF	Ministry of Environment and Natural Resources (now Ministry of Environment and Forestry)
MEAs	Multilateral Environmental Agreements
MOH	Ministry of Health
NEMA	National Environment Management Authority of Kenya
NIP	National Implementation Plan of the Stockholm Convention on POPS
NPD	National Project Director
PCDD	Polychlorinated dibenzo-para-dioxins
PCDF	Polychlorinated dibenzofurans
PIF	Project Identification Form
PIR	Project Implementation Review
POP	Persistent Organic Pollutant
PPE	Personal Protective Equipment
PPP	Public Private Partnership
PRTR	Pollutant Release and Transfer Register
PM	Project Manager
PMU	Project Management Unit
UON	University of Nairobi
RAT	Rapid Assessment Tool

SC	Stockholm Convention on POPs
SAICM	Strategic Approach to International Chemicals Management
SME	Small and Medium Enterprises
SRF	Strategic Results Framework
UNEP	United Nations Environment Program
UNDP	United Nations Development Program
UNDP-CO	United Nations Development Program Country Office
UoN	University of Nairobi
UPOPs	Unintentionally produced Persistent Organic Pollutants
WRA	Water Resources Authority
WHO	World Health Organization

Glossary of Evaluation-related Terms

Term	Definition
Baseline data	Data that describe the situation to be addressed by an intervention and serve as the starting point for measuring the performance of the intervention
Beneficiaries	The specific individuals or organizations for whose benefit an intervention is undertaken
Capacity development	The process by which individuals, organizations, institutions and societies develop their abilities individually and collectively to perform functions, solve problems and set and achieve objectives
Conclusion	A reasoned judgement based on a synthesis of empirical findings or factual statements corresponding to a specific circumstance
Effect	Intended or unintended change due directly or indirectly to an intervention
Effectiveness	The extent to which the development intervention's objectives were achieved, or are expected to be achieved
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results
Finding	A factual statement about the programme or project based on empirical evidence gathered through monitoring and evaluation activities
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention
Lessons learned	Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations
Logframe (logical framework approach)	Management tool used to facilitate the planning, implementation and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcome, impact) and their causal relationships, indicators, and assumptions that may affect success or failure. Based on RBM (results-based management) principles
Outcome	The likely or achieved (short-term and/or medium-term) effects of an intervention's outputs
Output	The product, capital goods and/or service which results from an intervention; may also include a change resulting from the intervention which is relevant to the achievement of an outcome
Rating	An instrument for forming and validating a judgement on the relevance, performance and success of a programme or project through the use of a scale with numeric, alphabetic and/or descriptive codes
Recommendation	A proposal for action to be taken in a specific circumstance, including the parties responsible for that action
Relevance	The extent to which the objectives of an intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies
Risk	Factor, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed
Stakeholders	The specific individuals or organizations that have a role and interest in the objectives and implementation of a programme or project
Theory of Change	A set of assumptions, risks and external factors that describes how and why an intervention is intended to work.

Acknowledgement

Authors of this Terminal Evaluation report wish to express their appreciation to all stakeholders of the UPOPs project whom they interviewed during the data collection phase for their time devoted to the interviews, their open views on implementation of the project and their candid opinions on the achieved results.

Special thanks are extended to the staff of the UNDP Country Office in Kenya and the Project Team for timely provision of all requested information and assistance with organization of the virtual interviews, as well as for effective arrangements for the field visit to selected project sites by the National Consultant.

The excellent cooperation of all parties enabled the evaluators to obtain as much as possible of first-hand information from various project partners and together with data extracted from the project documentation and various complementary information sources allowed to provide an objective assessment of the status of the project results and thus contributed to successful completion of the Terminal Evaluation.

EXECUTIVE SUMMARY

Project Information Table

Project Title	Sound Chemicals Management Mainstreaming and UPOPs reduction in Kenya		
UNDP Project ID (PIMS #):	5361	**PIF Approval Date**	21 March 2014
GEF Project ID :	5689	**CEO Endorsement Date:**	20 April 2016
ATLAS Business Unit, Award ID, Output ID:	KEN10, 00095750, 00099820	**Project Document (ProDoc) Signature Date (date project began):**	21 July 2016
Country(ies):	Kenya	**Date project manager hired:**	July 2017
Region:	Africa	**Inception Workshop date:**	12 August 2016
Focal Area:	Chemicals and Waste	**Midterm Review completion date:**	29 November 2019
GEF Focal Area Strategic Objective:	CW1: Phase out POPs and reduce POPs releases CW3: Pilot sound chemicals management and mercury reduction	**Planned closing date:**	31 July 2021
Trust Fund [indicate GEF TF, LDCF, SCCF, NPIF]:	GEF TF	**If revised, proposed op. closing date:**	31 December 2021
Executing Agency/Implementing Partner:	Ministry of Environment and Natural Resources (now Ministry of Environment and Forestry)		
Other execution partners:	N.A.		
Project Financing	***at CEO endorsement (US$)***	***At Terminal Evaluation (US$)***	
GEF financing:	4.515,000	3,915,302.55[1]	
UNDP contribution			
Government	17,480,153	14,821,421	
Other partners	3,528,650	752,500	
Total co-financing	21,008,803	15,573,921	
PROJECT TOTAL COSTS	**25,523,803**	**19,489,223.55**	

[1] Likely to change at the final closure as 5 investment activities are finalized

Project Description

The objective of the GEF funded project is the "Reduction of the release of UPOPs and other substances of concern and the related health risks, through the implementation of environmentally sound management of municipal and healthcare wastes and of an integrated institutional and regulatory framework covering management and reporting on POPs." The project intends to achieve this objective through improving the regulatory system, enhancing its enforcement, raising awareness on POPs, and by establishing the capacity for safe handling, transport and improved disposal of POPs-containing or POPs-generating waste. The action on the ground is largely restricted to four participating counties[2] (Nairobi, Kisumu, Nakuru and Mombasa). The project will contribute to the reduction of risks for the human health and the environment by avoiding the release of POPs from open burning of waste and the release of UPOPs into the environment and preventing people's exposure to UPOPs. The project encompasses four components and a separate component for Monitoring and Evaluation as follows:

Component 1: Streamlining sound management of chemicals and waste into national and county development activities through capacity building of MENR, MOH, county governments of Nairobi, Kisumu, Nakuru and Mombasa and the NGOs.

Component 2: Introducing environmentally sound management of health care waste in selected healthcare facilities; policy and strategic plans to prepare them to adopt BAT and BEP disposal.

Component 3: Demonstration of sound healthcare waste disposal technologies in a selected number of healthcare facilities in each county.

Component 4: Minimizing releases of UPOPs from open burning of waste.

Component 5: Monitoring, learning, adaptive feedback, outreach, and evaluation.

Summary of findings and conclusions

The Sound Chemicals Management Mainstreaming and UPOPs Reduction project in Kenya (or "UPOPs project") boasts of the following achievements:

The project has managed to set ground for a multi-stakeholder and multi-sectoral approach to managing issues of chemicals and waste management. It supported development and review of several draft policies, bills and regulations on sound chemicals management and helping Kenya endeavour to reach the SAICM goal that by 2020 chemicals are produced and used in ways that protect human health and the environment. All the draft documents are at advanced stages of enactment, subject to political processes that are not within the control of the project. Moreover, the project supported development of a POPs monitoring protocol and creation of a PRTR database to enhance monitoring of chemicals. The PRTR is in place but not yet operationalised,

[2] Kenya has a national and devolved government. Devolved government has divided Kenya into 47 counties with county as basis of administration and budgeting. The four counties are the largest in terms of economic activities, generation of waste and active in open burning of waste

awaiting gazettement of the draft regulations on toxic and hazardous chemicals and materials management[3].

Components 2 and 3 of the project focused on facilitating a better understanding of the risks of Health Care Waste and a demonstration of BEP and BAT for treatment and disposal of the HCW in selected HCFs. Specifically, the project supported development of guidelines and a Standard Operating Procedures for implementing BEP/BAT at national level. Under Outcome 2.2 on facilitating implementation of BEP and BAT at the selected HCFs, several challenges and delays have been experienced. As at time of the TE, installation of some BAT interventions funded by the GEF project was still on-going. However, selected HCFs have received microwaves and shredders for treatment of HCW through co-financing. These pieces of equipment are in place and operational with the exception of Mombasa where there is a technical problem with the microwave. Also, the project aimed at upgrading the incinerators at Jaramogi Oginga Odinga and Mbagathi Hospitals to minimise the release of UPOPs. The two incinerators were retrofitted with air pollution control equipment, but not but experienced some challenges for restoring the operation. As of January 2022, the incinerator at Naivasha has been in operation.

The aim of Component 3 was to reduce the release of UPOPs of about 19gTEq/yr of UPOPs from the HCFs where the interventions on the ground are being supported by the project. This is against the baseline figure of release of 19.0 gTEq/ yr. from these HCFs. Thus, the project has targeted 100% reduction of release of UPOPs due to treatment of HCW at the selected HCFs. Upon full operationalisation of the technologies in late December/early January, the estimated emission reduction will be at 15.49 gTEq / year). Additional reductions are expected when BAT/BEP is fully mainstreamed as routine by all HCFs and their personnel.

Component 4 of the project is focused on reducing releases of UPOPs due to management of solid waste (SW). Among other measures, the project supported awareness creation, training, capacity building of stakeholders and development of regulations against open burning of waste. The TE established that generally there is high levels of awareness on waste, UPOPs and the need to stop open burning. Moreover, the project aimed at reduction in the release of UPOPs through engagement of communities involved in the informal management of solid waste to establish material recovery centres and support 3R. The participating counties received equipment to support 3R (3 bailers, 3 shredders each, and bins) and establish material recovery centres. The participating counties identified possible groups to operate the material recovery centres. The 4 counties are working out administrative mechanisms and developing framework of agreements for handover of the equipment's to groups.

The target for reduction of UPOPs releases under Component 4 was estimated at above 3.0 gTEq/ yr. The TE established that the project has contributed to 1g TEQ/year reduction from improved recycling supported by new regulations and incentives on reduction of amount of waste to dumpsites. For non-burn waste management practises at dumpsites, the targeted

[3] The Environmental Management and Coordination Act (CAP 387): Draft Environmental Management and Coordination (Toxic and Hazardous Chemicals and Materials Management) Regulations 2019

reduction in the release of UPOPs due to the emergency measures was 20.0 gTEq/ yr. About 5gTEQ/year reduction has been achieved attributed to restrained open burning in Gioto dumpsite in Nakuru county, and no open burning in Kachok dumpsite in Kisumu.

Lessons learned

It is considered as good practice to select Level 5 - county referral hospitals for demonstration of new technologies as they usually have less budgetary constraints and better trained personnel compared to lower-level hospitals. Apart from effective demonstration of technologies the level 5 HCFs could also serve effectively as training institutions for practicing HCW segregation and treatment.

Although the original project included activities on replacement scheme for mercury-containing equipment, the practical implementation of this part showed that the small numbers of collected mercury-containing equipment did not justify implementation of the 1:1 replacement. However, mercury-containing equipment has to be phased-out and disposed in line with the provision of the Minamata Convention. In order to take advantages of economies of scale, it is a good practice to establish cooperation with the relevant government focal agency for the Minamata Convention in order to ensure disposal of mercury-containing equipment from HCFs together with other mercury-containing waste in the country.

Summary of evaluation ratings

The summary of evaluation ratings[4] to the required evaluation criteria is displayed below.

Evaluation Criteria	Evaluator's Rating
Monitoring and evaluation: design at entry	Satisfactory (S)
Monitoring and evaluation: implementation	Moderately Satisfactory (MS)
Overall quality of monitoring and evaluation	**Satisfactory (S)**
Implementation (Project components)	Moderately Satisfactory (S)
Execution (national components)	Satisfactory (S)
Overall quality implementation / execution	**Satisfactory (S)**
Relevance	**Relevant (R)**
Effectiveness	**Satisfactory (S)**
Component 1	Highly Satisfactory (HS)
Component 2	Satisfactory (S)
Component 3	Moderately Satisfactory (MS)
Component 4	Moderately Satisfactory (MS)
Component 5	Satisfactory (S)
Efficiency	**Satisfactory (S)**
Overall Project Objective	**Moderately Satisfactory (MS)**
Overall likelihood of sustainability	**Moderately Likely (ML)**
Institutional framework and governance	Likely (L)
Financial	Moderately Likely (ML)
Socio-political	Likely (L)
Environmental	Likely (L)

[4] Performance rating of GEF projects is explained in Annex 7.

Recommendation summary table

No.	Recommendation	Entity Responsible	Time frame
1.	The project beneficiary HCFs in cooperation with the county governments should ensure that sterilised HCW is not subject to disposal through burning in a dumpsite. As a temporary measure it is proposed to adopt the Nakuru county model based on allocation of space in the dumpsite for dug pits for disposal and compacting of HCW. This should serve as a temporary measure until other options of disposing the microwave sterilised waste are identified and adopted.	MEF, MoH County Governments	1st quarter 2022
2.	The GoK should carefully monitor the legislative approval process for the draft legislation on chemicals and waste management in order to minimise delays in official enactment of the legislation.	MEF	1st half of 2022
3.	The MEF, NEMA and WRA as the key stakeholders of the project should use the policy, the regulation and the training materials to ensure that nationally all chemicals producers, importers and users mainstream sound management of chemicals and waste into their operations to ensure continuity of the project objectives. This should include budgetary provisions by the national and county governments for periodic monitoring of POPs as provided for under the mandates of relevant institutions such as NEMA, WRA, GCD, and KBS.	MEF, NEMA, WRA	2022/23 FY
4.	The Ministry of Environment and Forestry and the NEMA should fast track operationalization of the PRTR database and dissemination of related training materials, monitoring protocols in order to support regular monitoring and availability of data on POPs.	MEF/NEMA	1st half of 2022
5.	Before the completion of the project, UNDP in cooperation with the Ministry of Health and Ministry of Environment and Forest should establish institutional mechanisms for a post project monitoring of performance of the technologies supported and periodic collection of information about amounts of HCW treated. The monitoring, led by the national health authorities, should start immediately upon closure of the project with monthly periodicity.	UNDP MEF	By End of Feb 2022
6.	The MEF should establish effective channels for dissemination of the awareness materials and knowledge products from the UPOPs project to relevant parties.	UNDP MEF	Immediately
7.	The Ministry of Health should establish a continuous professional development course and secure resources towards continuation of training and re-training courses with HCWM modules for health workers. Moreover, the MoH should consider an incentive	MoH UNICEF	1st half of 2022

No.	Recommendation	Entity Responsible	Time frame
	strategy for trained staff to keep them working in their jobs and minimise the trained staff turnover.		
8.	The Ministry of Health and the project model HCFs should consider establishment of national maintenance teams and/or contracting local service companies to ensure maintenance and repair of installed microwave equipment, including identification of reliable local suppliers of necessary equipment spare parts.	MoH County Governments	1st half of 2022
9.	The Ministry of Health should consider technical assistance for operationalisation of centralised HCW treatment systems including establishment of fees for transportation of HCW from peripheral to central HCFs and tariffs for HCW treatment at the microwave central HCFs.	MoH County governments	1st quarter of 2022
10.	The MEF should explore effective support for establishment of community-based composting systems and assist the waste composting communities with efforts to find users and market for the compost.	MEF	1st half of 2022
11.	UNDP should ensure that designers of future projects on HCW and solid waste management, pay necessary attention to the challenges to disposal of treated waste and consult them with the relevant national stakeholders at the project preparation phase and include in the project risk matrix together with identification of mitigation measures.	UNDP	As soon as possible
12.	To reduce procurement related challenges, UNDP and the national Implementing Partner should consider development of a procurement matrix at project inception and assign procurement roles based on strength of parties. However, development of technical specification for procurement delegated to UNDP should be undertaken in full cooperation with the beneficiary institutions in order to respect their needs and requirements,	UNDP	As soon as possible
13.	Ministry of Health should reach out to other health facilities (public and private) that may have stock piles of mercury-containing devices to submit them for safe disposal.	MoH	As soon as possible

INTRODUCTION

In line with the GEF Evaluation Policy, a Terminal Evaluation (TE) is undertaken at completion of the GEF-funded projects to assess their performance (in terms of relevance, effectiveness and efficiency), and determine outcomes and impacts (actual and potential) stemming from the project, including their sustainability. The TE is conducted to provide a comprehensive and systematic account of the performance of a completed project by assessing its design, implementation, and achievement of objectives. TE is also expected to promote accountability and transparency, facilitate synthesis of lessons learned, and provide feedback to allow the GEF to identify issues that are recurrent across the GEF portfolio.

This document presents results of the Terminal Evaluation of the UNDP/GEF project "Sound Chemicals Management Mainstreaming and UPOPs Reduction in Kenya" (hereafter the UPOPs project). As a standard requirement for all projects financed by GEF, the TE has been initiated by the Lead Implementing Agency, in this case UNDP Country Office (CO) in Kenya. The evaluation was conducted in accordance with the GEF Monitoring and Evaluation Policy[5], the Guidelines for GEF Agencies in Conducting Terminal Evaluations[6], and the UNDP Evaluation Guidance for GEF Financed Projects[7].

Evaluation purpose

The purpose of this TE is to provide the project partners, primarily the Government of Kenya, GEF and UNDP with an independent assessment of the key achievements of the project as compared to the objectives of the Project Document over the complete implementation period of the project. More specifically, the TE performed the following:

- Assesses the achievement of the planned outcomes and their sustainability through measurements of the changes in the set project indicators,
- Assesses the effectiveness, efficiency and alignment of the project in contributing to relevant national sustainable development plans;
- Assesses the handling of risks and barriers to implementation, including the impact of the period of COVID-19 pandemic;
- Summarizes the experiences gained and identify lessons learned;
- Proposes recommendations for sustainability, replication and scaling up that can be used by the project partners to build on the project achievements.

The TE covers all activities undertaken in the framework of the project. The time focus of the evaluation is the implementation period of the project from its start on 21 July 2016 (marked by the signature of the Project Document by the GoK) to 31 December 2021 as the date of the project operational closure. The geographic focus of the evaluation is Kenya.

[5] The GEF Monitoring and Evaluation Policy, Global Environmental Facility, November 2010

[6] Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects, GEF, 2017 https://www.gefieo.org/sites/default/files/documents/reports/gef-guidelines-te-fsp-2017.pdf

[7] Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects, UNDP, 2020 http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf

The Terms of Reference for the Terminal Evaluation is provided as Annex 1 to this report.

Scope and methodology

The evaluation covers all activities undertaken in the framework of the UPOPs project. The time focus of the evaluation is the implementation period of the project from July 2016 through December 2021. The geographic focus of the evaluation is Kenya.

Methodology

The evaluation used a participatory and consultative approach to inform and consult with all key stakeholders associated with the UPOPs project, in particular the Government counterparts, the GEF operational focal point, the UNDP Country Office, the National Project Team, the UNDP Regional Technical Adviser, representatives of the project ultimate beneficiaries, and others.

The evaluation used the primary evaluation criteria listed in the Terms of Reference for the evaluation, i.e. relevance, effectiveness, efficiency, sustainability, and impact of interventions. Since it may take some time for the impacts to be realized, the evaluation aimed at determining the level of progress towards realization of planned impacts.

The TE utilised a combination of qualitative and quantitative evaluation methods and instruments. Prior to the start of the process, an Inception report was prepared and discussed with the project teams.

The TE used the following tools for collection of evidence for the TE:

- Review of available project-related documentation;
- Interviews with selected key project stakeholders; and
- Field visit of the National Consultant to selected project sites;

The project documentation made available for the TE team was provided by the PMU/UNDP CO according to the UNDP/GEF guidelines. The list of stakeholders for on-line interviews and the field visit by the National Consultant was discussed with the PMU and UNDP CO.

The evaluation team conducted key informant interviews both physical and virtual to collect information on the project implementation. A list of interviewed persons is in Annex 3. Interviews were done using semi-structured questionnaires/guides. The National Consultant conducted field visits to project implementation sites in the 4 target urban areas of Nairobi, Mombasa, Nakuru and Kisumu. The visited project sites included health care facilities, material recovery centres and waste disposal areas. The objective of the field visits was to undertake on-site validation of key tangible outputs and interventions. During the visits, interviews and focus group discussions were held with the various teams involved in the implementation process.

Conduct of semi-structure interviews with project stakeholders ensured a participatory approach to this evaluation that gave equal opportunity for expression of opinions on the project to all interviewed stakeholders and ensured that perspectives of different organisations were taken into consideration for formulation of TE conclusions and recommendations.

Data collection and analysis

The following text provides a conceptual framework of methodology for data collection and analysis under the evaluation criteria. Due to the COVID-19 international travel restrictions, all interviews of the project stakeholders by the international expert were done in a virtual and remote modality.

Relevance

Conceptualization/Design

The evaluation assessed whether the approach used in design and selection of the UPOPs project interventions addressed the root causes and principal threats in the project area. This also included an assessment of the project results framework and whether the different project components and activities proposed to achieve the objective were appropriate, viable and responded to contextual institutional, legal and regulatory settings of the project. Furthermore, it assessed the indicators defined for guiding implementation and measurement of achievement and whether lessons from other relevant projects (e.g., same focal area) had been incorporated into the project design.

Country ownership and stakeholder participation

The evaluation assessed the extent to which the UPOPs project idea/conceptualization had its origin within national and sectoral development plans and to what extent it focused on national environment and development interests., including changes over time. It also provides assessment of information dissemination, consultation, and stakeholder participation in design stages of the project.

Replication and linkages

The evaluation determined the ways in which lessons and experiences coming out of the UPOPs project were/are to be replicated or scaled up in the design and implementation of other projects (this is also related to actual practices undertaken during implementation). It looked at linkages between the UPOPs project and other interventions within the sector and the definition of clear and appropriate management arrangements at the design stage. This element also addressed the question of to what extent the UPOPs project addressed UNDP priorities and cross-cutting issues such as gender, south-south cooperation, and poverty-environment linkages (sustainable livelihoods). It also examined linkages between the UPOPs project and the UNDP normative programming instruments and response of the UN system to national development priorities in the form of UNDAF and CPD for the recipient country.

Effectiveness and efficiency

Implementation approach

This part of the evaluation includes assessments of the following aspects:

- The use of the logical framework as a management tool during implementation and any changes made to the framework as a response to changing conditions and/or feedback from monitoring and evaluation (M&E) activities if required;

• Other elements that indicate adaptive management such as comprehensive and realistic work plans routinely developed that reflect adaptive management and/or; changes in management arrangements to enhance implementation;

• The project's use/establishment of electronic information technologies to support implementation, participation and monitoring, as well as other project activities;

• The general operational relationships between the institutions involved and others and how these relationships have contributed to effective implementation and achievement of project objectives;

• Technical capacities associated with the UPOPS project and their role in the project development, management and achievements.

Monitoring and evaluation

Under the M&E, the evaluation includes an assessment as to whether there has been adequate periodic oversight of activities during implementation to establish the extent to which inputs, work schedules, other required actions and outputs are proceeding according to plan; whether formal evaluations have been held and whether action has been taken on the results of this monitoring oversight and evaluation reports.

Stakeholder participation

This includes assessments of the mechanisms for information dissemination in the UPOPS project implementation and the extent of stakeholder participation in management, emphasizing the following:

• The production and dissemination of information and lessons generated by the project;

• Local resource users and NGOs participation in project implementation and decision making and an analysis of the strengths and weaknesses of the approach adopted by the UPOPS project in this field;

• The establishment of partnerships and collaborative relationships developed by the project with local, national and international entities and the effects they have had on project implementation;

• Involvement of governmental institutions in the UPOPs project implementation and the extent of governmental support to the project.

Financial planning and procurement management

The assessment in the field of financial planning looks into the actual UPOPs project cost by objectives/outputs/activities and the cost-effectiveness of achievements, financial management (including disbursement issues) as well as co-financing of the UPOPs project. It assessed technical and human resource capacity for procurement, linkage between work programming and procurement planning and budgeting as well as effectiveness of procurement management.

Assessment of project results

The GEF Monitoring and Evaluation Policy (2010) specifies that terminal evaluations will, at the minimum, assess achievement of outputs and outcomes, and report on these. While assessing a project's results, the evaluation determines the extent to which the project objectives

– as stated in the documents submitted at the GEF CEO Endorsement stage – have been achieved. The evaluation also indicates any changes in project design and/or expected results after start of implementation.

Attainment of outcomes/ Achievement of objectives

Through review of the UPOPs project results framework, the evaluation revisited the original outcome model (also known as the results map) in the Project Document and examined the causal logic of the initiative under evaluation and whether and eventually how it developed during the life of the UPOPs project. The revisited outcome model served as a map that captures knowledge of the UPOPs project stakeholders and boundary partners about how an outcome is intended to be achieved. The model also identified the intended target group of the initiative at the outcome level and the expected changes that the initiatives will contribute to.

Sustainability

The assessment of sustainability includes an assessment of the extent to which benefits continue, within or outside the project domain after GEF assistance/external assistance has come to end as well as eventual development of a sustainability strategy.

Progress to impact

It is often too early to assess long-term impacts of GEF-financed projects at the point of project completion hence the evaluation assesses whether there is any evidence on progress towards long-term impacts as well as the extent to which the key assumptions of the project's theory of change hold and the extent to which the eventual progress towards long-term impact may be attributed to the UPOPs project.

In addition to the analysis of progress to impacts in terms of available qualitative and quantitative evidence on environmental stress reduction, the evaluation also examined the project's contributions to changes in policy/legal/regulatory framework, including reported and/or observed changes in capacities (awareness, knowledge, skills, infrastructure, monitoring systems, etc.) and in access to and use of information (laws, administrative bodies).

Other assessments

The evaluations assessed the following additional topics for which ratings are not required:

- Materialization of co-financing: the evaluation provides information on the extent to which expected co-financing materialized, whether co-financing was cash or in-kind, whether it is in form of grant or loan or equity, whether co-financing was administered by the UPOPs project management or by some other organization, how any short fall in co-financing or materialization of greater than expected co-financing affected the UPOPs project results, etc.

- Gender Concerns: The evaluation makes assessment of the extent to which the gender considerations were taken into account in designing and implementing the UPOPs project, the extent to which the project was implemented in a manner that ensures gender equitable participation and benefits, and whether gender disaggregated data was eventually gathered and reported on beneficiaries.

Structure of the evaluation report

The structure of the TE report follows the "Evaluation Report Outline" presented in Annex F of the ToR of the assignment.

The 'Executive Summary' of the report is provided in the beginning of the report. The body of the report starts with introduction and development context of the UPOPS project and continues with a short project description. This is followed by the chapter that sets out the evaluation findings presented as factual statements based on analysis of the collected data. The findings are structured around the five essential evaluation criteria and include assessment of the UPOPS project performance against the performance indicators and their target values set out in the project results framework (as provided in the Project Document). This part further includes assessment of the project management arrangements, financing and co-financing inputs, partnership strategies and the project monitoring and evaluation systems.

The final part of the report contains conclusions and recommendations substantiated by the collected evidence and linked to the evaluation findings. While the conclusions provide insights into identification of solutions to important issues pertinent to the project beneficiaries, UNDP and GEF, the recommendations are directed to the intended users in terms of actions to be taken and/or decisions to be made. This part of the report concludes with lessons that can be taken from the evaluation, including good practices that can provide knowledge gained from the particular UPOPS project circumstances that are applicable to similar UNDP interventions.

Evaluation ethics

The evaluation was conducted in accordance with the ethical principles outlined in the UNEG Ethical Guidelines for Evaluations, namely the four guiding ethical principles for evaluation: Integrity, Accountability, Respect, and Beneficence[8].

Limitations of the evaluation

Since a visit of the international consultant was not possible due to the COVID-19 travel restrictions, interviews with selected UPOPs project stakeholders were conducted virtually and remotely through on-line meeting platforms. However, this limitation was partially addressed through organisation of the field visit of the National Consultant to selected project sites. The visit provided an opportunity gather first-hand information through direct observation and face-to-face discussions at the visited stakeholder and beneficiary institutions. Nevertheless, the need to conduct a substantive part of the interviews on-line restrained non-verbal communication with the interviewees and the inability to visit all interviewed stakeholders limited the ability of the TE team to get a broader picture about the condition of work at the stakeholder institutions.

[8] UNEG Ethical Guidelines for Evaluation, 2020
https://www.unodc.org/documents/evaluation/Guidelines/UNEG_Ethical_Guidelines_for_Evaluation

PROJECT DESCRIPTION AND DEVELOPMENT CONTEXT

Project start and duration

The concept for the UPOPs project was received by the GEF on 26 January 2014 and was approved on 2 March 2014. The project itself was approved for implementation as a five-year full-size GEF project on 1 February 2016. The signature of the Project Document by the Government of Kenya on 21 July 2016 marked the official start of the project implementation. Inception Workshop has been carried out on 12 August 2016. The original completion date was 31 July 2021. The project received a 6-month extension because of COVID-19 impact.

The Mid-Term Review (MTR) was conducted between August and November 2019. The Terminal Evaluation was conducted from 9 November 2021 to 15 February 2022.

The GEF grant approved for the UPOPs project amounts to US$ 4,515,000 complemented with US$ 21,008,803 expected parallel financing by several stakeholders (the Government, private sector, UNDP). The total amount of resources committed to the UPOPS project at inception was thus US$ 25,523,803.

Development Context

Kenya is a party to the Stockholm Convention (SC) on Persistent Organic Pollutants (POPs), having ratified the Convention in September 2004. The country subsequently developed its National Implementation Plan (NIP) in 2007. Like other signatories to the Convention, Kenya completed the process of updating the NIP in accordance with the provisions of Article 7 of the Convention and in view of the amendments made to the convention since ratification. Through this process, Kenya developed and amended in a systematic and participatory manner, priority policy and regulatory reforms as well as capacity building needs and required investment programs for POPs since 2004. The process also enabled Kenya to establish inventories of products/articles containing POPs, industrial processes using them and to provide useful information on the concentration levels and distribution of POPs across the country.

The Kenya NIP established the following priorities related to the sound management of chemicals:

- Promoting Technology Transfer, Cleaner Production, industry, and civil society participation in POPs management;
- Enhancing Laboratory services, research for monitoring of POPs pollutants and assessment of alternatives to toxic POPs;
- Promoting safer POPs alternatives as suggested by the National Implementation Plan (mostly concerning the use of non-POPs or non-chemical pesticides, alternatives to PBDE flame retardants and alternatives to these processes which are generating POPs)

Despite such important effort being carried out, there were difficulties in the completion of the related activities with special reference to the establishment and enforcement of an integrated chemicals and waste regulation, in particular: guidance on waste classification based on their

chemical composition; standards on substances recovered from waste; and sound management of chemical waste.

The Implementation Plan for Kenya (2011-2014) under the Strategic Approach to International Chemicals Management (SAICM) framework had the goal of reducing the identified risks to human health and the environment due to exposure to chemicals. The plan listed specific priority risks and hazardous activities and provided a framework with themes and actions required for addressing risks posed by chemicals. The plan proposed to strengthen national mechanisms such as policies, legislations, commissions, education programs, information networks, etc. to facilitate the implementation of specific chemicals management activities at the national, county and enterprise levels. The SAICM implementation plan recognized that all interventions on chemicals production, import, export, use, transport and disposal as priorities for Kenya.

Problems that the project sought to address

The Project Document provides three sets of barriers related to sound management of chemicals, to health care waste management (HCWM), and to municipal waste management, respectively.

Regulatory and policy barriers

Kenya has ratified the main multilateral environmental agreements on chemicals and wastes such as the Stockholm, Basel, and Rotterdam Conventions and expressed its commitment to the Overarching Policy Strategy of Strategic Approach to International Chemicals Management (SAICM). At the project baseline, integration of some of the conventions and agreements within the national legislation was not completed due to financial and technical impediments.

Despite the country having adequate legal framework across the sectors complemented with non-regulatory voluntary instruments for chemicals risk reduction, regulation on U-POPs releases from industries and waste disposal facilities was missing and enforcement of the existing legislation was weak. Due to lack of implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), importation of chemicals designated by international regulatory instruments as highly toxic occurred.

Although a system on regulation of HCWM was in force, the level of enforcement was very low. Consequently, HCW was frequently dumped or open burnt near the hospitals. Majority of hospital incinerators operated out of control without fulfilling the minimal requirements for occupational and environmental safety. Moreover, national regulations for disposal of hazardous waste were not compliant with the WHO guideline on HCW and with the technical and environmental standards recommended by the SC best available techniques (BAT).

The common way of municipal waste managing in Kenya was open dumping and open burning without any substantial environmental control. As there was no Hazardous Waste Manifest System (HWMS) transportation and collection of waste was carried out in an informal way, or the waste was simply not collected and remained near the residential areas of its origin.

Technical barriers

Although the industry, public interest groups and research institutions conducted activities addressing chemical risks management at different levels of the chemicals life cycle, a majority of the risk management projects and programmes were short-lived with no or very limited follow-up activities. Several chemical accidents showed insufficient emergency preparedness and response mechanisms at national as well as local levels.

Many in-service hospital incinerators were of very basic design, badly maintained and/or inadequately operated, and therefore not in compliance with the BAT guidance of the Stockholm and Basel Conventions. Due to low awareness of the BAT/BEP for HCWM combined with a lack of national- or county-level HCWM planning, majority of hospitals disposed their own waste without coordination with other HCFs. Insufficient capacity for U-POPs monitoring and measurement of the emissions of PCDD/F from the existing incinerators / burning contributed to the lack of awareness of the health and environmental hazards posed by improper HCWM.

Lack of technologies and knowledge for recycling of specific waste streams (in particular low-density polyethylene (LDPE) plastic from plastic bags, and organic waste) prevented their economic recycling and caused that these wastes were burnt at dumpsites.

Due to poor infrastructures at municipal dumpsites, the waste was not spread and compacted regularly. With open burning a common option, fire control systems were missing as well as services and equipment for security and fencing. Many dumpsites were too big to be remediated.

Awareness and training barriers

Relevant national institutions created some awareness among workers and ensuring occupational safety at workplace. However, very low awareness on chemicals management among the general public created challenges on misuse and mishandling of toxic chemicals with adverse effects on human health and environment. Significance of these challenges was exemplified by numerous cases of chemical accidents that had resulted in poisoning, as well as air, water, and soil pollution.

Efforts towards generating and availing information to stakeholders were hindered by limited cooperation between the information holders and those who needed the information for decision making. Although there were data on chemicals for pollution monitoring and protection of health available to public as well as private sector entities involved in various aspects of chemical risks management, access to the data and its application in chemical management was poor due to their modality of storage and retrieval.

Although basic technical training in various aspects of chemicals risk management and hazard mitigation was available locally at universities and specialised training institutions, a specialised training was missing on chemicals of global concern and related technical infrastructure which require support from the government, development partners, private sector and the civil society.

Low awareness on the management and segregation of municipal waste in the general population resulted in lack of willingness for reduction of waste generation and for waste segregation at source. Dumpsite communities were either not aware of the substantial risk from exposure to the noxious substances and pathogens at the dumpsites, or being somehow aware, they opted to bear the risk because the work at the dumpsite was their only source of income.

Institutional Barriers

Specialized enforcement/ regulatory and research institutions and agencies in the country that address chemicals management lacked coordination and synergy in execution of their mandates and activities. The country did not have a well-organized inter-ministerial coordination mechanism for chemicals management to enhance collaboration among ministries and agencies in implementing their respective mandates and competencies and facilitate information sharing. Consequently, resource mobilization and optimization to foster a comprehensive approach to the management of chemicals was inefficient.

Insufficient training and awareness of health care professionals in combination with limited financial and human resources allocated at national, county and HCF levels were the main shortcomings to HCWM.

Economic Barriers

The economic model for waste recycling was centred on the dumpsite with self-organized informal communities collecting waste at the dumpsite, and informal buyers buying the waste directly at the dumpsite. The low quality of waste segregated and resold at the dumpsite had a detrimental effect to depress the market for recycled materials, therefore perpetuating the poverty of people relying on the "dumpsite" economy.

Door-to-door collection of specific waste stream was rare except in the richest areas in the cities. Dumpsite communities resisted changes of the municipal waste management because of poor performance of previous attempts and because they feared that changes may hinder their principal source of income.

The access to the national market for recycled material was not well organized and allowed foreigners to buy recycled waste at the dumpsites at low prices. This had a double effect to impoverish the communities and deprived the country of valuable resources that could contribute to creation of jobs and business opportunities.

Immediate and development objectives of the project

The UPOPs project is the first post-NIP GEF-financed UNDP-implemented project in Kenya aiming to address the priorities identified in the NIP. The project has the following objective:

> *Reduction of the release of U-POPs and other substances of concern and the related health risks, through the implementation of environmentally sound management of municipal and healthcare wastes and of an integrated institutional and regulatory framework covering management of and reporting on POPs.*

The project intends to achieve this objective through improving the regulatory system, enhancing its enforcement, raising awareness on POPs, and by establishing the capacity for safe handling, transport and improved disposal of POPs-containing or POPs-generating waste.

The project comprises four substantive components and one additional component on monitoring, learning, adaptive feedback, outreach, and evaluation. The project substantive components, outcomes and outputs as summarized in Table 1 below.

Table 1: Project components, outcomes, and outputs

Outcome	Output
Component 1: Streamlining sound management of chemicals and waste into national and county development activities through capacity building of MENR, MOH, county governments of Nairobi, Kisumu, Nakuru and Mombasa and the NGOs	
1.1 Policies, strategies regulatory and policy framework integrating the provisions of streamlining chemicals management into development activities (specifically those of the Stockholm convention and the SAICM recommendations) adopted and institutional capacity on U-POPs and waste management enhanced	1.1.1 Overall policy framework and specific regulatory measures covering environmentally sound management of chemicals in general and POPs in particular through chemicals life cycle management developed and implemented
	1.1.2 Key institutions have knowledge and skills to formulate and implement necessary chemicals and waste environmental policies, consistent with sound chemicals management principles and obligations under international agreements
	1.1.3 Key institutions have incorporated sound management of chemicals and wastes, including POPs, in their activities
	1.1.4 National coordinating meetings on POPs held regularly (4 times per year) without GEF financial support
1.2 Monitoring activities intensified and strengthened and PRTR database in place	1.2.1 At least 70% of laboratory analyses in research and monitoring institutions required to monitor the implementation of national policy on hazardous chemicals and wastes being carried out on a cost recovery basis
	1.2.2 70% of universities nationwide include issues of hazardous chemicals and wastes, risks and legislation, in their curriculum
	1.2.3 PRTR Database and reporting system in place.
Component 2: Introducing environmentally sound management of health care waste in selected healthcare facilities; policy and strategic plans to prepare them to adopt BAT and BEP disposal	
2.1 Personnel of hospital facilities and control authorities at central and county levels have enough capacity guidance and equipment to manage healthcare waste in an Environmental Sound Manner	2.1.1 Procedures and guidelines for the assessment and implementation of hazardous waste management at healthcare facilities built on lessons and examples from the application of the I- RAT tool under the GEF4 /UNDP Global projects and on the WHO bluebook "Safe Management of Wastes from Health- care Activities" developed and adopted
	2.1.2 A national healthcare waste handbook containing guidelines for HCWM drafted and adopted by the MOH, including introduction of non-mercury devices in the HCFs
2.2 Implementation of BAT/BEP at selected hospital facilities successfully demonstrated and measured against the baseline	2.2.1 Hospital personnel at all levels trained on the implementation of the above procedures
	2.2.2 Baseline assessment of each healthcare facility based on the assessment procedures developed in 2.1.1 carried out, and waste management plans based on the baseline assessment level drafted and implemented
	2.2.3 ESM management of healthcare waste (based on WHO bluebook) implemented in 4 facilities in each county (12 facilities in total) including replacement of mercury devices with non-mercury
	2.2.4 Final assessment of the healthcare facility to measure results achieved with the implementation of the ESM against baseline is carried out and estimates amount of U- POP releases avoided
Component 3: Demonstration of sound healthcare waste disposal technologies in a selected number of healthcare facilities in each county	
3.1 Feasibility analysis and procurement of ESM technologies for healthcare waste disposal completed	3.1.1 Feasibility study and terms of reference for non-combustion or low-U-POPs emission technologies for healthcare waste disposal in selected hospitals or waste management facilities drafted
3.2 BAT/BEP technologies for the disposal of healthcare waste successfully established and demonstrated, with a potential reduction of U-POPs emissions in the order of 19gTeq/year	3.2.1 Demonstration and performance assessment of the technologies in the selected facilities completed (at least 4 facilities or an overall amount of waste in the order of 630t/yr.)
	3.2.2 Waste disposal activities of hospital facilities/programs are documented and their performance is evaluated to exemplify best practices in health-care waste management
	3.2.3 Useful replication toolkits on how to implement best practices and techniques are developed
Component 4: Minimizing releases of unintentionally produced POPs from open burning of waste	
4.1 Awareness raising and capacity strengthening on ESM of solid waste ensured.	4.1.1 Awareness raising activities for the communities and the municipalities aimed at enhancing 3Rs of waste
	4.1.2 Regulatory framework for the recovery of waste materials (glass, organic, plastic) and for licensing of the recovery activity at county and central levels improved to integrate SC requirements
	4.1.3 Counties provided with training manuals, and technical assistance for the management of solid wastes
4.2 Sound Management of solid waste in targeted municipalities implemented with the support of NGOs, with a reduction of unintentionally produced POPs from the burning of solid waste of 23 g I-TEQ/year (20 % of the current estimate of 247 g I-TEQ/year). Emergency plan to reduce exposure of population to harmful substances implemented	4.2.1 Communities selected for demonstrating plans of actions for the reduction of solid waste open burning by increasing 3Rs of waste
	4.2.2 Initiatives for reducing, reuse and recycle of waste and for composting, collection of compostable municipal waste for communities in three counties of Nairobi, Mombasa and Nakuru implemented with a PPP approach and supervised with the support of NGOs
	4.2.3: Local initiative for the re-use / recycling of other non- hazardous waste streams (i.e. plastics)
4.3 Municipal waste disposal sites with adequate management practices (non-burn)	4.3.1: Prioritization of open-burning landfills to be closed and cleaned up, emergency plans including social and resettlement issues and cleanup plans for at least 3 landfills drafted
	4.3.2: Emergency measures for reducing release of contaminants in the environment and the exposure of the population implemented in one high priority site

The complete project results framework as per the approved Project Document is provided as Annex 2.

Expected results

Table 2 below provides the expected results at the level of the Project Objective as per the approved Project Document.

Table 2: Expected results at the level of the Project Objective

Project Objective	Indicator	End-of-project Targets
Reduction of the releases of U-POPs and other substances of concern and of the related health risk through the implementation of ESM of municipal and healthcare waste and of an integrated institutional and regulatory framework covering management and reporting of POPs.	Existence of a SC compliant institutional and regulatory framework covering management and reporting of POPs	Guidelines for relevant institutions on how to streamline chemicals management into their policies, strategies and action plans
	Amount of U-POPs releases in the environment from HCW disposal avoided	Review of the HCWM guidelines Selection of health care facilities that can be used to demonstrate environmentally sound management of HCW At least 50% of HCW is disposed in ESM
	Amount of U-POPs release in the environment from municipal waste disposal avoided	30% of Municipal waste recycled through recycle, reuse and recovery methods

Specifically, the UPOPS project was designed to ensure concrete reductions of U-POPS emission releases in the following ways:

At project implementation:

- At least 19gTEq/yr reduction of UPOPs emissions from improved HCWM;
- At least 3gTEq/yr of PCDD/F release reduction from municipal waste recycling activities;
- At least 20 g TEq of PCDD/F releases reduction from implementation of emergency plan and fire prevention at one large landfill;
- Safe disposal of at least 2,000 medical mercury devices and their replacement by non-mercury devices, preventing thus release of around 4kg of mercury.

At project replication:

- Additional 100 g-TEQ/yr UPOPs (PCDD/PCDF) reduction through replication and adoption of BEP and BAT for HCWM across the country;
- Further reduction of 10 g TEq/yr of PCDD/F release through replication of recycling activities,
- Additionally, reduction of around 80gTEq/yr of PCDD/F release through enhancement of measures aimed at preventing fires at landfills.

Apart from the global benefits, the UPOPs project was expected to review and improve existing legislation and regulatory frameworks related to management of chemicals, HCW and municipal waste and enhance local capacities for treating hazardous waste.

Main project stakeholders and key partners involved

Stakeholder engagement is an inclusive and continuous process between a project and those potentially impacted that encompasses a range of activities and approaches. It is arguably one of the most important ingredients for a successful project delivery and therefore an essential element of this project.

The design of the UPOPs project is based on multi-stakeholder engagement and consultations to ensure national institutional ownership of the project. The Project Document defines the following key stakeholders:

The national institutions, established under the new Constitution, are required to decentralise their functions by establishing county and district offices. Therefore, at the decentralized level, the main project stakeholders are the county health and environmental authorities in the counties with the selected pilot HCFs, as well as the administration of the selected HCFs.

The main stakeholders on the municipal waste side are industries using materials that may be derived from waste recycling operations, or that intend to invest or operate in the 3R[9] economy. Community-based organizations are also relevant stakeholders of the municipal waste sector. However, the involvement of informal waste recyclers/collectors depends also on their willingness to adhere to a formal waste management system, regulated by a licensing system and compliant with norms and procedures for the environmentally sound management of waste.

Table 3 below provides a list of stakeholders that were actively engaged in preparation of the UPOPs project as well as their expected roles in the project implementation (as summarised at the inception in the UPOPs Project Document).

[9] Reduce, Reuse and Recycle

Table 3: Key project stakeholders[10] (at project inception)

Stakeholder Name	Relevant Roles
UNDP	GEF Implementing Agency (IA) under NIM modality. Provided overall management and guidance from its Country Office in Nairobi and the Regional Hub in Istanbul Roles in project assurance, and in monitoring and evaluation of the project as per normal GEF and UNDP requirements.
Ministry of Environment and Natural Resources (MENR)	Leadership and coordination for the implementation of the project, hosting the GEF Operational Focal Point Executing and implementing the project Providing co-finance Technical consulting and capacity building
National Environment Management Authority (NEMA)	Advisory oversight at executive level Support at a policy advisory level
Government Chemist Department (GCD)	Providing co-finance Executing and implementing the project Marketing and infrastructure development Support to development and growth
Water Resource Management Authority (WARMA)	Providing co-finance Implementation of the project activities
University of Nairobi (UON)	Implementation of selected project activities under guidance and support of UPOPs monitoring
Agrochemicals Association of Kenya (AAK)	Executing and implementing the project. Marketing and infrastructure development. Support to development and growth of the Southern Rangelands conservancies
Kenya Association of Manufacturers (KAM)	Providing co-finance Implementation of the project activities Support to development and growth of the private sector
Kenya Disaster Concern (KDC)	Providing co-finance. Implementation of the project activities
Greenbelt Movement (GBM)	Providing co-finance Executing and implementing the project Marketing and infrastructure development Support to development and growth of the Southern Rangelands conservancies
Mombasa Integrated Solid Waste Management Group (North Mombasa County)	Implementation of the project activities Participating in education and capacity building activities
Catholic Association (a group of CBOs in the county of Kisumu).	Providing linkage between the capacitated Southern Rangelands conservancies, Northern Rangelands Trust, investors and conservancy owner-managers on a national level

Theory of Change

A project's theory of change provides a basis for evaluation of the project resources, activities and results. The terminal evaluation assesses description of the project's theory of change including description of the project's outputs, outcomes, intended long-term environmental impacts of the project, causal pathways for the long-term impacts as well as implicit and explicit assumptions.

[10] Source: UPOPs Project Document, p. 29

The Project Document does not comprise a Theory of Change in the form that would explicitly demonstrate the relation between the individual project components. However, Section II of the Project Document outlines a strategy for all three components of the project.

The project component dealing with the sound management of chemicals focuses on the chemicals-related activities that have synergies with the other two project components with the aim to boost the technical capacity in the following areas:

- Improve the country legislation on chemicals and assist the environmentally sound management of hazardous chemicals through definition of quality and technical standards for disposal processes;
- Increase the knowledge and awareness of risks related to chemicals with a life cycle perspective, and promote alternatives to POPs and other hazardous substances with the aim of preventing the use of materials that may generate / release POPs as a consequence of their improper disposal;
- Ensure that the country has the capacity to monitor the presence of POPs in relevant environmental media, with specific focus on air quality, atmospheric emissions, and specific waste streams.

The objective of the project component related to HCWM is to protect human and environmental health by reducing releases of UPOPs and mercury from the unsound management of HCW, in particular from the sub-standard incineration and open burning of HCW. Specifically, this component aims to:

- Promote and support minimisation and segregation of HCW to reduce the volume of HCW for disposal;
- Sponsor improvements of the HCW disposal technology and encourage increased centralisation of HCW for disposal.

The project component related to the municipal waste management is based on 3 main targets for improved practices:

- Support for creation of alternative approaches to composting in selected pilot counties;
- Assistance with development of a new stream of recycling for plastics in these counties;
- Development of emergency measures in one priority site, particularly to avoid accidental or voluntary burning of wastes.

Total Resources

The total grant for the UPOPs project from the GEF Trust Fund amounts to US$ 4,515,000, complemented by co-financing from various sources (Government and private/bilateral) amounting to US$ 21,008,803. Therefore, the total resources committed to the project at inception amounted to US$ 25,523,803.

Context of Other Ongoing and Previous Evaluations

A Mid-Term Review (MTR) of the UPOPs project was completed in November 2019. There was no information about ongoing or previous evaluations of any related projects.

FINDINGS

Project Design/Formulation

This section provides a descriptive assessment of the achieved results. In addition, several evaluation criteria are rated in line with the requirements for Terminal Evaluations for UNDP/GEF projects.

Analysis of the project results framework

This section provides a critical assessment of the Project Results Framework (PRF) in terms of clarity, feasibility and logical sequence of the project outcomes/outputs and their links to the project objective. It also examines the specific indicators and their target values in terms of the SMART[11] criteria.

The evaluators found the PRF well-structured with clear description of the project outcomes and outputs that are practicable and feasible within the project time frame. The Project Document also comprises detailed analysis of the baseline situation, i.e. the existing institutional, regulatory, technical and awareness barriers hindering achievement of sound management of chemicals, HCW and municipal waste, including consideration how to address and remove those barriers. However, the project design does not contain explicit links to broader development impacts such as income generation and livelihood benefits. Component 1 addressed governance and legislative frameworks of the chemicals and waste management.

The description of the project strategy is organized in a clear and logical manner. The PRF comprises 9 outcomes and total 25 outputs in the 4 substantive project components. However, the proposed measurement of achievement of the planned results is somewhat complicated as the PRF contains in total 51 indicators and 84 related targets formulated at the level of the project outputs in line with the requirement for construction of results frameworks for GEF-5 projects. No indicators and targets are provided for measurement of achievement of the project outcomes.

The PRF contains a mix of qualitative and quantitative indicators for measurement of progress and achievements. Qualitative indicators are defined as narrative assessments of changes in processes, practices, institutions, and/or behaviours important for achievement of the project results. Quantitative indicators and their numeric targets are provided for capacity building outputs and for measurement of UPOPs emission reductions.

While a majority of the indicators and targets are compliant with the SMART criteria, the evaluation team noted several inconsistencies in the definition of indicators and their targets. Particular mismatch between the indicators and targets was observed at the level of the Project Objective. Moreover, several indicators were found redundant as their definition is too vague, and some targets difficult to measure due to lack of relation to the indicators. Also, some indicators/targets are defined at the level of project activity or milestones. The main inconsistencies in the PRF are summarized in Table 4 below.

[11] SMART stands for Specific, Measurable, Attainable, Relevant, Time-bound.

Table 4: Inconsistencies in the Project Results Framework

Project result	Indicator/Target	Comments
Project Objective	Existence of a SC compliant institutional and regulatory framework covering management and reporting of POPs	The targets are set at the level of activities, not outputs
	Review of the HCWM guidelines Selection of health care facilities that can be used to demonstrate environmentally sound management of HCW	
	Amount of U-POPs releases in the environment from HCW disposal avoided	The target is irrelevant for the indicator
	At least 50% of HCW is disposed in ESM	
	Amount of U-POPs release in the environment from municipal waste disposal avoided	The target is irrelevant for the indicator
	30% of Municipal waste recycled through recycle, reuse and recovery methods	
Output 1.1.1	Number of new or reviewed regulatory acts	The indicator definition requires a quantitative target
	The identified polices and legislation regulation/s or their associated norms are amended for compliance with the SC requirements.	
Output 1.1.3	Number of POPs units at local and central environmental authorities trained and established.	No quantitative target provided for measurement of the indicator
	Units on POPs management are trained and established in key local and central institutions	
Output 1.1.4	Number of coordination meetings held.	No quantitative target provided for measurement of the indicator
	Coordination Meetings of the National Chemical Management Coordination Office	
Output 1.2.2	Number of universities including curricula on chemical risk assessment and management of hazardous chemicals and hazardous waste	Mismatch between the measurement units in the indicator and its target
	University curricula for chemical risk assessment and management of hazardous chemical and hazardous waste adopted by at least 70% of training institution.	
Output 2.2.1	Number of staff from the project HCFs trained	Two incompatible targets for measurement of the indicator
	All the staff of the HCF will receive training on HCWM At least 200 staff from the project HCFs trained	
Output 2.2.3	All the project HCFs have introduced BEP in a satisfactory manner	The target is in fact an activity
	HCFs supported in minimizing waste streams, improving segregation and introducing recycling activities	
Output 2.2.4	Availability of final assessment report based on the HCWM guidance	Unclear definition of the target (the definition of UPOPs to be determined is missing)
	UPOPs after implementation of best practices in HCWM determined for each project facility	
Output 3.1.1	Availability of feasibility study Availability of cost-effectiveness analysis	Targets are irrelevant for measurement of the indicator
	Technical specifications for HCW treatment technologies and for APCS incinerator upgrade drafted and approved	
Output 3.2.1	Amount of U-POPs release prevented by means of implementation of better disposal practices	Targets are irrelevant for measurement of the indicator
	HCFs supported in the implementation of their plans (including recycling activities) as well as monitoring practices. Agreements between CTFs and PFs drafted and signed for each PFs served by a CTF	
Output 3.2.2	Complete mismatch between the indicators and the targets	
Output 3.2.3	Toolkit for replication of best practices made available	Indicator for the target is missing
	The toolkit will be properly disseminated to relevant stakeholders	
Output 4.1.2	Waste guidelines include SC provisions, Prioritisation of plastic waste	Unclear definition of the target that does not measure the indicator
	Special provisions facilitating communities to perform upstream collection of recyclable waste and prevent unsafe dumping	
Output 4.2.2	Amount of U-POPs releases prevented due to recycling activities and open burning avoidance.	Unclear definition of the target that does not measure the indicator
	The recycling activity is organized at industrial scale with the support of industrial partner(s).	
Output 4.2.3	Amount of U-POPs releases prevented due to recycling activities and open burning avoidance.	Unclear definition of the target that does not measure the indicator
	Domestic industrial stakeholders involved for facilitating the placing on the market of recovered plastic at industrial scale	
Output 4.3.1	Emergency plans for limiting the release of U-POPs and other toxic chemicals from dumpsite are available for at least 3 dumpsites.	The indicator and the target are identical
	Emergency plan for three priority dumpsites, aimed at reducing release of U-POPs and other toxic chemicals, and at reducing exposure to POPs of the population, drafted	

Another observed insufficiency of the project design is the fact that the Project Document does not contain a specific list of activities to be implemented under each output but only a summary outline of the activities is provided under each project output title.

The last PRF column contains assumptions that pertain to willingness of various relevant stakeholders to participate in the project and commit co-financing for implementation of the project. The assumptions were taken as a basis for identification of risks listed in the same column that might prevent the individual project outputs from being delivered by the project.

The project design integrates three separate but interlinked components, namely on SAICM, HCWM and solid waste. Such integrated project design was not common for GEF-5 projects as these projects usually addressed one of the above subject areas. Particular advantage of the integration is that it enables to address the interconnection between HCW and municipal SW management under a single project. However, the downside of the integration is that due to limited resource availability the project is not able to go more deeply into each of the three areas.

The evaluation team concludes that the PRF is too complex as it contains too many indicators and targets as a result of integration of the three components. The abundance of indicators and targets does not enable focus on the most important indicators and targets and makes the monitoring of progress overcomplicated and related reporting repetitive.

There is no information about revision of the original PRF that was recommended by the MTR.

The PRF does not contain any indicators or targets for measuring broader development impacts (such as income generation, gender equality and women's empowerment, improved governance, livelihood benefits, etc.)

Assumptions and risks

Identification of risks enables the implementing partners to recognize and address challenges that may limit the ability of the project to achieve the planned performance outcomes.

A preliminary risk analysis was conducted at the Project Identification Form (PIF) stage and identified 7 risks to achievement of the project objective. The PIF also provided risk rating on a simplified rating scale (low-medium-high) and corresponding mitigation measures. The PIF risk matrix was revised during the project preparation and the resulting revised risk matrix with 9 risks is contained in Annex I of the Project Document.

The summary of the project risks identified in the Project Document is in Table 5 below.

Table 5: Simplified project risk matrix (as per the Project Document)

No.	Risk Description	Risk type	Impact/ Probability Rating*	Risk mitigation measures	Owner
1.	Lack of coordination of the relevant institutions and ministries	Institutional	M/M	Coordination and solution of conflicts among different stakeholders will be achieved by involving them in the project steering committee and/or in specific project activities and establishing a well-staffed PMU for project management.	PM GoK
2.	New legislation compliant with the SC or amendment of the current legislation cannot be drafted and adopted within project timeframe due to length of the law-making process	Institutional	M/H	The selection of the proper law-making process (i.e., decrees or official guidance embedded in existing regulations) will ensure that the implementation and enforcement of an improved regulatory framework on waste compliant with the Basel and Stockholm convention is achieved within the project timeframe.	PM GoK
3.	Lack of cooperation of relevant stakeholders (Community Based Operators, dumpsite communities, Private sector) to cooperate in the establishment of a sound management of recyclable waste	Management	M/H	The project will aim at generating income by means of establishing of a better quality market chain for recyclable waste. This will represent an incentive for all the partners and stakeholders to collaborate together	PM
4.	Awareness raising activities on municipal not effective or do not reach the proper target	Management	L/M	Awareness raising will be the result of a targeted communication effort which will occur by using both electronic media (TV, internet) and face-to-face meetings and communication. The awareness raising activities will be designed after carefully listening to the stakeholders' needs.	PM GoK
5.	Issues in the procurement of non-incineration technologies	Management/ Technical	M/L	This risk may be minimized thanks to the sound experience UNDP already gathered in similar projects, including a global project involving the procurement of this equipment in 8 countries	PM
6.	Project HCFs not willing to enter into contracts with the CTFs for treatment of the HCW	Institutional	L/L	Joining the project represents an evident technical and financial benefit for HCFs, which will be self-sustainable also after project closure.	PM GoK
7.	Ministry of Health and national medical training institutions unwilling to revise the national training modules by integrating international best practices in HCWM training	Institutional	L/L	MoH already recognised the need for review of training modules. In any case, any modification to the national training modules will be discussed in advance to ensure MoH involvement, and the WHO country office will be consulted as well in the process.	PM GoK
8.	Government of Kenya unwilling to consider making necessary changes to the national laws and plans pertaining to HCWM.	Institutional	L/L	MENR and NEMA are already aware of the need to improve the regulation on hazardous waste	PM GoK
9.	Project HCFs are unwilling to participate in baseline assessments and are not open to sharing information related to their current HCWM practices.	Management	M/L	The project will work with facilities which are interested in participating in baseline assessment and to share information. The benefit obtained in these facilities will be disseminated to ensure replicability and sustainability of the project	PM

*I=impact, P=probability, both rated on a 3-point scale (low-medium- high)

It follows from Table 5 that the baseline risk analysis identified two types of risks, namely management risks that can be directly controlled by the project implementing partners and institutional risks that are mostly out of control by the project team. There were no externalities factored into the formulation of assumptions and risks.

The evaluators found the risk analysis at the project preparatory stages (PIF and PPG) sufficiently detailed with well-articulated risks and sound proposed mitigation measures. The risk of procurement issues and the risk of insufficient willingness of HCFs to participate in the centralised HCW treatment schemes (risks Nos. 5 and 6 in the above table) were underrated on probability and impact. The evaluators also noted that although the risk of difficulties in achieving adequate level of co-financing was identified at the PIF stage, it was not included in the revised risk matrix (the project baseline risks) in the Project Document.

Furthermore, the risk rating on a simplified rating scale (low-medium-high) did not follow the common practice for UNDP-implemented GEF-funded projects that uses a 5-point rating scale (1 to 5). Consequently, the risk analysis did not systematically identify critical risks (rated high both on probability and impact) for the purpose of follow-up during the project implementation phase. Nevertheless, the Project Implementation Reports (PIRs) in the section Critical Risk Management report delays in procurement of goods and services

Lessons from other relevant projects incorporated into project design

The UPOPs project is the 1st GEF-financed full sized project in the Chemicals and Waste focal area in Kenya. Prior to the project approval, Kenya participated in two regional GEF-funded projects in the same focal area:

GEF Project ID 3673: Supporting the Implementation of the Global Monitoring Plan of POPs in Eastern and Southern African Countries (GEF-4)

GEF Project ID 4886: Continuing Regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Africa Region

The Project Document does not mention any lessons from the above cited or any other previously implemented projects.

Planned stakeholder participation

The UPOPs project is based on a multi-stakeholder approach and strong participation by the government as well as the private sector and civic society. The Project Document provides an outline of key stakeholders involved in preparation of the project including their expected roles the project. Stakeholder consultations held during the design phase enabled a thorough assessment of institutional and non-governmental stakeholders in terms of their involvement in the project. However, the stakeholder analysis at the project baseline did not go deeper into distinction between core (primary) and secondary (tangential) stakeholders.

It was expected that the institutional (GoK) stakeholders would play key roles in legislation, management, monitoring of the project progress and communication of its results. The expected main entry point for involvement of the GoK stakeholders was participation in meetings of the Project Steering Committee through which the GoK stakeholders would assume an active role in the decision-making for effective and efficient implementation of the project.

Further stakeholders identified at the project inception included the following groups:

<u>Under The Health Care Waste Component:</u>

- County health and environmental authorities as well as the administration of HCFs selected for the project activities, and
- General public, in particular the communities exposed to U-POPs released by the disposal of healthcare waste, and to toxic substances (including POPs) contained or released into the environment as a result of improper disposal of HCW (especially open burning or burning in crude chambers).

Under The Municipal Waste Component

- Industries using materials that could be derived from sound waste recycling operations, or that intend to invest in the 3R economy are relevant stakeholders expected to participate as project partners, and

Community-based organizations through involvement of informal recyclers/collectors depending on their willingness to adhere to a formal waste management system, regulated by a licensing system and compliant with norms and procedures for the environmentally sound management of waste.

Linkages between project and other interventions within the sector

Implementation apart from two enabling activity projects on preparation and update of the National Plan (NIP) under the Stockholm Convention, the Project Document refers to participation of Kenya in two UNEP regional projects on global monitoring plan as the most relevant for the UPOPs project and calls for coordination with the UNEP projects through periodical meetings with UNEP and project staff and sharing of monitoring data related to UPOPs between the two projects.

The project fits well with other similar interventions within the health sector and environment sectors. The project design has emphasized on building awareness of the links between waste management and public health. This includes implications of exposure to dioxins and mercury for differentially more vulnerable populations, such as females and children. The MEF under the Department of MEAs as well as special programmes is implementing several projects on sound chemicals management, such as the Planet Gold Project funded through UNEP that targets addressing of mercury pollution in artisanal gold mining, the CHEMOBS project funded by UNEP targeting formation of a chemicals observatory in the region. The UPOPs project worked closely with these projects drawing synergies from each other. The MoH is also implementing health care waste management project that formed an important part of co-financing in the UPOPs project.

Gender responsiveness of project design

The Project Document does not contain detailed analysis of gender issues with specific reference to impact of the HCW. Due to lack of relevant statistics in Kenya, it makes only a general statement that high percentage of medical and health service workers are female and, on these grounds, it pictures women as key stakeholders of the project.

Nevertheless, the project interventions especially for sensitisation and municipal waste management component was designed to ensure active participation of women. The design supported gender focused sensitization programs including workshop sessions on gender mainstreaming in sound chemicals management. In terms of vulnerability, women and children are considered vulnerable to POPs exposure. Pregnant women exposed to POPs pass the the risk to their unborn babies. By reducing exposure to POPs through improved waste management practices, the risk to women and children is greatly reduced.

Social and Environmental Safeguards

In line with the UNDP Social and Environmental Screening Procedure (SESP), the Project Document contains description of three social and environmental risks and overall SESP categorisation of moderate project risk. It also briefly outlines the mitigation of the risks through application of strong oversight and safety principles during the project implementation and regular communication with UNDP MPU/Chemicals for technical support on key project milestones. The environmental and social impact assessment reports were submitted to the National Environment Management Authority for review and approval.

The evaluators noted that the requirements for rating for TE of UNDP/GEF projects do not include rating on project design and formulation, apart from rating on monitoring & evaluation at the design and on project relevance. This appears to be an insufficiency in the evaluation framework as the project design/formulation is one of the two principal factors (together with implementation) that affect the level of achievement of the planned results. Therefore, the evaluators decided to give the voluntary ratings as shown in Box 1 below.

Table 6: Ratings on project design/formulation

Item	Rating
Project rationale and logic	Satisfactory (S)
Formulation of the results chain and the logframe	Moderately Satisfactory (MS)

Project Implementation

This section reviews the project implementation arrangements with focus on adaptive management, stakeholder involvement, project financing and monitoring and evaluation.

Adaptive management

Several cases of adaptive management were triggered by uneven deployment of the GEF funds to the project account from the National Treasury. Due to difference of the UNDP and GoK fiscal reporting years, the project experienced lack of funds in November/December and June/July. In order to bridge the temporary lack of funding, arrangements had to be made for direct payments by UNDP upon preauthorisation by the MENR.

In order to reduce delays in procurement of goods and services due to the necessity to adhere to the GoK procurement rules, the project had in some cases to procure services of consulting companies rather than individual consultants and procure through GoK institutions instead of using open tenders. Major equipment pieces had to be procured by UNDP's procurement service.

A substantive case of adaptive management was noted in relation to the originally planned provision of equipment for HCW treatment to the selected HCFs. The procurement plan in the Project Document envisaged procurement of small non-combustion equipment for 9 hospitals, large non-combustion equipment for 2 hospitals and retrofitting of one incinerator with air pollution control system. Since non-combustion equipment for HCFs was provided also under the parallel co-financing arrangements (the Belgian support), the project re-directed its focus on strengthening of the centralised HCW treatment approach and supported development of national specifications for a HCW transport vehicle. One such vehicle was procured for the

HCFs in the Nakuru county. The county government of Nairobi utilised the specifications to procure its own HCW transport vehicle.

The MTR triggered further adaptive management as it made several recommendations to review the target for reduction in the emission of UPOPs under Component 3 (HCW) prioritize the hardware procurement activities and increase involvement of private sector (e.g. waste recycling firms) in the project activities. Limited changes were triggered by the MTR recommendations. The project team did not review the targets since they did not see need for the same. However, measures were taken towards fast tracking procurement of hardware, and consequently the FY 2020/2021 activities were dominated by the hardware provision component. There were no significant changes in planned outcomes.

Another case of adaptive management related to the planned sub-component on collection and exchange of mercury-containing equipment. However, the MoH had stopped procurement of such equipment and inventory conducted under the project found that the project HCFs used almost exclusively mercury-free thermometers so development of the guidance for the replacement of mercury devices was no longer relevant and was dropped from the work plan. About 100 inventoried mercury thermometers have been stored as obsolete materials at the respective HCFs and wait for disposal in an environmentally sound manner as hazardous waste.

In the last 2 years of the project, adaptive management was also required for adjustment of the project work plans as a reaction to the outbreak of the COVID-19 pandemic, taking into consideration in-country travel and meeting restrictions, as well as disruptions of international and national supply chains.

COVID-19 presented new challenges to waste management, both at the municipal level and the HCFs. There was a remarkable increase in uptake of Personal Protective Equipment (PPE), most of which are single use items requiring disposal after few hours of use. Hospitals, healthcare facilities and individuals were producing more waste than usual, including masks, gloves, overalls, and other protective tools. In May 2020, the Ministry of Health released the National Guidelines for Managing Wastes from used masks that effectively categorised used mask as infectious waste. This coincided with the delivery of commodities procured by the project (PPEs, bins, liners, waste trolleys) to HCFs thus a very timely intervention. In parallel with the UPOPS project, UNDP Kenya with support from Japanese Government procured 2 microwave facilities that were delivered to the Migori and Busia County referral hospitals that are located in border towns and faced elevated risk of COVID transmission due to cross border movement of goods and services.

Late in 2020. MEF established a digital meeting platform that served for planning and monitoring meetings by the project team. However, for validation of policy and legislative deliverables under Component 1, the project continued to convene in-person meetings. However, this could be done only within the participant numbers allowable and thus reduced and delayed the stakeholder contribution and feedback in comparison with the pre-COVID period.

Actual stakeholder participation and partnership arrangements

The project engaged the GoK stakeholders through their participation in the PSC meetings and additional stakeholders through meetings of the Technical Advisory Committee (TAC). The TAC meetings ensured necessary coordination of planning and reporting for activities under the various project components. The actual stakeholder involvement was in line with the stakeholder engagement plan in the Project Document.

In the project first 3 years, several stakeholder engagement sessions were held targeting the universities, private sector, NGOS/CBOs, county governments of the respective target counties, and other government agencies. The Kenya Association of Manufacturers (KAM) and Agrochemical Association of Kenya took leadership in promoting awareness on chemical safety among its membership. The KAM has gone ahead to adopt the Responsible Care Global Charter and is working with its membership to ensure that they adhered to proper management of chemicals and waste from their manufacturing operations. The two institutions were instrumental in the review of various legislative instruments related to chemicals and waste management including the draft Extended Producer Responsibility (EPR) Regulations, 2021. The University of Nairobi took leadership in mobilising other universities to revise their curriculum to include issues of chemicals and waste management. The NGOS/CBOs played a key role in mobilisation of groups involved in waste management and sensitization on 3Rs. The mobilisation of these groups targeted women led initiatives, youths and other vulnerable members of the society. NEMA was instrumental in the review of regulations as per the gap analysis undertaken by the project. All the meetings organised through the project ensured participation of women.

In addition to the GoK agencies, the project successfully engaged with other stakeholders, including the Environment and Health Offices of the counties of Nairobi, Mombasa, Nakuru and Kisumu. The project also linked, although less extensively, with the private sector companies in relation to recycling of parts of the waste streams, and with NGOs/CBOs in the communities around the waste landfills on collection of waste at the point of generation and recycling/reuse of segregated waste.

Further to the recommendation to conduct a gender analysis made in the 2019 and 2020 PIRs, the project team tried to recruit a consultant to develop a framework on gender mainstreaming in sound chemicals management. The tender was announced in April 2020, but no bids were received. Due to the COVID -19 pandemic restrictions there was no re-advertisement.

There was a reduction in the frequency of the project stakeholders' meetings during the COVID-19 pandemic. In the 2nd half of 2020, the Ministry of Environment and Forestry (MEF) established a digital meeting facility Webex that was used for the project planning and monitoring meetings. However, in-person meetings within the numbers allowable were convened for validation of the policy and legislative deliverables. According to the project reports, the levels of contribution and feedback was lower in comparison to pre-COVID period.

In line with the MTR recommendations, the project intensified engagement with the private sector and CBOs in Outcome 4 activities. Specifically, the Kenya Association of Manufacturers and Kenya Chemical Society from the private sector, as well as CBOs such as the Green Belt

Movement and Kenya Disaster Concern were engaged in the solid waste management and capacity building of the community organisations on sorting and recycling of waste for value addition. These stakeholders also actively contributed to mobilisation and networking of the respective county groups engaging in solid waste management and in prioritisation of collected materials to be conveyed to industry for recycling. They also engaged in the production of information, education and dissemination materials on solid waste management and non-burn technologies.

Project finance and co-finance

Analysis of the project financial aspects was based on the information sourced from the annual Combined Delivery Reports (CDRs) for the years 2018 – 2020 and two quarterly CDRs for 1st and 2nd quarter of 2021. This analysis aims at assessment of project financial delivery by years and by products, and the share of the project management budget line in the total budget.

The GEF grant for this project was approved at US$ 4,515,000 and together with expected co-financing of US$ 21,008,803the total cost of the project at inception was US$ 25,523,803. Table 7 below displays the breakdown of expenditures from the GEF grant by the years of the project implementation period.

Table 7: Actual expenditures by years of implementation (as of 31 December 2021)

Project Component							
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2016-2021**
Outcome 1		259,491.24	197,798.80	176,392.89	111698.62	-431909.94	**717,436.72**
Outcome 2	9,127.18	169,189.11	97,535.45	84,513.27	441,293.82	-84,222.11	**708,309.54**
Outcome 3	135.94	4,223.96	5,709.72	103,219.78	458,374.13	1,231,701.99	**1,803,365.52**
Outcome 4		69,382.35	221,042.82	109,507.74	280,231.19	136,683.35	**816,847.45**
Project Management	12,541.53	234,177.90	271,894.81	240,373.13	-500,810.68	7,827.36	**264,181.25**
Exchange rates		-1,237.78	-6.93	-2,802.49	999.84	-869.56	**-3,916.92**
Total	**21,804.65**	**735,226.78**	**793,974.67**	**711,204.32**	**791,786.92**	**861,329.85**	**3,915,302.55**

It follows from Table 7 that the total expenditure from the GEF funds at the project closure was US$ 3,915,302.55 that is 86.72% of the total GEF grant. Furthermore, the data in Table 7 demonstrate relatively even implementation of the project in years 2017-2021 with total annual delivery 18-22% of the total expenditures.

Table 8 below provides comparison of the planned and actual expenditures by the project components.

Table 8: Planned and actual disbursement of the GEF funds by components – as of 31 December 2021

Project Component	Budget (US$)	Expenditures (US$)	%
Outcome 1	500,000	313,471.61	62.69%
Outcome 2	900,000	717,436.72	78.72%
Outcome 3	1,750,000	1,803,365.52	108.19%
Outcome 4	1,000,000	816,847.45	81.69%
Outcome 5	150,000	264,181.25	99.69%
Project Management	215,000		
Unrealised loss/gain	0	-3,916.92	N.A.
Total	**4,515,000**	**3,915,302.55**	

The data in Table 8 shows that the planned budget was fully expended only under Outcome 3 while the financial delivery of Outcomes 1, 2 and 4 ranged from 62.7 to 81.69 % of the planned budget. There were no variances on expenditure over 10% of the planned budget hence the project financial delivery was compliant with the GEF policy.

It follows from Table 8 that the planned budget for Project Management was less than 5% (4.76%) of the GEF grant. Such financial allocation is reasonable for the project of this size and complexity and in-line with the GEF policy on project preparation. However, it is not possible to compare the planned and actual amounts for the budget item due to the fact that UNDP did not record the PM expenditures separately and merged them with expenditures on Outcome 5 (M&E). Nevertheless, the total underspending on Outcome 5 suggests that there was sound control over the PM budget item.

The project was designed to attract co-financing from several stakeholders. Therefore, the figures from Section 3.2 of the Project Document are taken further for analysis of the co-financing. Table 9 below compares the planned co-financing at the project inception with the actually realized co-financing at the completion of the project.

Table 9: Comparison of planned and actual co-financing by source (US$)

	Government (US$)		Partner Agency (US$)		Total US$	
	Planned	**Actual**	**Planned**	**Actual**	**Planned**	**Actual**
Grants		41,613				41,613
Loans/concessions			9,500,000		9,500,000	-
In-kind support	8,560,153	14,280,808	2,028,644	1,251,500	10,588,797	15,532,308
Other					-	-
Total	8,560,153	14,322,421	11,528,644	1,251,500	20,088,797	15,573,921

It follows from Table 9 above that the total actual co-financing at TE reached US$ 15,573,921 that is 74.13 % of the total amount pledged at the project inception. A major part of the realised co-financing was through mobilised investment from loan under the MoH- Belgium Government partnership. While the actual co-financing contribution of several stakeholders more or less reached the level of their initial pledges, the contributions from MENR, the 4

participating counties and the NGOs were lower than expected. However, a large part of co-financing did not materialise due to delays in implementation of the JICA-GoK project for a central incinerator facility[12]. Table 10 below summarises the co-financing by the individual project stakeholders.

Table 10: Confirmed Sources of Co-Financing at TE Stage

Source of co-financing	Name of co-financier	Type	Investment Mobilised	Amount (US$)
Recipient Government	MEF	In-kind	Investment mobilised	10,795,408
Recipient Government	MEF	Grant	Recurrent expenditures	41,613
Recipient Government	MoH	In-kind	Investment mobilised	3,200,000
Recipient Government	NEMA	In-kind	Investment mobilised	198,400
Recipient Government	WRMA	In-kind	Investment mobilised	87,000
Other	University of Nairobi	In-kind	Investment mobilised	499,000
CSO	Green Belt Movement	In-kind	Investment mobilised	735,000
CSO	Kenya Disaster Concern	In-kind	Investment mobilised	17,500
Total				**15,573,921**

The co-financing information was readily available for the TE suggesting that the project partners tracked the co-financing contributions of the project stakeholders.

Monitoring and evaluation: design at entry and implementation

For the assessment of the M&E framework, the evaluators reviewed some of the project documentation related to monitoring and reporting, including the Project Document, Annual Progress Reports (APRs), as well as GEF Project Implementation Reports (PIRs).

M&E design at project entry

The Monitoring & Evaluation (M&E) Framework is in details described in Section III of the Project Document. It comprises of standard M&E items such as the Inception Workshop (IW), meetings of the PSC, annual Project Implementation Reports (PIRs), the Mid-Term Review (MTR) and the Terminal Evaluation (TE).

The total indicative cost for the M&E plan is (excluding the project team staff time and UNDP staff travel expenses) US$ 150,000, i.e. about 3.3 % of the GEF grant.

The design of M&E framework follows the standard M&E template for UNDP/GEF projects of this size and complexity. Overall, the evaluators found the M&E design adequate for monitoring the project results and tracking the progress toward achieving the objectives.

The evaluators found the design of the M&E plan practical and sufficient for monitoring of results and tracking progress towards achieving the objectives. Also, the budget allocation for the M&E plan was found adequate to the complexity of the project. Therefore, the M&E design is rated **Satisfactory (S).**

[12] The Project of Medical Waste and Hazardous Waste Appropriate Processing Plant in Nairobi funded through a new JICA grant aid scheme for PPP-type projects

M&E at implementation

The main subject of the discussion here is the implementation of the originally planned components of the M&E plan. No training on M&E was reported by the project team. The monitoring of environmental and social risks as identified through the initial UNDP SESP were monitored as per the relevant section of the annual PIRs and no additional social and environmental risks were identified during the project implementation.

Inception Workshop

The Project Document stipulated that the Inception Workshop will be held within the first 4 months of the project start with the aim to discuss the roles, functions, and responsibilities within the project's decision-making structure including reporting and communication lines, and conflict resolution mechanisms and

The IW was held on 9-12 August 2016, i.e. less than one month after the official signature of the project by the GoK and with no Project Manager in place. Reportedly, the IW was organised quickly on request of the MENR to get the project started. However, apart from UNDP, the workshop was attended by 36 participants from the relevant ministries and agencies (MENR, MoH, MoITC, NEMA, WRMA), the 4 participating county governments, the University of Nairobi, the Kenya Association of Manufacturers and two NGOs (Kenya Disaster Concern and the Greenbelt Movement).

The IW participants formally approved the UPOPs project corporate governance in the form of the Project Steering Committee (PSC) with representation of the MENR, MoH, Director Public Health and Treasury, and UNDP CO. In addition, the IW designated the Permanent Secretary of MENR as the PSC chair and authorised establishment of the Technical Committee (TC) through requesting the CEOs of the IW participating institutions to nominate members of the TC.

Although the Project Document stipulated finalisation of the 1st Annual Work Plan (AWP) to be done at the IW, this task was in fact delegated to the TC.

Annual Project Reports/Project Implementation Reviews (APRs/PIRs)

The most important instrument in the monitoring process were the Project Implementation Reviews (PIRs) prepared regularly with annual periodicity at the end of each GEF fiscal year (July to June).

The first PIR was prepared for the GEF Fiscal Year 2018 (for the period 1 July 2017 – 31 August 2018) so only 4 PIRs were prepared during the project period (for the GEF fiscal years 2018 to 2021). The PIRs were elaborated in a standard uniform structure and contain detailed reporting on progress towards performance targets at outcomes as well as the project objective levels. The section on management of critical risks contained description of operational delays occurring during the project implementation without information about managing the delays.

In line with the UNDP/GEF requirements, the PIRs are supposed to contain assessment and ratings of the project progress by the PM, UNDP CO, the project Implementing Partner and the UNDP RTA. The actually given ratings are summarized in Table 11.

Table 11: Summary of PIR ratings by the project partners[13]

PIR Year	PM		UNDP CO		MENR/MEF		UNDP RTA	
	DO	IP	DO	IP	DO	IP	DO	IP
2018	S		S	S	-		S	S
2019	S		S	MS	-		S	MS
2020	S		S	MS	-		S	MS
2021	-		MS	MS	-		MS	MS

The evaluators found the PIRs compliant with the standard UNDP/GEF project reporting requirements. Apart from a large descriptive section on development progress provided by the Project Manager, the PIRs also contain concise summaries by the UNDP CO and UNDP RTA However, none of the PIRs contain summary assessment and rating by the MENR/MEF as the national implementing partner and by the GEF Operational Focal Point (OFP). The PIR self-evaluation ratings were found consistent with the MTR and TE findings.

The evaluators found the project monitoring reports informative and effective to ensure the required feedback for improved project performance. However, there is no evidence about discussion of the monitoring reports with a wider circle of stakeholders beyond those represented at the PSC, in particular the GEF OFP and representatives of the participating counties. Also, there is no indication of any actions towards monitoring and data collection related to the performance of the participating HCFs and selected municipal dumpsites.

Project Steering Committee

The PSC executed its role in M&E activities through its regular meetings when presentation of narrative APRs by the Project Manager was followed by discussion and approval of the Annual Work Plan (AWP) for the forthcoming year. The PSC meetings are summarised in Table 12.

Table 12: Summary information on PSC meetings

Meeting No.	Meeting Date	Meeting No.	Meeting Date
1	27 September 2016	7	14 December 2018
2	22 December 2016	8	15 January 2020
3	5 April 2017	9	22 July 2020*
4	22 June 2017	10	14 January 2021
5	17 January 2018	11	14 June 2021*
6	31 July 2018	12	

*Joint MEF-UNDP integrated review meeting

It follows from Table 10 that the PSC meetings were organized biannually in line with the schedule initially outlined in the IW report, with the exception of the year 2019 when no PSC meeting was held. The reason for that mentioned at the PSC meeting in January 2020 was the global transition within UNDP that affected also the UNDP CO in Kenya.

As of 2020, the GoK introduced the practice of annual joint UNDP-MEF integrated review and steering committee meetings for the entire UNDP portfolio of environment projects. This was in-line with the UNDP portfolio approach aiming at promoting synergies between various

[13] DO = Development Objective Progress, IP = Implementation Progress

projects in the environmental cluster. The UPOPs project was presented in two integrated review meetings, in July 2020 and June 2021.

The evaluators concluded that the PSC was effective in fulfilling its essential oversight function for the project through review of the project annual progress reports and approval of AWPs throughout the entire project duration. However, the PSC was found less effective in fulfilling its other function that would contribute to better strategic positioning of the project within the country and to its visibility in the participating counties. There was a disparity between the composition of the PSC made entirely of representatives from the ministries and agencies of the central government and the focus of major parts of the project on support of direct project beneficiaries at the county level. The disparity was acknowledged by the UNDP Deputy Resident Representative (DRR) at the PSC meeting in January 2020 with a suggestion to invite representatives of the 4 participating counties to the PSC meetings in order to bring the project support closer to the direct beneficiaries and receive their immediate feedback for a more effective planning of the project interventions. Nevertheless, no action was taken to enlarge the PSC membership.

Although not envisaged by the original management arrangements outlined in the Project Document, the project established a Technical Committee composed of representatives of all project partners. The Technical Committee discussed some operational and technical matters and prepared quarterly and annual work plans for consideration and approval by the PSC. Representatives of the counties were involved in the work of the Technical Committee and thus participated in the planning of the project activities.

According to the information collected from the project team, there was some misunderstanding about the purpose and importance of the individual M&E tools such as the PIRs. This could be attributed to the fact that the project reporting tools were not sufficiently discussed at the IW in order to understand the purpose of the PIRs in comparison with the QWPs/AWPs.

Mid-Term Review (MTR)

The Project Document required the MTR to take place at a mid-point of the UPOPS project implementation and determine progress made toward the achievement of outcomes, make assessment of efficiency and timeliness of project implementation as well as highlight issues requiring decisions and corrective actions.

The MTR was conducted by one international consultant and included a 2-week field mission to Kenya in August 2019. The MTR report was completed in November 2019.

The Mid-Term Review (MTR) produced 11 recommendations. The evaluators found the formulation of the MTR recommendations in line with the common practice and UNEG guidance[14].

A summary of MTR conclusions and recommendations was shared with the PSC members at the PSC meeting in January 2020 together with the information that the Technical Committee

[14] Improved Quality of Evaluation Recommendations Checklist, United Nations Evaluation Group (UNEG), 2018

had addressed the MTR recommendations and included corresponding actions in the 2020 AWP.

In line with the standard procedures, UNDP as the implementing agency prepared a management response to the MTR recommendations in the form of an action plan on the MTR recommendations that was completed in early 2020. The MTR recommendations with the corresponding management response actions and their status are summarized in Table 13 below.

Table 13: Summary of MTR recommendations and management response

#	Essence of the Recommendation	Management Response – Key Actions	Status
1	Review the targets for reduction in the emission of UPOPs due to Component 3 (Healthcare waste)	Revision of the targets for the reduction of UPOPs due to Health care waste Communicate the revised target to UNDPRO	The new targets were revised and reflected in the new matrix and communicated to UNDP
2	Identify emergency measures for reduction of UPOPs due to burning of SW and facilitate their implementation	Definition/identification of emergency measures to address emergency situations at the dumpsites Emergency measures capacity building plan developed and mainstreamed in project implementation	Targets and activities addressing emergency measures well-articulated Emergency measures capacity building plan was developed and mainstreamed
3	Promote alternatives to dumping of Organic Solid Waste	Revision of Target 74 to include composting Revision of the workplan to include the recommended scale-up of composting actions by the community	Revision of Target 74 done The work plan was revised to include scale-up of composting activities by the community
4	Review of the provisions regarding PRTR	Development of PRTR to provide empirical information on trends of UPOPs emissions at hotspots in Kenya Revise the activities to include quantification of emissions using the UNEP toolkits.	Reported as completed without details of the completed actions
5	Promote recycling of plastics in HCW	Technical Committee meeting develops recycling action plan Develop an awareness and demonstration of Health Care Facility plastic waste recycling manual/kit and a dissemination plan of action	Recycling action plan developed and put in place
6	Extension to Implementation timelines	Multi-year Annual workplans 2020 and 2021 to fully cover the planned activities to project end Adaptive management to fast track planned activities for 2020/21 Seek project extension if key actions for sustainability are yet to be realized and no other solution is identified to complete all activities by the planned completions dates	Multi-year Annual workplans 2020 and 2021 to fully cover the planned activities to project end - including the NCE Acceleration Plan developed
7	Prioritize the hardware procurement activities	Identify and provide specification of all the hardware for the Health Care Waste management Procurement plan to cover all the hardware for the Health Care Waste management. Procurement to follow as planned	Specification for procurement of hardware for HSWM elaborated Procurement plan developed. Delays in procurement occasioned by government systems
8	Facilitate implementation of measures/ technologies to dispose of SW in ESM and recycling of plastics in HCW by private sector participation.	Develop a private sector dialogue and engagement framework Preparation of a report on the best practices and case studies of PPP for SW in other developing countries having similar situation Based on a) and specific conditions of Kenya, recommendations regarding SW disposal technologies and recycling of plastics in HCW and the corresponding PPP model Sensitization of the stakeholders (relevant government officials, politicians, representatives of industry etc.) about the findings of a) and b) above Study tour of the stakeholders to the countries/locations where such PPP initiatives are working successfully	Reported as completed with no detail Reported as completed with no detail Reported as completed with no detail MTR findings disseminated Reported as completed with no detail
9	More involvement of private sector (e.g. waste recycling firms) in the project activities	Potential areas for private sector engagement in the waste recycling value chain clearly identified for the respective counties MOUs/Supply Contracts signed with the companies that contain targets and the support to attain increase in recycling	Reported as completed without details of the completed actions
10	Formalize the dropping of the activity to replace mercury devices with non-mercury devices	Revision of Target 29 through the PSC Monitoring of the replacement of equipment with mercury to continue but not as part of the project reporting targets	Target revised Monitoring mechanisms have been put in place
11	Hire Technical Advisor for the project	Review budgets and activities to identify resources for the engagement of technical advisory services Engage technical advisor as allowed by resources, as and when required	The technical advisor was not recruited

Overall, the MTR highlighted the areas on implementation insufficiencies and identified the activities in delay and outputs with slow progress. All MTR recommendations were accepted and key actions to address these shortcomings as listed in the management response were taken. According to the status update at the UNDP Evaluation Resource Centre (ERC) website, a majority of the key actions from the management response to MTR have been completed, however, for some actions no concrete details are given. The TE team noted that MTR Recommendation 11 was not fully implemented due to availability of good technical advice at the national level.

Terminal Evaluation (TE)

The Project Document stipulated that the TE should be conducted three months prior to the final Project Board meeting.

The TE was finally commissioned by the UNDP CO in October 2021. It was conducted by a team of one international and one national consultant. Due to COVID-19 travel restrictions it was conducted as virtual evaluation with use of on-line meeting facilities. However, the national consultant conducted a visit to the field sites in the four participating counties on 16-24 December.

There was no information reported on training of the parties responsible for M&E activities to ensure that data will continue to be collected and used after project closure. As the PRF did not include any indicators and targets for monitoring of environmental and social risks, involvement of special groups of target population, and the impact of the project activities on those groups, the M&E activities did not cover these aspects and focused on monitoring of technical aspects of the project and achievements of the targets contained in the PRF.

Based on the above findings, the evaluators' assessment of the M&E plan is provided in Table 14 below.

Table 14: TE Ratings of M&E plan

Monitoring & Evaluation	TE Rating
M&E design at entry	Satisfactory (S)
M&E plan at implementation	Moderately Satisfactory (MS)
Overall quality of M&E	**Moderately Satisfactory (MS)**

UNDP and implementing partner implementation / execution

The project followed the management arrangements presented in the Project Document that were based on a common scheme for project management arrangements under the National Implementation Modality (NIM) with support of the UNDP CO.

Performance of the Executing Agency (MENR/MEF)

A senior officer of the MENR was designated as the National Project Director (NPD) for the project. The NPD provided overall guidance to the project management and ensured coordination with other entities of GoK and UNDP.

The day-to-day management of the project was ensured by the Project Management Unit (PMU) with a full-time Project Manager (PM) supported by an administrative staff and a full

time Technical Advisor. The latter ensured adequate technical capacity within the PMU to guide and evaluate the inputs by the consultants. The technical aspects of the project were also supported by the Technical Committee (TC), comprised of technical experts drawn from the participating institutions. The TC members also steered the project in their respective institutions.

Two officials from the Ministry of Health (MoH) were involved on a part-time basis (about 60% of time) and led implementation of Components 2 and 3. The NEMA County Directors in the four counties were actively involved in implementation of Components 3 and 4. Through this matrix arrangements, the project strengthened the working relations between the MENR and MoH.

The institutional arrangement for the project was driven by the need to bring together key actors in the GoK, academia, private sector and non-government organizations. The initial project design on the private sector and NGO was to have some of the institutions work as responsible parties, implementing certain components of the project. However, this arrangement may not have worked well due to bureaucratic challenges in transferring money from the GoK to private entities. This may have led to certain delays in piloting of the technologies under Component 4. The administrative hindrances also prevented transfer of funds to the MoH to take full charge of their components.

As a matter of fact, funds disbursement presented noticeable challenges since the project start. Disconnection between the respective UNDP and GoK financial reporting periods had a recurring negative impact on the disbursement and utilization of the project funds channelled through the National Treasury. The main challenge occurred in November/December when the government estimates were captured and the project annual workplan and budget for the following year were prepared for approval. The difference between the financial planning and reporting periods also affected access to funds at the closure and opening of the GoK financial year in June/July.

The cause of the challenges was application of the Programme Based Budgeting that is mandatory as per the Public Financial Management (PFM) Act (2012). Funds disbursements is strictly based on adherence to GoK's reporting requirements. The project was frequently subject to operational budget insufficiencies due to budget allocation by the National Treasury being smaller than the funds needed and requested by the PMU. Closure of the Integrated Financial Management Information System (IFMIS) at the end of each GoK fiscal year affected the availability of funds and in some cases an additional administrative procedure was necessary for funds allocation through a special deposit account. In other cases, activities were funded through the Direct Payment Request method where UNDP made direct payments to vendors for preauthorized activities.

The above challenges are obviously not specific to the UPOPs project but occur across the entire portfolio of projects implemented in Kenya by UNDP and other UN agencies. Although UNDP acknowledged and tried to address the above challenges, they were not resolved until the closure of the project.

Moreover, the project had a slow start due to delayed hiring of the Project Manager and the other members of the project team. Although the project was officially signed in July 2016, the PMU was in place only several months later so in the initial months the project was managed by a caretaker group of two officials from the MENR. There were also numerous delays in procurement of goods and services due to the need to adhere with national rules and regulations for procurement.

Despite relatively good coordination between relevant national stakeholder institutions, the project experienced a number of lengthy delays due to various administrative hindrances. Nevertheless, the evaluators found the national execution of the project effective and timely. The administrative hindrances were of systemic nature and therefore beyond the control of the national IP.

There were no explicit plans for management of the environmental and social risks. However, as already discussed, these risks were addressed through various project activities and duly reported in the annual PIRs.

Performance of the GEF Implementing Agency (UNDP)

UNDP CO in Kenya was responsible for ensuring proper use of GEF funds, timely reporting of the implementation progress to the GEF Secretariat as well as undertaking of mandatory evaluations. UNDP CO also provided operational support to the project, in particular support for the procurement of goods and services and recruitment of personnel in accordance with UNDP rules and regulations. It also played an active role in the project monitoring through participation in field visits, consultations, and review meetings with various project stakeholders. Last but not least, the UNDP CO also provided quality assurance function for the project to ensure required quality of the project deliverables and adherence to the UN SDGs and UNDP strategic priorities.

UNDP Regional Technical Advisor located in the UNDP Istanbul Regional Hub (IRH) provided technical advisory and backstopping to the project. The RTA support was provided mainly through remote monitoring of the project and regular input into project reports including the PIRs. Involvement of the RTA in similar projects in other countries of the Africa region was particularly useful in this regard.

There was a change of the RTA in the last year of the project implementation due to relocation of the original RTA to UNDP HQ in April 2021. Since the project was almost at the end of implementation, the UNDP management decided to assign the technical backstopping to another IRH-based RTA rather than wait for recruitment of a new RTA. The cooperation between the original and successor RTAs was good and the two provided joint input into the last PIR for 2021.

The evaluators concluded that the UNDP support for smooth implementation of the project and achievement of the planned results was adequate and timely.

The rating for the UNDP/IP execution is given in Table 15 below.

Table 15: TE rating of the UNDP Implementation/Oversight & Implementing Partner Execution

UNDP Implementation/Oversight & IP Execution	TE Rating
Quality of Implementing Partner Execution	Moderately Satisfactory (MS)
Quality of UNDP Implementation/Oversight	Satisfactory (S)
Overall quality of Implementation/Oversight and Execution	**Moderately Satisfactory (MS)**

Risk Management, including Social and Environmental Standards

The project risk in relation to SES was categorized as moderate. Annex VI of the Project Document contains a completed template of the Social and Environmental Screening Report that identified the following social and environmental risks:

- Risk to communities and workers' health and safety posed by the improper handling of hazardous healthcare waste segregation and solid waste unregulated management in dumpsites;
- Risk from generation of hazardous and non-hazardous waste;
- Risk that local communities at dumpsites refuse to change their economic model

Throughout implementation of the project, the first risk at the level of HCFs was addressed through development of HCWM regulations that included introduction of better waste segregation, provision of required tools and equipment, and training of health care workers and waste collection contractors. At the level of waste dumpsites, development and implementation of an emergency plan for one priority dumpsite contributes to prevention of the risk of major fires and thus reduction of environmental and safety hazards for the local communities.

The project supported development of improved regulatory controls for environmentally sound and safe treatment HCW and solid waste management. Implementation of the new regulations will improve waste segregation and reduce the risk from hazardous waste generation.

Despite the effort on creation of material recovery centres in the four participating communities, the planned work was not completed due to lack of response of the local CBOs. This part was negatively affected by the COVID-19 restrictions that prevented more extensive engagement of the project team in the counties.

Overall, the risk to SES was to be managed through application of strong oversight and safety principles by the UNDP CO Kenya and regular communication with the UNDP RTA on technical support. This approach was followed throughout the project implementation. However, no information was available as to the information of the PSC about the risks.

Project Results and Impacts

Progress towards objective and expected outcomes

The information presented in this section was sourced from the various UPOPs project implementation reports and verified with information collected through interviews with key project stakeholders. Additional sources of information were various studies and technical reports produced by the project. The list of documents consulted is provided as Annex 4 to this report.

The principal questions discussed in this section are whether and how the UPOPs project outcomes as well as the Project Objective have been achieved. Eventually, the further text also highlights positive and negative changes and effects induced by the project interventions.

In the series of tables below, the UPOPs project results are summarized and compared against the target indicators listed in the PRF.

Tables 16 – 21 contain a summary of the actually delivered project results in a bullet point format. The tabular summary is followed by a short narrative text with additional insight and details on how and why the results have or have not been achieved. By this token, the text following each table summarizes some important facts related to the project results that could not be captured in the tables but were considered important for the justification of the rating of the project outcomes. At the end, the narrative also explains the basis for rating of individual project outcomes.

Table 16: Status of deliverables for Outcome 1.1

Indicator	Targets End of Project	Status End of Project
Output 1.1.1: Overall policy framework and specific regulatory measures covering environmentally sound management of chemicals in general and POPs in particular through chemicals life cycle management developed and implemented.		
Availability of a completed and comprehensive gap analysis.	Gap analysis completed within 12 months from the project start.	Gap Analysis Report produced in March 2021
Availability of a nationally endorsed roadmap for improving the existing regulations.	A policy and legislation review roadmap approved within 24 months from project start	Road Map identified policies and legislation to be developed/reviewed, institutional capacity building, and intersectoral coordination
Number of new or reviewed regulatory acts to take into account in a consistent manner the current provisions of the SC convention on POPs, with respect to the overall number of relevant regulatory norms to be reviewed identified in the gap analysis.	The identified polices and legislation regulation/s or their associated norms are amended for compliance with the SC requirements.	Several policies and legislation developed /reviewed • Environmental Management and Co-ordination (Extended Producer Responsibility) Regulations, 2020 (developed;) • National Sustainable Waste Management Bill 2019, developed and gazetted; • National E-waste Management Strategy 2019/20 to 2023/24 developed • Policy On Pesticide POPs and Industrial POPs was developed • Air Quality Regulation 2014 that legislates against open burning of waste revised • Pest control products restructured to address POPs pesticides except those pesticides and industrial chemicals. This completes provisions for all intentionally produced chemicals. • Draft Toxic and Hazardous Industrial Chemicals and Materials Management Regulations 2018 awaiting gazettement • Final Draft National E-waste Management Strategy awaits for NEMA approval. • Chemicals Regulation Strategy being finalized by NEMA. • GHS is now provided in the Toxic Chemicals (industrial) regulations. • Stand-alone project on support to chemicals and waste MEAs and implementation of SAICM
Output 1.1.2: Key institutions have knowledge and skills to formulate and implement necessary chemicals and waste environmental policies, consistent with sound chemicals management principles and obligations under international agreements		
Availability of capacity building needs assessment report	Capacity building needs assessment for central and local institutions in charge of chemical management completed within 12 months from project start.	Institutional Needs Analysis Report For Chemicals And Waste Management In Kenya prepared in 2018 (*consultant report available*)
	Training materials tailored to the Kenyan situation, developed on POPs management, POPs monitoring, chemical emergency response and 3R of waste.	Training materials for HCWM UPOPS emission sources monitoring and need to comply with EMCA and other regulations Training material for POPS monitoring and RTR
Existence of a Training Institution on Chemical Management	At least 2 Excellence Training Centers on chemicals management established at a main Academic Institution	University of Nairobi identified as the future training centre Water Resources Authority Laboratories and NEMA. – awaiting formal designation. Government Chemist Department NEMA air pollution control programme
	At least 200 staff coming from all Kenyan counties and affiliated to governmental institutions, chemical industry and waste management companies selected and trained	Over 200 people from government, private sector and civil society at all levels received training on 3Rs and the risks of open burning of waste

Indicator	Targets End of Project	Status End of Project
	At least 2 training cycles (totally 10 days each) performed during project implementation. Effectiveness of training measured by means of pre-training and post-training examination of the participants	The trainings completed and participants are awaiting certificates
Output 1.1.3: Key institutions have incorporated sound management of chemicals and wastes, including POPs, in their activities**.**		
Number of POPs units at local and central environmental authorities trained and established.	Guidance and procedures for the integration of POPs issues in: chemical management, environmental permitting, waste management are developed for the local and central environmental authorities.	• Four guidance documents developed and await adoption - making policy briefs ○ Sound management of chemicals, policy roadmap and flyers distributed ○ Chemicals residues in food ○ Mainstreaming chemicals in social development activities ○ Use of toxic chemicals in floriculture and horticulture
Availability of guidance documents on Availability POPs and chemical management for local and central authorities.	Units on POPs management are trained and established in key local and central institutions.	Training on POPS done for NEMA, WRA and University of Nairobi Chemistry Department. Training covered POPs issues - recognition of SC recent chemicals; their risks to human health and environment; monitoring their presence in air, water and soils, and policy formulation of the listed and priority WHO chemicals (*report available*)
Availability of inspection reports	At least 6 inspections / year on the fulfilment of POPs regulation in the country performed	No inspections were done by the TE. Expected when the monitoring of POPs for water and air starts in the WRA and NEMA laboratories
Output 1.1.4: National coordinating meetings on POPs held regularly (4 times per year) without GEF financial support		
Availability of the formal act for the establishment of the National Chemical Management Coordination Office (NCMCO).	A National Chemical Management Coordination Office (NCMCO) established at the Ministry of Environment, composed by representatives of relevant Ministries.	Chemicals Unit established at the MEF by the Public Service Commission
Number of coordination meetings held.	Coordination Meetings of the National Chemical Management Coordination Office	No EOP target specified on the number of meetings

Table 17: Status of deliverables for Outcome 1.2

Indicator	Targets End of Project	Status End of Project
Output 1.2.1: At least 70% of laboratory analyses in research and monitoring institutions required to monitor the implementation of national policy on hazardous chemicals and wastes being carried out on a cost recovery basis		
Availability of a national plan for monitoring of POPs which establishes a market-based mechanism.	Capacity building and equipment upgrading needs identified.	• Adequate Testing equipment found to be lacking in most laboratories • WRA Nairobi and Kisumu Laboratories have been supplied with Gas Chromatography System (GCMS) and AAS accessories • The two labs also benefitted from servicing and upgrading of atomic absorption spectroscopy (AAS). The High Performance Liquid Chromatography (HPLC) equipment in Kisumu was not operationalized due to challenges in acquiring the dongle key (
	National plan for environmental and industrial monitoring, which identifies POPs monitoring obligations for key industrial and waste management activities developed and implemented.	A national plan for monitoring of POPs has been adopted by inter-ministerial team. SoPs for POPS monitoring are in place
	A financial mechanism for ensuring the sustainability of POPs laboratories based on incentives and environmental taxes established and piloted for at least one year.	A market-based mechanism provided by the Chemical Regulations 2018
	Two key laboratories on POPs analysis accredited following ISO 17025 standards and associated accreditation schemes	WRA laboratories preparing for the ISO 17025 accreditation at their stations in Nairobi Central Laboratories and Kisumu Laboratories
	Up to 80 laboratories technicians and government staff trained on POPs monitoring related activities following international standards and requirements	This component failed to take off due to COVID-19 related challenges
Output 1.2.2: 70% of universities nationwide include issues of hazardous chemicals and wastes, risks and legislation, in their curriculum		
Number of universities including curricula on chemical risk assessment and management of hazardous chemicals and hazardous waste	University curricula for chemical risk assessment and management of hazardous chemical and hazardous waste adopted by at least 70% of training institution. One cycle of curricula completed in at least 2 universities within the project timeframe.	University of Nairobi, and Masinde Muliro University of Science and Technology The institutions have reviewed their science-based curriculum to include information on MEAs. UoN is implementing its first cycle of training based on new curriculum Kenya Military Academy included chemical management in their training curriculum since September 2019.
Output 1.2.3: PRTR Database and reporting system in place		
Regulatory tool for the implementation and enforcement of POPs / PTS reporting and PRTR established.	By the end of the project, a circular drafted and submitted to GoK for approval related to implementation and enforcement of POPs monitoring and PRTR system to ensure sustainability of the PRTR related	A Draft Circular to for the formal adoption of the PRTR as an enforcement tool is in place. The Circular gives instructions to producers,importers, users and transporters to contribute information on toxic chemicals. However, Circular can only be gazetted after the gazettement of Chemical Regulations 2018, on which the PRTR is anchored.
	Demonstration of an Information Management System to support PRTR	The framework/database for the information management system which will support PRTR has been agreed. The information management system is under development
	A POPs/PTS database established to contain data related to industrial sources, and POPs contaminated sites in 2 Kenyan provinces, and all the country-wide available data on POPs environmental monitoring.	A PRTR tool has been developed. The database covers UPOPs as dioxins and furans are covered by Air Quality Regulations 2014. However, the infrastructure to make it operational is yet to be in place, for the reporting of priority. NEMA has been selected to host the PRTR due to its legal mandate. As the environmental watchdog it has legal mandate to monitor and enforce pollution control regulations. Once Chemicals Regulations 2018 is gazetted then project objective will be met. 2 workshops for key stakeholders on PRTR were held and training on its use by the wider chemicals sector actors is planned.

Summary assessment of Component 1:

The project completed the gap analysis of the key national environmental regulations and assisted with preparation/revision of several policies and legislation to address technical and environmental standards for waste treatment including HCW, the regulation related to the risk-based acceptable level of hazardous chemicals (at least for POPs and heavy metals) in recyclable waste, as well as development of a decree on establishment of PRTR. The draft legislative pieces went through various stages in the legislative approval process. The Sustainable Waste Management Bill was submitted to the Kenya Gazette[15] while other legislative documents and are awaiting gazettement which is a political process beyond control of the project.

Several trainings were organised for various beneficiary groups, including health care workers, municipal waste handlers, policy makers, and officers of regulatory institutions. The evaluation notes that the key institutions have acquired knowledge and skills to formulate and implement necessary chemicals and waste environmental policies, consistent with sound chemicals management principles and obligations of relevant international agreements. The successful trainees are awaiting receipt of a certificate in Chemicals Management. As a result of the trainings, relevant institutions in the healthcare and municipal waste segments have incorporated principles of sound management of chemicals and wastes, including POPs, in their day-to-day activities.

Monitoring activities on POPs did not fully take off due to challenges in operationalising the equipment at the WRA laboratories due to long procurement delays. The project procured auxiliary equipment and consumables for the GCMS system at WRA Central Water Quality laboratory, but the equipment is yet to be fully installed as preparatory works are still ongoing in the host building. For the WRA laboratories at Kisumu, the project procured and successfully operationalised an Atomic Absorption Spectrophotometer (AAS). Efforts to provide a dongle key for operationalisation of a High-Performance Liquid Chromatograph (HPLC) at the Kisumu laboratory were not successful as the contactor was unable to get the required key. The GC system at Kisumu was also not operationalised.

The expected support to WRA for monitoring of POPs was not completed. However, a consultancy is ongoing to establish a baseline of POPs in leachate within the project area. In addition to procurement of equipment and consumables, the project organised training for WRA staff on POPs monitoring. This was an important activity aiming to overcome one of the main shortcomings of project-funded monitoring systems and ensure sustainability of laboratory operations. A standard operating procedure for POPs monitoring is in place and the two WRA laboratories at Nairobi and Kisumu are subject to assessment on ISO 17025 accreditation for specific sampling and monitoring activities. However, the planned training of 80 laboratory technicians did not take place due to COVID-19 restrictions.

Several universities nationwide include issues of hazardous chemicals and wastes, risks and legislation in their curricula. Timing of implementation of this part component coincided with the start of the review cycle of the university curricula. The University of Nairobi (UoN) which

[15] Kenya Gazette Supplement No. 92 (National Assembly Bills No. 22), 12 May 2021

is the largest in Kenya has revised its curriculum for the undergraduates. The revised curriculum contains 3 teaching modules that touch on MEAs and is already in the first cycle of implementation.

The UoN also commenced the process of establishing a Centre of Excellence for training on POPs and is awaiting necessary approvals by the UoN Council. Other universities with chemistry departments have also revised their curricula according to resolutions made during the training workshops organised under the project. However, it should be noted that one university cycle takes 4 years therefore the target of 1 completed curriculum cycle during the project was not realistic.

The project managed to prepare a PRTR database and a related circular, including training of relevant personnel. However, the operationalisation of the PRTR is awaiting gazettement of the Draft Toxic and Hazardous Industrial Chemicals and Materials Management Regulations.

Based on the above summary, the TE rates implementation of Component 1 as **Satisfactory (S).**

Table 18: Status of deliverables for Outcome 2.1

Indicator	Targets End of Project	Status End of Project
Output 2.1.1: Procedures and guidelines for the assessment and implementation of hazardous waste management at healthcare facilities built on lessons and examples from the application of the I- RAT tool under the GEF4 /UNDP Global projects and on the WHO bluebook "Safe Management of Wastes from Health-care Activities" developed and adopted		
Evidence that the guidelines for the Environmentally Sound Management of HCW, including rapid assessment based on the I- RAT tool, have been developed and officially adopted.	Revision/development of HCWM guidelines based on the last edition of the WHO bluebook (tailored to various facility types) which include tool and procedures for rapid assessment of HCWM	• The National HCW Guidelines were reviewed to include I- RAT and be compliant with the SC and are awaiting formal endorsement by the Ministry for Health. • Standard Operating Procedures for HCW were revised to be in line with I-RAT • HCW Communication Strategy developed • The reviewed HCW Guidelines, SOPs and Communication Strategy on adoption by Ministry of Health (MOH) will be disseminated as handbooks to the HCFs across the country • Additional guidelines developed for HCW on COVID 19 waste
	The above guidelines are officially adopted by all the pre-selected HCFs.	• Health care facilities were invited to consider and validate the HCW Guidelines, SOPs and the Communication Strategy • Validation by the HCFs ensured the practicability and possible utilization • Official adoption awaits endorsement by MoH
Output 2.1.2: A national healthcare waste handbook containing guidelines for HCWM drafted and adopted by the MOH, including introduction of non- mercury devices in the HCFs		
Availability of the healthcare waste management handbook and documentary evidence that it has been officially adopted.	Development of technical regulations for HCWM equipment and supplies.	• A guide for microwaves has been developed and is being used to procure the two microwaves under the project. Contract for supply has been signed • Microwave guidelines are under developments informed by the users of 20 microwaves in Kenya • For Autoclaves technologies no regulations are developed as health care facilities are not preferring this option for now due to operating cost considerations.
	Development of standards on technologies for the processing and final disposal of HCW.	• The 100 inventoried thermometers with mercury have been stored as obsolete materials at the respective HCFs to be disposed in an environmentally sound manner as hazardous waste. • Waste from microwaves currently managed as normal waste once treated. However, disposal remains a challenge. • At JOORTH Waste generated is being stored in Nakuru PPG it is buried in Gioto dump and at Coast General Hospital it is disposed with other municipal effort. A proposal to use it as fuel in Bamburi Portland Cement was found not feasible due to small quantities for such a facility. Negotiations are still going on.
	Development of procedure and guidance for the replacement of mercury devices with non mercury	• The need to develop procedure and guidance for the replacement of mercury devices with non-mercury devices was no longer relevant since HCFs have replaced them.
	Updated and reviewed Waste Regulations dating from 2006	• The revised NEMA Waste Regulations 2021 were aligned to the SC guidelines. Emissions and discharges were reviewed in consultation with NEMA, WRA and Kenya Bureau of Standards. Emission limits were revised to include those from a SC compliant incinerator • NEMA adopted SC guidelines on emissions of incinerators - developed Specifications for Incinerators.

Table 19: Status of deliverables for Outcome 2.2

Indicator	Targets End of Project	Status End of Project
Output 2.2.1: Hospital personnel at all levels trained on the implementation of the above procedures		
Number of staff from the project HCFs trained.	All the staff of the HCF will receive training on HCWM. At least 200 staff from the project HCFs trained	• Officers from the 13 pilot HCFs trained. Training scaled out to 12 additional HCFs that were not part of the project pilot. Over 200 staff at National and County staff trained on HCWM practices and risks associated with waste disposal. • Training has been conducted for waste handlers; public health officers and selected medical superintendents. • Training of trainers on HCWM carried out annually since 2016. • 65 People were trained in the reviewed HCM management tools. • Over 200 staff trained on HCWM - production, segregation, storage, transport, treatment and disposal.
Output 2.2.2 Baseline assessment of each healthcare facility based on the assessment procedures developed in 2.1.1 carried out, and waste management plans based on the baseline assessment level drafted and implemented		
Baseline assessments conducted for all project facilities	I-RATs conducted for each of the HCFs participating /benefitting from the project. UPOPs releases before implementation of BAT/BEP determined for each project facility.	Assessments using I-RAT tool conducted in 2021 for the 13 HCF. (*Assessment Reports provided as evidence)*.
Output 2.2.3 ESM management of healthcare waste (based on WHO bluebook) implemented in 4 facilities in each county (12 facilities in total) including replacement of mercury devices with non mercury		
All the project HCFs have introduced BEP in a satisfactory manner.	Memoranda of Understanding (MoUs) signed with all project HCFs.	Memoranda developed but not signed. The process towards having the MoUs signed with the government facilities too challenging to pursue.
	HCWM committees of all HCFs strengthened or established where missing.	HCFs Infection Control Committees were adopted for the HCWM and strengthened through training, and technology transfer at the 13 pilot facilities. In most facilities the Infection Prevention Committee (IPC) doubles up as the HCWMC.
	HCWM policies, procedures and plans developed and implemented at each project HCF.	Review, update of the policies and plans in line with the WHO Blue Book These guidelines used in the selection of the appropriate technology for the respective HCFs.
	HCFs supported in minimizing waste streams, improving segregation and introducing recycling activities	HCFs benefiting from BAT/BEP identified from the needs assessment and designated as central facilities for HCF treatment Equipment for waste management segregation, storage and transposition provided to 13 pilot Health facilities. Equipment and commodities were for sorting waste at source (bins, bin liners, safety boxes) and moving waste (trolleys), and PPEs for the waste handlers of the different waste types and weighing machines so that they can keep records generated at the facilities.
	Each HCF evaluated to verify introduction of BEP practices	BAT/BEP introduced by project include: Likoni Hospital, Port Reitz, Nakuru PPG and JOORTH facilities to use microwaves. Mbagathi facility incinerator upgraded with an Air Pollution Control (APC). JOORTH incinerator being upgraded with APC. Mama Lucy Hospital upgrading its incinerator. Mathare Hospital being upgraded. Kisumu East being upgraded with an ashpit and glass crasher. Coast General helped with commodities. PIR notes that the personnel in the HCFs reported on practices adoption progress during the many training sessions.
	At least 2000 mercury devices replaced by non-mercury devices and safely stored pending disposal	Ministry of Health stopped procuring mercury thermometers Preliminary inquiry about mercury thermometers indicated less than 700 pieces at the pilot facilities, as the activity required a threshold of 1,000 to support the mercury replacement programme – it was not viable
Output 2.2.4: Final assessment of the healthcare facility to measure results achieved with the implementation of the ESM against baseline is carried out and estimated amounts of U-POP releases avoided.		
Availability of final assessment report based on the HCWM guidance.	Final assessment conducted for each of the HCFs participating/ benefitting from the project with the assistance of properly trained project consultants.	Re-assessment of HCFs yet to happen: delays occasioned by delay in installation of the hardware The HCFs will be re-assessed based on the 2018 assessment and the impacts of the training, management changes, commodities given and BAT/BEP in use at the respective facilities.
	UPOPs after implementation of best practices in HCWM determined for each project facility.	This activity could be initiated only upon completion of ongoing BAT installations.

Summary assessment of Component 2:

In relation to training of HCF workers, the TE notes a commendable link of the UPOPs project to the regional GEF-funded project implemented concurrently[16]. The latter project organised an initial 12-day master Training of Trainers (ToT) on Advanced Healthcare Waste Management in Nakuru, Kenya in December 2016. The training event covered not only topics related to safe and environment-friendly HCWM practices but also step-by-step guidance to implementation of mercury-free policy and products as well as introduction to WHO/UNICEF's Water and Sanitation for Health Facility Improvement Tool (WASH FIT).

Apart from participation in the training, the Kenya UPOPs participants had an opportunity to meet senior international experts from UNDP, WHO and the international NGO Health Care Without Harm who facilitated the ToT and link with 28 national experts from the 4 beneficiary countries of the regional GEF project (Ghana, Madagascar, Tanzania, Zambia) as well as with experts from other 3 African countries (Uganda, Mauritius and South Africa)

With the assistance of the Kenya master trainers from the ToT, personnel of the UPOPs project HCFs and control authorities at central and county levels were trained to manage HCW in an environmentally sound manner including budgeting for HCWM. All visited HCFs practice waste segregation at source and place the waste in colour-coded bins and liners for safe disposal. Knowledge acquired from the trainings was used for a general change in attitude towards HCWM across the cadres of staff in the pilot HCFs.

The project assisted with development of procedures and guidelines for the assessment and implementation of hazardous waste management at healthcare facilities. All pilot HCFs have applied Introduction-Rapid Assessment Tool (I-RAT) in undertaking a baseline. Moreover, the project supported revision of the Kenyan HCWM guidelines on the basis of the latest edition of the WHO Blue Book[17]. The revision includes tools and procedures for rapid assessment of HCWM and management rules for the proper segregation and monitoring of HCW. The new guidelines are awaiting official endorsement by the Minister of Health and are ready for dissemination in all Kenyan HCFs.

The project supported development of two specific guidelines, namely the guide on microwaves for treatment of biohazardous waste that was used for procurement of microwaves under the project, and the national standards for HCW transport vehicles. The planned activity on replacement of mercury-containing devices had to be dropped from the project as the MoH had stopped procurement of mercury devices some time ago and the negligible accumulated stockpiles within the pilot HCFs were not sufficient to justify implementation of a replacement campaign.

As a response to the COVID-19 outbreak, additional guidelines were developed for HCWM related to COVID-19 in order to build knowledge and awareness on segregation, collection, storage, treatment, and disposal of waste generated in HCFs during the COVID-19 pandemic. Also, procurement and distribution of PPEs and key functional items for the full HCWM

[16] Reducing UPOPs and Mercury Releases from the Health Sector in Africa (GEF ID: 4611)

[17] Since 1999, the WHO handbook "Safe management of waste from health-care activities" (commonly known as "the Blue Book") has been the definitive information source on how to deal with these wastes, particularly in low and middle income countries.

process from triage to disposal was timely for triggering safe response to the COVID-19 crisis by the beneficiary HCFs due to the fact that COVID-19 immensely increased the volume of HCW[18].

Staff of the pilot HCFs were trained on the BAT/BEP for HCWM, including the proper use of personal protective equipment (PPE). For the HCFs with the microwave technology, the project has made available technical assistance of national and international experts, particularly during microwave equipment supply and installation. However, these HCFs face challenges to sustainability of the microwave equipment operation due to loss of trained technicians and the fact that currently there is only one national expert backstopping the microwaves.

The project assisted the 4 participating counties to elaborate centralised HCW treatment schemes with one Central Treatment Facility (CTF) serving several smaller peripheral HCFs. However, the centralised HCW schemes were not yet operational at TE due to several challenges related to collection and transport of HCW to the CTFs. Each designated CTF have established a Health Care Waste Management Committee (HCWMC) and two of them, namely Nakuru PGH and JOOTRF have also developed their respective HCWM plans that aim at waste reduction, improved waste segregation and introduction of recycling activities.

Based on the above findings, for implementation of Component 2 the TE gives rating **Satisfactory (S).**

[18] The handover ceremony of HCWM equipment for 13 pilot HCFs across 4 counties took place on 23 April 2020 at Mbagathi District Hospital, in Nairobi.

Table 20: Status of deliverables for Outcomes 3.1 and 3.2

Indicator	Targets End of Project	Status End of Project
Output 3.1.1 Feasibility study and terms of reference for non-combustion or low-U-POPs emission technologies for healthcare waste disposal in selected hospitals or waste management facilities drafted.		
Availability of feasibility study. Availability of cost-effectiveness analysis	Cost-effectiveness and feasibility analysis of centralized treatment facilities in comparison with the current situation (one small treatment facility for each HCF) carried out. Technical specifications for HCW treatment technologies drafted and approved. Technical specification for APCS and for the upgrading of a recent double chamber incinerator to be compliant with the SC drafted and approved.	One small treatment facility at each HCF within a 5-kilometres radius was determined as not cost effective by the county public health officers, for the pilot sub-county of Naivasha (Nakuru). National specifications for a medical waste transport vehicle Installation of SC-compliant incinerator and medical vehicle for the Nakuru County Cost effectiveness analysis study for the selected HCFs completed Technical specifications for low-cost non-burn microwaves and for Stockholm Convention compliant incinerators Technical specifications for Air Pollution controls (APCs) developed and approved by the Technical Committee in the Ministry of Health Two chambers of incinerators at Mbagathi and Jaramogi Hospitals are being upgraded
Output 3.2.1 Demonstration and performance assessment of the technologies in the selected facilities completed (at least 4 facilities or an overall amount of waste in the order of 630t/yr)		
Number of non-incineration technologies that are operational. Number of incinerators reviewed and upgraded to the SC BAT/BEP requirements, and operational. Amount of U-POPs release prevented by means of implementation of better disposal practices.	Non-incineration technologies procured, installed and tested servicing at least 11 HCFs. Procurement of an initial set of HCWM related supplies for at least 12 HCFs. Staff trained in the operation and maintenance of the technologies installed at the HCFs HCFs supported in the implementation of their plans (including recycling activities) as well as monitoring practices. Agreements between CTFs and PFs drafted and signed for each PFs served by a CTF	• Microwaves provided for Likoni and Kajiado Hospitals; Port Reitz • Nakuru PPG and Mombasa HCF received microwaves from bilateral programme (co-finance – Belgian cooperation) • Standards for incinerators compliant to the SC submitted to NEMA for approval • Supported incinerator upgrade to SC compliance in Mbagathi, JOORTH and Naivasha Health care facilities • Equipment for HCWM (coloured bins, bin liners, safety boxes, trolleys, weighing scales, PPEs) supplied to 13 pilot HCFs particularly in support to the COVID-19 response • Ash pits for JOORTH provided • Model agreement for CTFs/PFs developed but not signed yet • MOH will require that agreement be signed to meet the objectives of the project • Awaiting full installation of technologies, for assessing UPOPs release prevented is done by analysis of the disposal of the waste generated at the 13 HCFs • more details on the status of BAT installation in Table 20 below
Output 3.2.2 Waste disposal activities of hospital facilities/programs are documented and their performance is evaluated to exemplify best practices in health-care waste management.		
Proof of Performance test reports available Proof of performance tests in at least three non-combustion disposal facilities and at least one revamped incinerator available. HCW hazardous waste manifests available for at least 630 t of HCW yearly	Proof of performance tests for at least three non-combustion disposal facilities and at least one revamped incinerator carried out The release of at least 19 gTEq / yr of PCDD/F prevented thanks to the installation of BAT disposal technologies.	• A dry run of performance at three facilities analyzed in the burn (incinerators) and non-burn (microwaves) • For non-combustion the calculations will be made in Port Reitz, Nakuru PPG, and Coat General Hospital which has an autoclave. • A private hospital (Nyeri Outspan), which has an efficient and cost-effective microwave, was included for comparison • Performance tests were conducted at three HCFs • Current prevented release of U-POPs of 10 TEq/yr by measures taken so far
Output 3.2.3 Useful replication toolkits on how to implement best practices and techniques are developed		
Toolkit for replication of best practices made available	A practical toolkit for the replication of CTFs or single-facility BAT/BEP in other counties is drafted and endorsed by the government. The toolkit will be properly disseminated to relevant stakeholders	Toolkit for CTFs yet to be completed, since the Naivasha sub-county model CTF is not operational

Summary assessment of Component 3:

The National HCW Guidelines were reviewed for inclusion of I-RAT and compliance with the SC and were submitted for formal endorsement by the Ministry for Health. In addition, Standard Operating Procedures (SOPs) for HCW were revised to be in line with I-RAT and a Communication Strategy for HCW was drafted. The participating HCFs were invited to validate the HCW Guidelines, SOPs and the Communication Strategy in order to ensure practicability and utilization of the various documents. Upon adoption by the MoH, the HCW Guidelines, SOPs and the Communication Strategy will be disseminated as handbooks to the HCFs across the country.

The project supported development of technical specifications for procurement of microwaves and SC-compliant incinerators that were approved by a multisectoral team composed of representatives of the national project partners. Procurement of two microwaves for the Nakuru Hospital and the Jaramogi Oginga Odinga Teaching & Referral Hospital (JOOTRH) was undertaken. The supply and installation of the microwave equipment was on-going at the time of TE.

The demonstration and performance assessment of the BAT in the selected HCFs experienced several delays due to procurement related challenges, as well as the nature of contracts after award. The current status of BAT procurement is summarised in Table 20 below.

Table 21: Summary of procurement of BAT for HCWM in the participating HCFs

Planned Intervention	**Status as at TE**
Procurement of microwave at Likoni Sub-county hospital in Mombasa and the Kajiado County Referral Hospital	New microwave under installation
Construction of Ash pits at Likoni, Jaramogi Oginga Odinga Teaching and Referral Hospital (JOORTH), and Naivasha Sub-county Hospital	Completed at Naivasha Not completed at Likoni and JOOTRH
Upgrade of the incinerators at JOORTH and Mbagathi Hospital in Nairobi with air pollution control equipment (APC)	Incinerators retrofitted with APC (wet scrubbers). Commissioned at Mbagathi but has technical challenges. Not commissioned at JOOTRH yet as incinerator was not functional as at time of the TE
Procurement of Stockholm compliant incinerator for Naivasha Subcounty Hospital Construction of ash pits	Awaiting contractor to supply equipment as per the specifications. Initial equipment supply was rejected as it did not meet the specifications Ash pits ot completed but in progress
Supply of 4 state of the art HCW transport vehicles to, Nakuru and Nairobi counties	Downscaled to one vehicle. Procurement completed, awaiting handover to the Nakuru County. One vehicle procured for the Nairobi County on co-financing
Supply of commodities to the 13 target hospitals (colour coded bins and liners, scales, PPEs)	
Nairobi County: Mbagathi Sub- County Hospital, Mama Lucy Kibaki County Referral Hospital, and Mathari Mental Hospital,	Completed and in use
Nakuru County: Naivasha Sub- County Hospital and Nakuru Provincial General Hospital	Completed and in use
Kisumu County: Kisumu County Hospital, Kombewa County Hospital, New Nyanza Teaching Hospita, and Ahero Sub-district Hospital	Completed and in use
Mombasa County: Mombasa Coast Hospital, Port Reitz Hospital, Likoni Health Centre and Mlaleo Hospital	Completed and in use

This component attracted co-financing from other actors. The grant from the Belgian Government[19] financed provision of AMB Ecosteryl systems with integrated microwaves and shredders to 4 HCFs. At the time of TE, the equipment was functional at the Nakuru Provincial General Hospital, Kisumu County Referral Hospital, while the installation at the Port Reitz District Hospital in Mombasa faced technical problems.

Médecins Sans Frontières (MSF) supports provision of an incinerator to the Likoni Sub-county Hospital. The process was not completed at the time of the TE.

Final assessment at project end of the HCF performance is yet to be undertaken due to the delays and various technical hitches in operationalising the BATs. This has delayed calculation of the U-POPs emissions reduction at the beneficiary HCFs.

However, no conclusion has been made on the final disposal of the treated HCW, in particular the waste after microwave sterilisation. The disposal approaches differ between the individual HCFs. For example, the treated HCW at JOORTH is put into storage, waste from the Nakuru Hospital is buried at the Gioto dumpsite, while waste from the Coast General Hospital in Mombasa is disposed along with other municipal waste.

The project team explored the possibility to use the treated HCW as a fuel in the Bamburi Cement Factory in Mombasa. Unfortunately, this effort was not successful as the relatively small quantities of HCW would not justify necessary technology and logistical adjustments to be made at the factory level.

In 2021, NEMA conducted revision of the 2006 Waste Regulations and adopted SC guidelines on emissions from incinerators and the technical specifications for incinerators. Development of similar guidelines for microwaves was still in progress at the end of the project implementation (with input from several HCFs that already use or will be using the microwave sterilisation technology). For autoclave sterilisation, no guidelines were developed as Kenyan HCFs do not prefer this option for the time being for the reason of high operating and maintenance costs.

Based on the above findings, the implementation of Component 3 is rated **Moderately Satisfactory (MS).**

[19] The Medical Waste Microwave Equipment project financed by the Government of Belgium includes hospitals at Nakuru, Machakos, Mombasa, Embu, Kisii, Kisumu, Kakamega, Moi Teaching and Referral Hospital, Nyeri and the Kenyatta National Hospital.

Table 22: Status of deliverables for Outcome 4.1

Indicator	Targets End of Project	Status End of Project
Output 4.1.1 Awareness raising activities for the communities and the municipalities aimed at enhancing 3Rs of waste		
Level of awareness on 3Rs of different stakeholders as from interviews and questionnaires significantly raised	Awareness raising materials (printed or broadcasted) on 3Rs of materials which, if wasted, can generate U-POPs and toxic substances, developed and published for the 3 municipalities of Mombasa, Kisumu and Nakuru. At least 3 awareness raising workshops on 3Rs dedicated to the representatives of environmental authorities performed. At least 3 awareness raising event for the public at large in the 3 regions of Mombasa, Nakuru and Kisumu carried out	• Training workshops conducted for CBOs 400 participants over the four years • 12 workshops promoting awareness on the prevention of open burning practices conducted • One Material Recovery Facility (MAREFA) established in each of the four counties by the local county governments to support the CBOs on 3Rs • About 3 awareness workshops held at each of the Mombasa, Nakuru and Kisumu counties
Output 4.1.2 Regulatory framework for the recovery of waste materials (glass, organic, plastic) and for licensing of the recovery activity at county and central levels improved to integrate SC requirements		
Availability of improved regulatory framework which includes rules for 3Rs and preventing U-POPs emissions through cessation of open burning Waste guidelines include SC provisions Prioritisation of plastic waste	Waste management regulation and its enforcement improved to facilitate the reduce, recycle and recovery approach with special reference to waste which may generate toxic substances when burnt. Special provisions facilitating communities to perform upstream collection of recyclable waste and prevent unsafe dumping	• Sustainable Waste Regulations and Sustainable Waste Policy developed at national level • Waste Regulation Bills and Waste Policies in 4 counties developed • Improved regulatory framework provided for additional confidence in the 3Rs, which from the public awareness created by the project, could only be viable if the requisite regulatory and economic instruments are in place • Sustainable Waste Policy 2018 and the Sustainable Waste Bill 2018 recognize the roles of communities in 3Rs and their potential to stop open burning • Nakuru and Mombasa counties have started engaging waste management actors • Over 6 workshops for CBOs on plastic recycling conducted • Communities in the four counties provided with 4 shredders, 4 balers and bins, operated at the Material Recovery Facilities (MAREFA)
Output 4.1.3. Counties provided with training manuals, and technical assistance for the management of solid wastes		
Availability of training manuals tailored for counties. Number of staff from counties who received technical assistance	At least 6 field training initiatives for communities and 3 training-for-trainer initiatives for municipalities in Mombasa, Kisumu and Nakuru, aimed at enhancing 3Rs of specific waste streams waste on the basis of the 3R approach performed. At least 50 people trained for each training initiative	• Training used materials from Stockholm/Basel conventions' training pack, the BAT and BEP guidelines on open burning and BAT and BEP guidelines on incineration, domesticated to the local situation/capacity needs • 2 Train-the-Trainers sessions on the risks of open burning • Each county had about 20 TOTs on income generation from waste (for 150 community waste actors) • 488 people trained on 3Rs (100 from national government, 300 from communities 188 from the counties) • Balers and shredders provided to 5 CBOs in each county or approximately 20 groups total

Table 23: Status of deliverables for Outcome 4.2

Indicator	Targets End of Project	Status End of Project
Output 4.2.2. Initiatives for reducing, reuse and recycle of waste and for composting, collection of compostable municipal waste for communities in three counties of Nairobi, Mombasa and Nakuru implemented with a PPP approach and supervised with the support of NGOs		
Number of initiatives identified, properly designed and implemented on 3Rs. Waste accounting system in place. Amount of organic compostable waste collected at the source (not at the landfill) and processed for recycling. Amount of U-POPs releases prevented due to recycling activities and open burning avoidance	At least one initiative aimed at collecting and recycling organic or compostable waste which, if burned, would generate U-POPs is identified, designed and implemented for each of the three sites. At least 500 tons of compostable material successfully collected from the source (not on the dumpsites) and re-used or re-cycled (waste to energy being not considered as suitable recycling activity), documented by a proper waste accounting system in place. The recycling activity is organized at industrial scale with the support of industrial partner(s).	• Key initiatives identified are for paper, plastics and organic materials • Training module on composting developed • Clearances from standards agency that is requirement for market placement of waste yet to be obtained • Stakeholder consultation, the training needs assessment and the training module completed • Assistance to CBOs currently developing compost from waste in the Nakuru and Nairobi counties • Compostable organic matter production by the main cities and municipality in the four target counties: Nairobi City 1,800 tons; Mombasa City 330 tons; Kisumu City 200 tons and Nakuru Municipality 140 tons • Samples from selected CBOs analysed by the Kenya Bureau of Standards
Output 4.2.3. Local initiative for the re-use / recycling of other non-hazardous waste streams (i.e. plastics).		
Number of initiatives identified, properly designed and implemented on 3Rs of plastic waste. Waste accounting system for recycled plastic in place Amount of plastic collected at the source (not at the landfill) and processed for recycling. Amount of U-POPs releases prevented due to recycling activities and open burning avoidance	At least one initiative aimed at collecting and recycling plastic waste which, if burned, would generate U-POPs is identified, designed and implemented for each of the three sites. At least 30 tons/month of plastic successfully collected from the source (not on the dumpsites) and re-used or re-cycled, documented by a proper waste accounting system in place. Domestic industrial stakeholders involved for facilitating the placing on the market of recovered plastic at industrial scale.	• 2 initiatives in Mombasa, 1 initiative in Nairobi, 2 initiatives in Nakuru and 1 initiative in Kisumu. • Initiative with major potential is the Mombasa Modern Soap Company Limited, that was identified to buy plastic from the trained CBOs in Mombasa. The agreement is yet to be signed • Shredders, balers and bins distributed, • Construction of 4 MAREFAs, one in each county • Comprehensive documentation of project collection of plastic at source for recycling • Counties use NEMA waste accounting system for disposal in dumping sites as provided under the 2006 Waste Regulation • CBOs collecting compostable matter at the MAREFA but not documented • Waste from CBOs taken to recyclers who keep data (in ledger books) intermittently (to be enforced by the counties under the Sustainable Solid Waste Management Bill) • Transportation of waste provided by the 4 counties • 2 tons of compost per cycle produced by the Waste to Best CBO in Naivasha

Table 24: Status of deliverables for Outcome 4.3

Indicator	Targets End of Project	Status End of Project
Output 4.3.1 Prioritization of open-burning landfills to be closed and cleaned up, emergency plans including social and resettlement issues and cleanup plans for at least 3 landfills drafted		
Prioritisation of dumpsites in Kenya established. Emergency plans for limiting the release of U-POPs and other toxic chemicals from dumpsite are available for at least 3 dumpsites. Clean-up plans for 1 landfill are available	Dumpsites in the main Kenyan cities prioritised for intervention and emergency countermeasures based on health risk assessment, ecosystem risk assessment and socio-economic and criteria. Emergency plan for three priority dumpsites, aimed at reducing release of U-POPs and other toxic chemicals, and at reducing exposure to POPs of the population, drafted. At least one remediation plan for a priority dumpsite, based on the economy of waste recycling, drafted with the involvement of dumpsite communities	A study on awareness on ESM of solid waste by communities and municipalities in Kenya (2017) Reports on mapping and inventory of major dumpsites in the 4 counties (2019- 2020) Reports on re-mapping of dumpsites in the Kisumu, Nakuru and Mombasa counties (2021) Priority dumpsites identified (Dandora/Nairobi, Gioto/Nakuru, Kachok/Kisumu, Mwakirunge/Mombasa) Gioto in Nakuru – Improved by compressing and putting soil over the waste. There is less smoke and almost no fires currently. Kachok in Kisumu - relocated but with the closure of small dumpsites (transfer stations) the waste volumes are on the increase. Mwakirunge in Mombasa - prioritized but no additional interventions planned since the dumpsite is not licensed by NEMA. Dandora - prioritized but it has so many initiatives under the Nairobi Metropolitan that the project carried out only a few Emergency plans to minimize open burning of waste drafted for Gioto and Dandora Plans for Gioto and Mwakirunge dumpsites in place and being implemented (only Gioto site successly implemented it) Preparation works of the cleanup (remediation) plan for a landfill in Gioto ongoing 2 sites in Mombasa identified and cleaned up Support on development of remediation ongoing, to be implemented by the Limuru sub-county
Output 4.3.2. Emergency measures for reducing release of contaminants in the environment and the exposure of the population implemented in one high priority site		
Number of people who benefit from reduction of exposure to chemicals released by the dumpsite. Amount of the release reduction of U-POPs and other chemicals from implementation of emergency measures	The exposure of at least 5,000 people to chemicals released from dumpsites is halved, thanks to the adoption of emergency measures. The release of at least 20 gTEq/yr of PCDD/F avoided by means of emergency measures directly aimed at preventing open burning of waste. The release of at least 3 gTEq/yr of PCDD/F avoided by means of activities implemented under output 4.2.3. aimed at preventing recyclable waste to enter dumpsites burning of waste	No documentation of the people impacted, except for Dandora site - estimated around 4,000 people No data available due to delay in BAT installation

Summary assessment of Component 4:

Following the awareness raising meetings in 2017-18, the project provided assistance for development of key national documents, namely the National Sustainable Waste Management Policy and the Sustainable Waste Management Bill. These documents recognize the roles of local communities in waste recovery and recycling and provide a legislative framework for application of the BAT/BEP guidelines under Article 5 of the SC on open burning of solid waste[20]. The national regulations and SC provide the missing link to commercialize and divert solid waste going to dumpsites.

The awareness raising activities targeted 50-100 participants from the community-based organizations (CBOs) in each participating county. Over the entire implementation period, the project reached about 400 participants from local CBOs. A majority (almost 90%) indicated new exposure to the message of the impacts of improper waste management to the environment.

In order to engage the local CBOs in waste recovery and recycling, the project procured commodities (bailers and shredders) for establishment of material recovery facilities (MAREFAs) to the 4 county governments. The COVID-19 restrictions to travel and group meetings posed challenges to implementation plans at the supported sites. Due to limited opportunities for monitoring and support visits, the project team was not able to sufficiently engage with the CBOs and monitor their performance. Consequently, none of the MAREFAs have been operationalised by the project end and the procured equipment was only awaiting handover to the beneficiaries. It is expected that the MAREFAs will operate on a business model whereby materials shall be bailed and shredded at an agreed cost to ensure sustainability of the operations. Interviews with some of the target beneficiaries indicated that members are willing to pay for the services, and the profits from the operations shall be shared with the membership or used to expand the operations.

A Study: Awareness on Environmentally Sound Solid Waste Management by Communities and Municipalities in Kenya, conducted in 2017, called for review of county specific legislations and regulations in order to ban open burning of waste as there was no specific reference to open burning in the waste management and air quality regulations and in the Public Health Act. It also made several specific recommendations for the four participating counties. As a follow-up to the study, each of the four counties developed a County Waste Management Bill and the Nakuru County has already enacted the bill as law.

Two rounds of mapping and inventory of major dumpsites in the 4 counties were conducted under the project. The reports from the first round in 2019 summarised the status of the visited dumpsites and identified main challenges for their management and served as a basis for prioritisation of the dumpsites. In 2021, a re-mapping of the dumpsites in the Nakuru, Kisumu and Mombasa counties was conducted with the aim to check the progress made by the counties towards sound MSWM.

[20] Guidelines on BAT and Provisional Guidance on BEP Best Environmental Practices Relevant to Article 5 and Annex C of the Stockholm Convention on POPs

Training used materials from Stockholm/Basel conventions' training pack, the BAT and BEP guidelines on open burning and BAT and BEP guideline on incineration, domesticated to the local situation/capacity needs.

Two train-the-trainers sessions were conducted on the risks of open burning of municipal solid waste. Training materials were developed by experts from relevant GoK agencies. In addition, each county had about 20 train-the-trainers sessions on income generation from waste so in total 150 community waste actors were trained under this part of the project. Also, a total of 6 workshops for CBOs were held on plastic recycling and one community in each of the four counties provided with 4 shredders, 4 balers and bins.

Moreover, NEMA and County Directors responsible for waste management identified 2 CBOs in each county. The 8 CBOs received permission to operate within the respective counties in the MAREFAs. Unfortunately, the project team was not able to monitor the CBOs' performance due to Covid-19 restrictions on travel and group meetings.

The initiatives of plastic waste recycling and utilizing organic waste received positive initial response but did not yet fully take off. At the TE stage, the Gioto site in the Nakuru County showed some progress and the Kisumu County reported partnering with a private entity for utilisation of organic waste to generate biogas. Partnerships between CBOs and private sector entities were supported in the other two counties (Modern Soap Factory in Mombasa and Sanergy in Nairobi).

Despite the project support, management of open burning in municipal dumpsites remains a key challenge. The dumpsites in Kisumu and Mombasa are not yet official as plans to come up with permanent solutions are ongoing. In particular, there is a need for urgent intervention at the Mombasa Mwakirunge dumpsite as recently the NEMA has issued a notice to the Mombasa County for poor waste management practices and open burning out of control.

Based on the above findings, the implementation of Component 4 is rated **Moderately Satisfactory (MS).**

Component 5 of the project is related to Monitoring and Evaluation hence it is discussed in the relevant section on M&E above.

Table 25: Status of deliverables for the Project Objective

Project Objective: Reduction of the releases of U-POPs and other substances of concern and of the related health risk through the implementation of ESM of municipal and healthcare waste and of an integrated institutional and regulatory framework covering management and reporting of POPs.		
Indicator	**Targets End of Project**	**Status End of Project**
Existence of a SC compliant institutional and regulatory framework covering management and reporting of POPs. Amount of U-POPs releases in the environment from HCW disposal avoided. Amount of U-POPs release in the environment from municipal waste disposal avoided.	Guidelines for relevant institutions on how to streamline chemicals management into their policies, strategies and action plans Updated pieces of relevant legislation Review of the HCWM guidelines Selection of health care facilities that can be used to demonstrate environmentally sound management of HCW At least 50% of HCW is disposed in ESM 30% of Municipal waste recycled through recycle, reuse and recovery methods	Guidelines developed Legislation gap analysis completed and National Sustainable Waste Policy and SWM Bill drafted National HCWM guidelines revised 13 HCFs supplied with equipment and tools for HCWM Insufficient availability of data

The achievement of the Project Objective is rated **Moderately Satisfactory.**

Relevance

The questions discussed under this section are to what extent is the project linked to Kenya's national development priorities, its international commitments under the relevant MEAs, the relevant GEF Operational Programme, the strategic priorities of UNDP in the country and the UN Sustainable Development Goals.

Firstly, the UPOPs project is aligned with the Kenya's Vision 2030 that highlights the importance of proper solid waste management and identifies the Mombasa city among priority municipalities for development of solid waste management systems. It also aligns with the Environmental Management and Coordination Act (EMCA, 1999), that in Section 86 calls for regulations on handling, storage, transportation, segregation and destruction of any waste.

Kenya ratified the Stockholm Convention in September 2004 and developed its National Implementation Plan (NIP) in 2007. Subsequently, Kenya completed the process of updating the NIP in line with Article 7 of the Convention. Thus, the country developed and amended the priority policy and regulatory reforms as well as capacity building needs and required investment programs for POPs. In addition to the SC, Kenya has ratified a number of other chemicals related MEAs. Therefore, the project is in line with the commitment to improve Kenya's compliance with the SC on POPs, particularly with regard to dioxins and furans.

The UPOPs project is also well aligned with the Kenya National Chemicals Profile (KNCP, 2010), which identified a number of risks for human health and the environment in Kenya and identified priorities for sound chemicals management. The highest were air pollution, improper management of hazardous waste and storage of obsolete pesticides. Moreover, the project is in line with the Health Care Waste Management plan, developed by the GoK in 2008-2012 in cooperation with the WHO, that outlines the HCWM status in the counties, defines priorities and objectives while emphasizing the importance of HCWM as an integral part of hospital hygiene and infection control.

The SAICM Implementation Plan for Kenya (2011-2014) has the goal of reducing the identified risks to human health and the environment due to exposure to chemicals. The plan lists specific priority risks and hazardous activities. It provides a framework with themes and actions that Kenya needs to implement to address risks posed by chemicals. The plan proposes to strengthen national mechanisms such as policies, legislations, commissions, education programmes, information networks, etc. to facilitate the implementation of specific chemicals management activities at the national, county and enterprise levels.

The project has a direct link to the following objectives of the GEF-5 Chemicals Strategy:

Objective 1: Phase out POPs and reduce POPs releases

Outcome 1.3. POPs releases to the environment reduced

Outcome 1.5 Country capacity built to effectively phase out and reduce releases of POPs

Following NIP priorities, investments supported by the GEF will address implementation of best available techniques and best environmental practices (BAT/BEP) for release reduction of unintentionally produced POPs, including from industrial sources and open burning

Objective 3: Pilot sound chemicals management and mercury reduction

Outcome 3.1 Country capacity built to effectively manage mercury in priority sectors

Outcome 3.2 Contribute to the overall objective of the SAICM of achieving the sound management of chemicals throughout their life-cycle in ways that lead to the minimization of significant adverse effects on human health and the environment

The project is also in line with the Libreville Declaration on Health and Environment in Africa (2008), namely with the following commitments of the signatory parties:

……

2. Developing or updating our national, sub-regional and regional frameworks in order to address more effectively the issue of environmental impacts on health, through integration of these links in policies, strategies, regulations and national development plans; and

……

7. Effectively implementing national, sub-regional and regional mechanisms for enforcing compliance with international conventions and national regulations to protect populations from health threats related to the environment;

The project is linked to a number of SDGs, namely SDG #3: Good health and well-being; SDG #5: Gender equality; SDG #8: Decent work and economic growth; SDG #9: Industry, innovation and infrastructure; and SDG #12: Responsible consumption and production.

It was also directly linked to UNDP global Strategic Plan Output 1.3. "Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and wastes." Since 2004, UNDP has been assisting more than 80 developing countries and countries with economies in transition in their efforts to sustainably manage the use, disposal, and destruction of POPs, working with private sector partners and NGOs.

In relation to the UNDP Kenya Country Programme Document (CPD) for 2014-2018, the project is in line with the CPD Output 3.1:

3.1 GoK has adequate capacity to develop evidence-based and coherent policy responses to the inter-linked challenges of environmental sustainability, land and natural resource management and human security

Based on the above, relevance of the project is rated **Relevant (R)** for the recipient country, as well as the donor and implementing agencies.

Effectiveness

Given the project's relevance discussed above, the UPOPs project contributed to national development priorities, the UNDP CPD for Kenya, UNDP Strategic Plan, UN SDGs, as well as to the GEF strategic priorities.

The extent to which the project contributed to the achieving or not achieving its intended outcomes and outputs is discussed in the previous section on 'Progress towards objective and expected outcomes'.

The TE concludes that the project's greatest achievement was under Component 1 due to strong commitment to management of chemicals by the involved agencies of the GoK and their ownership of the project. Achievement under Component 2 on institutional capacity building for HCWM was also notable due to active participation of the selected HCFs in the capacity building activities and their allegiance to the principles of environmentally sound HCWM.

Lesser implementation effectiveness under Component 3 originated from various procurement-related challenges that resulted in long delays in supply and installation of BAT at selected HCFs. Lack of experience with planning and execution of the approach of centralised HCW treatment was another factor influencing effectiveness and could have been addressed by recruiting international expertise in line with the recommendation of the UNDP RTA.

Component 4 on municipal solid waste management (MSWM) had the lowest achievement. The main underlying factor of lower effectiveness was the institutional complexity of MSWM as the latter typically depends on different sets of actors, including agencies of the central and county governments, private sector, and CBOs. The view of waste as a resource for recycling and reuse rather than as a nuisance for disposal brings new players (e.g. recycling, composting and energy actors) in the area previously occupied exclusively by state/county authorities and informal waste collection actors. In this situation, the existing level of coordination in the MSWM sector proved to be insufficient.

Other constraining factors to effectiveness, such as socio-economic, financial, institutional, and environmental risks are outlined in the Sustainability section below.

The overall effectiveness of the project is rated **Moderately Satisfactory (MS).**

Efficiency

The main points of discussion in this section are the allocation of financial and non-financial resources (GEF funds, expertise, time, etc.) and use of the resources for achievement of the results.

The total GEF funds allocation for the project is considered moderate given the fact that the project addresses three separate but interlinked areas. The HCWM part (Components 2 and 3) received the highest funds allocation (about 58.7% of the total GEF grant), followed by MSWM (Component 4 - 22.1%) and SAICM (Component 1 - 11.1%). The high funds allocation to the HCWM part of the project reflects the planned procurement of equipment for demonstration of BAT for HCW treatment and disposal. The funds allocation for M&E and project management, 3.3% and 4.8%, respectively, is considered reasonable for the project of this size and complexity.

Overall, the resource allocation to individual project components was found reasonable and balanced. The evaluators did not find any serious inefficiencies in the use of the allocated funds and therefore consider the use of the project funds cost-effective.

The analysis of project expenditures under 'Finance and co-finance' showed that the total project expenditures at the time of the TE reached 86.72% of the GEF grant. The 5.35-months extension of the project was justified by the slow start of the project and COVID-19 impact. Notwithstanding the extension, some of the planned results were not achieved by the time of the TE, particularly under Components 3 and 4.

The combined expenditures for M&E and project management reached only 69% of the GEF grant. However, a sizeable contribution from UNDP co-financing was used on project management. There were some savings on project personnel due to slow recruitment of the PMU staff at the beginning and departure of the Project Manager one year before the end of the project. While the fact that no PM was recruited for the last year of the project and the PM duties were assigned to the Technical Advisor suggests possible efficiency boost, cost-effectiveness of this arrangement is debatable. Without doubt it increased the TA's workload as on top of his primary technical tasks the latter had to perform also all administrative tasks of the PM. Nevertheless, impact of the PMU temporary understaffing on the overall project efficiency was only marginal in comparison with the negative effect of the protracted difficulties and related delays in the accessibility of the project funds due to unresolved challenges of the project funds channeling through the National Treasury.

The evaluators consider allocation and use of resources under Component 4, namely those for establishment of the MAREFAs cost-effective as such activities were directed towards addressing the needs of community groups and marginalized population. However, as due to the reasons discussed above the planned targets were not achieved, the project did not achieve the expected efficiency.

Based on the above, efficiency of the project implementation is rated **Moderately Satisfactory (MS).**

Overall project outcome

The calculation of the overall project outcome rating is based on the ratings for relevance, effectiveness and efficiency, of which relevance and effectiveness are critical. The ratings are summarized in Table 26 below.

Table 26: TE ratings for the overall project outcome

Assessment of outcomes	**TE rating**
Relevance	Relevant (R)
Effectiveness	Moderately Satisfactory (MS)
Efficiency	Moderately Satisfactory (MS)
Overall project outcome	Moderately Satisfactory (MS)

Sustainability

Financial sustainability:

The project was developed on the assumption that the GEF grant of US$ 4,515,000 will be matched with co-financing from various project stakeholders. As discussed in the section 'Financing and co-financing', the actual realised co-financing was lower than expected. In particular, the co-financing contributions from the private sector and NGOs/CBOs were not

provided. This shows that the project relied entirely on co-financing from the GoK and bilateral partners and did not attract enough interest from other stakeholder groups. A positive aspect of the project is that it has raised awareness of policymakers and communities on the need to address the risks posed by the chemical s, HCW and municipal waste and has also shown that one key factor in addressing this issue is the planning of financial allocations from the GoK.

Nevertheless, the project did not succeed in catalysing the income generating activities from the recycling of segregated waste and did not establish economic mechanisms to ensure the full involvement of local communities and recycling businesses for ongoing flow of benefits and financing outside the GoK budget. Therefore, the financial risk to sustainability is relatively high.

However, with the involvement of private sector through the Kenya Association of Manufacturers, several industry-led initiatives targeting waste recycling and circular economy have emerged. The KAM has gone ahead to adopt the Responsible Care Global Charter and is working with its membership to ensure that they adhered to proper management of chemicals and waste from their manufacturing operations. In promoting environmentally sustainable use and recycling of plastics, the KAM has launched several initiatives aimed at reducing waste, including the Customer Bora – Taka Banks Program in partnership with Dandora Hip Hop City (DHC) aimed at facilitating sustainable collection of waste for recycling, as well as the Kenya Plastic Action Plan providing a roadmap towards realizing a circular economy for plastic use and waste management in the country. These initiatives are slowly unlocking and mobilising resources from the private sector and industries towards sustainable waste management and reduction of UPOPs.

Socio-political sustainability:

The project helped to improve engagement with the issue of chemical waste management and has increased awareness around POPs/POPs waste both within the GoK and in the communities, which is a positive factor of social sustainability. The wide consultations conducted during the process have improved the understanding of this issue in the country. Further, the project has contributed to making the process more inclusive of the local communities and private sector businesses in the country. Also, the knowledge products delivered by the project have contributed to the improved awareness and understanding of this issue.

The institutional framework of the project was ensured through participation of the Ministry of Health and the Ministry of Environment and Forestry. The officials at the county level form an extended arm of the institutional framework for the management of the HCW and the municipal waste. This institutional framework and governance structure have been in place much before the project and no additional institutional framework has been created under the project. There are no risks to institutional framework and governance risks to the sustainability of the results of the project.

The empowerment of local communities through awareness raising and supporting 3R economy with income generating activities is an important element of behavioural change. The

project has created a supportive enabling environment that can ensure a wide support base for more active involvement of stakeholders.

Institutional framework and governance sustainability:

The institutional and policy frameworks for chemicals, HCW and municipal waste management have been improved with the assistance of the project. The amended frameworks provide an enabling environment for sound chemicals management that will provide solid grounds for enforcement of waste management regulations, financings of waste management interventions as well as improved monitoring, accountability and reporting through the PRTR. Once enacted, the laws such as Extended Producer Responsibility (EPR) Regulations and the Sustainable Solid Waste Management Act will enable mainstreaming of waste management in different areas and sectors.

Also, capacities of representatives of various stakeholders at the central and county levels have been improved through trainings and awareness-raising events. Recent creation of a Chemicals Unit at the MENR will ensure the continued focus on sound chemicals management and its mainstreaming in relevant national policies. These interventions will ensure continuity of the project benefits. The project equally managed to initiate changes in the university training curricula so as to improve technical skills on matters of chemicals management and to ensure continued production of qualified and skilled professionals for that sector.

This suggests that the institutional and human resources, improved during the project implementation, will be available in the immediate future, hence the risk to institutional and governance sustainability tends to be low. However, this assumption is valid only if various stakeholders can retain the current human resources. Relatively high risk exists due to continued lack of trained technicians for operation and maintenance of the microwave technology at the level of HCFs. Also, the legislative process for official approval and endorsement of the laws and legislations could constitute a moderate risk to project sustainability.

Environmental sustainability:

While the project has made some contribution towards reduction of the environmental risk from disposal of HCW, the main environmental risk at the completion of the project is the release of POPs from the municipal waste landfill sites that could have health impacts on the local community. Although the level of knowledge and awareness on waste management in the country has improved thanks to the project, the environmental risk will persist if activities on the installation of BAT at HCFs and on landfill waste management are not continued.

Table 27: Summary assessment of sustainability

Sustainability aspect	TE rating
Financial resources	Moderately Likely (ML)
Socio-political	Likely (L)
Institutional framework and governance	Likely (L)
Environmental	Likely (L)
Overall Likelihood of Sustainability	Moderately Likely (ML)

Country ownership

In order to examine the country ownership, GEF evaluations are required to find evidence that the project fits within stated sector development priorities, and also that outputs, such as new environmental laws, have been developed with involvement from the governmental officials and have been adopted into national strategies, policies and legal codes.

The project was designed upon extensive consultations with an array of public stakeholders, including extensive inputs from the key agencies of the GoK. A high level of country ownership of the project was one of the key assumptions made during the project design phase. The extensive stakeholder consultations at the project preparatory phase resulted in high ownership by the various GoK stakeholders.

Strong ownership by the GoK stakeholders was sustained throughout the project implementation and proved to be one of the critical drivers of progress towards the planned results under the institutional framework development and capacity building components. The ownership was demonstrated by active participation and engagement of relevant public institutions and by the strong role of the Project Steering Committee for operational oversight to the project. It can be therefore concluded that the strong project ownership resulted not only from the significant relevance of the project to the national priorities, but also from the proactive interest the GoK stakeholders have taken in the project.

Gender equality and women's empowerment

The UPOPs project was developed under GEF-5 that did not have the gender mainstreaming as a mandatory requirement. The project thus received Gender Marker 1 - Activities that will contribute in some way to gender equality, but not significantly.

The draft Kenya Chemicals Policy developed under this project recommends as a policy statement that the GoK develops a wide range of training opportunities and modules in the field of environment for different levels taking into account gender equity, emerging chemical issues and devolved institutions.

Women represent a large portion of workers employed in healthcare services. This automatically places women as important stakeholders for the project. Additionally, in the model HCFs the project encouraged emergence of 'champions' of better HCWM practices. Experience from the Global Medical Waste project demonstrates that this values-based effort can reinforce women empowerment within the HCF staff and administration.

The indicators for monitoring progress to the planned results are not gender sensitive. Consequently, the project M&E plan does not have provisions for gender specific monitoring. However, the project did make basic efforts to include gender perspectives.

The project emphasized on building awareness of the links between waste management and public health (including occupational exposures), regarding the health implications of exposure to dioxins for vulnerable populations, such as pregnant women and children.

A gender analysis was planned towards the end of the project as proposed in the 2019 and 2020 PIRs. A request for gender expert was advertised and closed in April 2020 as no bids were received. Given the COVID-19 pandemic restrictions, there was no re-advertisement.

In September 2018, the project supported the Mombasa County to organise a workshop on women's dialogue for harnessing grassroots potential for SWM. The workshop was tailored as a debate platform on innovative strategies and patterns in the first line of SWM at the household level. Moreover, the dialogue aimed at positioning of Mombasa County women as environmental change agents and leveraging their personal strengths and experiences for a deeper and wider impact.

In September 2021, the project organised a gender mainstreaming workshop with the aim to improve understanding of gender-related issues in chemicals and waste management. The workshop outputs included proposal for indicators for monitoring of gender mainstreaming and commitment to produce a Gender Mainstreaming Report. Although the gender analysis was suggested to be undertaken as part of the MTR, it was actually undertaken at the closure of the project and therefore could not produce any impact on the project implementation.

Nevertheless, there is a room for improvement towards a stronger monitoring and reporting framework for the gender dimension for future projects.

Environmental and Social Safeguards

At the formulation stage, the project was subject to the mandatory environmental and social screening procedure (ESSP). The results of the ESSP are summarized in Annex VI of the Project Document. The ESSP identified 3 potential social and environmental risks, rated them in terms of probability and impact. The rating of impact was moderate to low. Monitoring of the environmental and social risks during the project was part of the general monitoring of risks to project implementation. Generally, the bulk of the project interventions were low risks and raised very few concerns, with the exception of the proposal for location of a central incinerator within the University of Nairobi, that raised issues of land use compatibility and ultimately led to shelving of the idea. The PIRs did not capture any environmental and social related grievances.

Cross-cutting issues

At the time of the UPOPs project preparation, the cross-cutting issues were not central to the formulation of GEF projects. Therefore, the cross-cutting issues were not incorporated into the design and implementation of the project.

The UPOPs project design comprises only indirectly some cross-cutting dimensions in terms of producing local environmental and health benefits in terms of reduced exposure to UPOPs emissions, as well as improvement of living standards and improvement of local economies through use of segregated parts of the waste streams.

Nevertheless, the impact on human rights, poverty and marginal communities could have received greater attention during the design and implementation of the project.

GEF additionality

The traditional concept of additionality in the GEF projects is based on the incremental cost approach to ensure that GEF funds do not substitute for existing development finance but provide additional resources to produce global environmental benefits. This concept presents the additionality as a narrow focus on specific environmental benefits from the GEF funding

but does not recognize other objectives that support the achievement of the global environmental benefits over a longer term.

The special environmental benefits from this project are examined under the assessment of the Project Objective and the environmental sustainability. In line with recent developments of evaluation methodology of GEF projects, the GEF additionality is examined in terms of changes in the attainment of direct project outcomes at project completion that can be attributed to GEF's interventions[21].

The project provided a legal/regulatory additionality through its support for development of legal and regulatory frameworks and their accelerated adoption into practice. Institutional additionality was provided through capacity building of various project stakeholders and technical assistance to the relevant entities of the GoK and academia.

Catalytic/Replication effect

On the side of HCWM, the replication plan was largely based on practices and technologies, which have been proved successful in many other countries and projects, and officially adopted and standardized by WHO in its "Blue book". Technologies, including non-combustion treatment and safe incineration, are largely commercially available technologies, which are available and replicated worldwide.

For sharing experience from the project, the project partners participated in several for a, including annual events of the Health and Environment Research Institute, World Environment days, the Sustainable Blue Economy Conference and number of inter-ministerial and intersectoral meetings that deal with chemicals and waste. Information and communication materials on chemicals, HCW and MSW were put on display and distributed at the above events.

Furthermore, the project used several communication channels including Youtube, Facebook and national printed media to raise awareness about sustainable HCWM and municipal solid waste management.

The replicability was also high also for the municipal waste sector. The "circular economy", with specific reference to plastic and organic waste recycling, is a common concept worldwide and successful and profitable initiatives are common. As the main hindrance to this type of activities in the country are concerns from the dumpsite communities of losing their source of income, and availability of access to the market of the recyclable materials, there was an intention to focus on the social and market approaches to ensure the success of project activities and their replication. However, due to slow progress of the MSWM component, there were no elements for replication established.

A key factor in the replication of sustainable management practices is the high level of investment needed that is beyond the financial possibilities of the county governments. The UPOPs project facilitated identification of the BAT/BEP as a guidance to the counties for preparation of contracts with investors and for monitoring the service delivery under eventual contracts.

[21] An Evaluative Approach to Assessing GEF's Additionality, GEF/ME/C.55/inf. 01

Reportedly the project has worked on preparation of an exit strategy to outline the necessary actions for enhanced sustainability of the project results. This strategy was not available at the TE.

Progress to impact

Despite delays and challenges in implementation of certain components, the project can produce impact in a medium - to long term. The progress to impact observed so far is summarized below:

Institutional and Regulatory:

- Upon official adoption of the draft polices, laws and regulations, the institutional mandates for chemicals and waste management will be strengthened;
- The amended and improved legislation will also provide for an enforcement mechanism that will further serve to ensure compliance and contribute to overall reduction of negative health and environmental impacts associated with poor chemicals and waste management;
- Increased interest by an array of actors (governments, private sector, NGOs) on sustainable chemicals and waste management is leading to extensive design of new projects and search for funding for addressing several issues of chemicals and waste management.

Health Care Waste Component

- HCWM becomes a priority across all health care facilities
- All the project HCFs (and several others outside the project) undertake waste segregation at source
- The HCFs have IPC's/HCWM committees in place
- There is generally improved budgetary allocation towards HCWM
- There is an increased number of actors willing to support HCFs in HCWM

Municipal Waste Component

- County governments are putting in place legislation on sustainable waste management with key aspects including prohibition of open burning of waste, and promotion of a circular economy approach to waste management;
- There is now a firm focus of linking solid waste management to economic benefits, material conservation and job creation;
- The National Sustainable Waste Management Policy and the Sustainable Waste Bill bring a paradigm shift from mixed waste disposal at household level to sorting of waste at source, and recognition that organic and other waste recoverable streams are key elements in the realisation of sustainable waste management;
- Waste recyclers are recognized by law, and waste management is recognized as an economic activity;
- Citizens are also key stakeholders to monitor compliance and reporting illegal waste dumping;
- Based on improved knowledge on need for sustainable waste management especially for waste streams such as plastics and paper, counties have started construction of material recovery facilities and pursue several private public partnerships for waste management interventions.

Capacity Building

County environment and health departments and some universities have fully recognized the linkage between unsound chemicals management and UPOPs emissions to human health and the environment. They integrated issues of POPs and waste management in their curricula thus students are being trained for better appreciation of the need for mainstreaming sound chemicals management, in particular cessation of the open burning practice at industrial, institutional, and public facilities.

The microwave sterilisation instruments, and APC incinerator upgrades procured under the project were installed at selected beneficiary HCFs towards the very end of the project implementation period. First experience from these as well similar installations made in parallel under the bilateral assistance from Belgium indicate that the remaining barriers to long-term impact of the project are challenges related to operation of the microwave equipment and upgraded incinerators. Some installations also already suffer from high turnover of trained technicians. Therefore, if the technical training programme on operation and maintenance of the microwave equipment is not continued beyond the completion of the project, the beneficiary HCFs could experience longer temporary operation shutdowns of the equipment due to lack of funds and personnel for operation and maintenance of the installed technologies.

No major changes related to gender, such as enhanced access to and control of resources by women or their improved participation in decision-making processes, that could be attributed to the project were documented by the project team and observed by the evaluators.

The summary of ratings of the mandatory evaluation criteria is in the Table 28 below.

Table 28: Overall Project Rating

Evaluation Criteria	Evaluator's Rating
Monitoring and evaluation: design at entry	Satisfactory (S)
Monitoring and evaluation: implementation	Moderately Satisfactory (MS)
Overall quality of monitoring and evaluation	**Satisfactory (S)**
National implementation	Moderately Satisfactory (S)
UNDP Execution	Satisfactory (S)
Overall quality implementation / execution	**Moderately Satisfactory (S)**
Relevance	**Relevant (R)**
Effectiveness	**Satisfactory (S)**
Component 1	Satisfactory (S)
Component 2	Satisfactory (S)
Component 3	Moderately Satisfactory (MS)
Component 4	Moderately Satisfactory (MS)
Component 5	Satisfactory (S)
Efficiency	**Moderately Satisfactory (S)**
Overall Project Objective	**Moderately Satisfactory (MS)**
Overall likelihood of sustainability	**Moderately Likely (L)**
Institutional framework and governance	Likely (L)
Financial	Moderately Likely (ML)
Socio-political	Likely (L)
Environmental	Likely (L)

MAIN FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Main findings and conclusions

The Sound Chemicals Management Mainstreaming and UPOPs Reduction project in Kenya had the overall objective to protect human health and the environment by managing the risks posed by production, use, import and export of chemicals and reducing/preventing the release of UPOPs (Unintended Persistent Organic Pollutants) and toxic compounds originating from the unsafe management of waste in two key sectors: Health Care Waste and Municipal Waste.

Component 1: Policies, strategies regulatory and policy framework were to be integrated with provisions of streamlining chemicals management into development activities. Further, under this component of the project, creation of a conducive regulatory and policy framework, along with the training of the relevant institutions for implementation of the SC and SAICM was envisaged. The project also supported development and review of several draft policies, bills and regulations. All the draft documents are at advanced stages of enactment, but subject to political processes that are not within the control of the project. The project has managed to set ground for a multi -stakeholder, multi sectoral approach to managing issues of chemicals and waste management. The project has made major strides in strengthening health environment linkages and the working between the Ministry of health and the Ministry of Environment and Forest

Outcome 1.2 relates to intensification and strengthening of the monitoring activities for toxic chemicals and creation of PRTR database. The PRTR is in place but not yet operationalised, awaiting gazettement of the draft the draft toxic and hazardous chemicals and materials management regulations.

Components 2 and 3 of the project focused on facilitating demonstration of BEP and BAT for treatment and disposal of the HCW in the HCFs. Outcome 2.1 of focused on creation of conducive conditions (regulations and standards) for implementation of the BEP and BAT at the national level, while Outcome 2.2 focused on facilitating implementation of BEP and BAT at the selected HCFs. For component 2.1. the standards, guidelines and SoPs have been prepared and are in place. However, for outcome 2.1, there has been delays in delivery of the target technologies by the projects. The technologies received through co-financing (microwaves and shredders) are in place and operational with the exception of Mombasa. Also, the project was to upgrade the incinerators at Jaramogi Oginga Odinga and Mbagathi Hospitals to minimise the release of UPOPs. As at the time of TE, the two incinerators had been retrofitted with air pollution control equipment, but not yet commissioned since the incinerators were not functioning (maintenance staff were on site trying to address the challenges). The installation of the incinerator at Naivasha hospital, as well as the commissioning of the incinerators retrofitted with pollution control is expected to be done by early January.

The aim of Component 3 was to reduce the release of UPOPs of about 19gTEq/yr of UPOPs from the HCFs where the interventions on the ground are being supported by the project. This is against the baseline figure of release of 19.0 gTEq/ yr. from these HCFs. Thus, the project targeted 100% reduction of release of UPOPs due to treatment of HCW at the targeted HCFs. Upon full operationalisation of the technologies in late December/early January, the estimated

emission reduction will be at 15.49T gTEq / year. The project also estimates that additional reductions are expected when BAT/BEP is fully mainstreamed as routine by all workers and facilities as some HWM treatment facilities are still in process of completion.

It is to be noted that 100% reduction will take time to achieve, because some facilities are still operating non-compliant incinerators. In some cases, the treated waste is still being subjected to open burning at dumpsites. There is also a need to adopt the Nakuru model where microwaved waste is not burnt but buried and compacted in pits

Component 4 of the project is focused on reducing the release of UPOPs due to management of SW. Outcome 4.1 of Component 4 is to facilitate implementation of the measures to reduce the release of UPOPs by way of awareness creation, training, capacity building of stakeholders and regulations. The TE established that generally there is high levels of awareness on waste, UPOPs and the need to stop open burning. The counties are also enacting legislation to support the same. Outcome 4.2 of the project aimed at reduction in the release of UPOPs due to management of solid waste (SW) through the engagement of communities already involved in the informal management of SW. Under this component, the material recovery centres were to be developed enhancing the "3R" economy and enabling municipalities to establish Public Private Partnerships (PPP) schemes with the support of NGOs. As at the time of TE, the counties had received the equipment to support 3R (3 bailers, 3 shredders each, and 5 bins). The counties had identified possible groups to operate the material recovery centres. However, none of the 4 counties had commissioned this equipment due to administrative bureaucracies.

The target reduction in the release of UPOPs by these measures was estimated at 3.0 gTEq/ yr. The project estimates that overall, it has contributed 1 g TEQ/year from improved recycling supported by new regulations on waste plastics, especially the cessation of the use of carrier bags across the country, the restrictions on single use plastics and incentives for less waste going to dumpsites. The project is also supporting collection of some of the organic waste at the source of generation (markets, food outlets etc.) and its disposal by the CBOs by composting. In Kisumu, a partnership is in place with Biogas International to pilot the use of organic waste in generating energy in Dunga and Ahero. However, the scale of such activities is quite small.

All the four participating counties (Nairobi, Mombasa, Nakuru and Kisumu) developed respective County Solid Waste Management Bills with the aim to streamline generation, handling, storage, processing, transfer and transportation, and financial provisions especially financial incentives to facilitate investment in solid waste management.

- Rehabilitation of the Kibarani Dumpsite in Mombasa County into a recreational area.
- Near completed rehabilitation of the Kachok Dumpsite in Kisumu County.
- Direct stop of open burning at Gioto Dumpsite in Nakuru county. In fact, in Nakuru, there is serious competition for solid waste for the emerging circular economy initiatives.
- The Sustainable Waste Management Bill 2020 will go a long way to support 3Rs which means less waste.

Under Outcome 4.3 of the project, waste management practices (non-burn) are to be implemented at dumpsites to reduce the release of UPOPs due to burning of SW. The targeted

reduction in the release of UPOPs due to the emergency measures is 20.0 gTEq/ yr. The project had intentions of implementing emergency measures in Mwakirunge and Nakuru dumpsites. This component did not take off well due to the informal nature of the Mwakirunge dumpsite. However, in the Nakuru and Kisumu counties, open burning is being managed. About 5g TEQ/year has been reduced from open burning attributed to reduced open burning in Gioto Dumpsite in Nakuru county, and no- open burning in Kachok Dumpsite in Kisumu.

The project faced several challenges that may have affected achievement of its overall outcomes:

The project lost 6 months due to administrative challenges of project setup and start up. The project equally lost the year 2020 due to COVID 19 related lockdowns in the country thus affecting some planned project activities.

Some of the planned activities like procurement of 4 health care transport vehicles have been downscaled to one truck, The project did not manage to provide any emergency measures for reduction of release of emissions of UPOPs at the dumpsites. Most dumpsites exist informally thus legal challenges in implementing interventions exist. To this end, no achievement towards reduction in the release of UPOPs due to emergency measures is expected.

Considering the present scale of activities for collection of the waste at the source of generation and considering the fact that the inert part of the SW in the baseline case was not getting combusted at the dump sites, the targeted reduction of 3.0 gTEq/ yr. has not been achieved.

Although, the project is promoting the use of microwaves for treatment of HCW, the material after such treatment is most likely to get disposed of at the dumpsites. Only Nakuru county demonstrated that they do not burn this material as it is buried and compacted. In the other counties, the risk of the material getting ultimately burned remains high, thus contributing to the continued release of UPOPs. This matter has been prioritised by the two ministries as more and more microwaves are being installed even in facilities outside the project.

Conclusions

1. To guarantee emission reduction from HCF, there is need to strengthen the centralised treatment model based on the non-burn technology (microwave and shredders).

2. Under the assistance from the project, key legislative documents for environmentally sound management of chemicals and waste were drafted. However, the impact of the regulatory improvements will materialise only upon official promulgation of the new legislation.

3. Sustainable management of chemicals and waste can be achieved only through wide-scale participation of all users of chemicals and waste.

4. The project was instrumental in development of the PRTR for tracking generation, release and fate of various pollutants over time. Operationalisation of the PRTR will be an important tool for the GoK to identify and track major contributors to the overall pollution loads.

5. Reporting on the amounts of HCW treated by the microwave technology installed by the UPOPs project and the co-financing parallel projects is essential for convincing international donors and local private companies about effectiveness and sustainability of the microwave technology. It is also important for collection of data on measures taken to implement the provisions of the Stockholm Convention related to UPOPs.

6. Effective dissemination of awareness materials and knowledge products prepared under the UPOPs project is essential for replication and upscaling of the non-incineration technologies for HCWM in Kenya.

7. Training and re-training of health workers is an essential condition to sustainability of HCWM at the level of HCFs. However, high turnover of trained staff in the HCFs results ultimately in reduced effectiveness of the established HCWM systems.

8. Establishment of effective local capacity after-service maintenance and repair, as well as availability and affordability of spare parts are the most critical requisites for sustainability of the microwave technology for treatment of HCW.

9. Establishment of functional centralized HCW treatment schemes will increase efficiency and enhance sustainability of the installed microwave technology at the project beneficiary HCFs.

10. Composting of organic part of the municipal solid waste provides several global and local environmental benefits. Apart from reduction of UPOPs emissions it helps to reduce the volume of MSW disposed in dumpsites and reduces methane emissions from landfills. In addition, household and community-based composting can bring specific social and economic benefits to local communities.

11. Despite the interconnection between the HCW and solid waste components, the UPOPs project design did not pay sufficient attention to the challenge of acceptance of the sterilised HCW to municipal dumpsites. Consequently, the sterilised HCW was either subject to incineration at some HCFs or burned after placement on the dumpsites. Both practices go against the objective of the project as they do not reduce UPOPs emissions.

12. Procurement of certain goods and services under the NIM suffers from delays related to lack of experience of national institutions in procurement of special technologies and lack of access to qualified international suppliers. Delegation of procurement to a competent authority reduces delays at the project operational level and has positive effect on efficiency of implementation. UNDP is better placed to procure technologies due to their global networks and experience from previously implemented projects.

13. The project established that there were no adequate quantities of mercury containing measuring devices in the target hospital to meet the threshold for intervention. The few available had been collected and stored.

Recommendations:

No.	Recommendation	Responsible Entity	Time Frame
1	The project beneficiary HCFs in cooperation with the county governments should ensure that sterilised HCW is not subject to disposal through burning in a dumpsite. As a temporary measure it is proposed to adopt the Nakuru county model based on allocation of space in the dumpsite for dug pits for disposal and compacting of HCW. This should serve as a temporary measure until other options of disposing the microwave sterilised waste are identified and adopted.	County Governments Respective HCFs	1st Quarter of 2022
2	The GoK should carefully monitor the legislative approval process for the draft legislation on chemicals and waste management in order to minimise delays in official enactment of the legislation.	MEF Attorney general	3rd Quarter of 2022
3	The MEF, NEMA and WRA as the key stakeholders of the project should use the policy, the regulation and the training materials to ensure that nationally all chemicals' producers, importers and users mainstream sound management of chemicals and waste into their operations to ensure continuity of the project objectives. This should include budgetary provisions by the national and county governments for periodic monitoring of POPs as provided for under the mandates of relevant institutions such as NEMA WRA, GCD, and KBS	MEF, NEMA and WRA	2nd Quarter of 2022
4	The Ministry of Environment and Forestry and the NEMA should fast track operationalization of the PRTR database and dissemination of related training materials, monitoring protocols in order to support regular monitoring and availability of data on POPs:	MEF NEMA	2nd Quarter of 2022
5	Before the completion of the project, UNDP in cooperation with the Ministry of Health and Ministry of Environment and Forest should establish institutional mechanisms for a post project monitoring of performance of the technologies supported and periodic collection of information about amounts of HCW treated. The monitoring, led by the national health authorities, should start immediately upon closure of the project with monthly periodicity.	UNDP MEF	Feb 2022
6	The MEF should establish effective channels for dissemination of the awareness materials and knowledge products from the UPOPs project to relevant parties.	MEF	By end of Feb 22
7	The Ministry of Health should establish a continuous professional development course and secure resources towards continuation of training and re-training courses with HCWM modules for health workers. Moreover, the MoH should consider an incentive strategy for trained staff to keep them working in their jobs and minimise the trained staff turnover.	MoH UNICEF	3rd quarter of 2022
8	The Ministry of Health and the project model HCFs should consider establishment of national maintenance teams and/or contracting local service companies to ensure maintenance and repair of installed microwave equipment, including identification of reliable local suppliers of necessary equipment spare parts.	MoH County Governments and HCF	1st quarter of 2022
9	The Ministry of Health should consider technical assistance for operationalisation of centralised HCW treatment systems including establishment of fees for transportation of HCW from peripheral to central HCFs and tariffs for HCW treatment at the microwave central HCFs.	MoH County Governments and HCF	Fy 2022/23
10	The MEF should explore effective support for establishment of community-based composting systems and assist the waste composting communities with efforts to find users and market for the compost.	MEF Private sector	
11	UNDP should ensure that designers of future projects on HCW and solid waste management, pay necessary attention to the challenges to disposal of treated waste and consult them with the relevant national stakeholders at the project preparation phase and include in the project risk matrix together with identification of mitigation measures.	UNDP	
12	To reduce procurement related challenges, UNDP and the national Implementing Partner should consider development of a procurement matrix at project inception and assign procurement roles based on strength of parties. However, development of technical specification for procurement delegated to UNDP should be undertaken in full cooperation with the beneficiary institutions in order to respect their needs and requirements, The linkage between UPOPs emissions and contribution to non-communicable diseases was covered well in the project execution. It is important that the information and data collected be a basis for a more intensified build up to action because that was the whole objective of the project	UNDP	
13	Ministry of Health should reach out to other health facilities (public and private) that may have stock piles of mercury-containing devices to submit them for safe disposal.	MoH	1st quarter 2022

Lessons learned and good practices

It is considered as good practice to select Level 5 - county referral hospitals for demonstration of new technologies. Level 5 HCFs usually have less budgetary constraints and better trained personnel compared to lower-level hospitals. Apart from effective demonstration of technologies the level 5 HCFs could also serve effectively as training institutions for practicing HCW segregation and treatment.

Although the original project included activities on replacement scheme for mercury-containing equipment, the practical implementation of this part showed that the small numbers of collected mercury-containing equipment did not justify implementation of the 1:1 replacement. However, the mercury-containing equipment must be phased-out and disposed in line with the provisions of the Minamata Convention. In order to take advantages of economies of scale, it is a good practice to establish cooperation with the relevant government focal agency for the Minamata Convention in order to ensure disposal of mercury-containing equipment from HCFs together with other mercury-containing waste collected in the country.

The establishment of the project Technical Committee with membership of representatives from the agencies constituting the Project Steering Committee enabled the TC to focus on technical and operational issues of the project implementation, including discussion of annual project performance reports and annual workplans, and allowed the PSC to concentrate more on strategic positioning of the project in the national institutional framework and guidance for better linkages with national needs and priorities. Such division contributed to enhanced country ownership of the project.

The COVID-19 outbreak in the last 2 years of the project had negative impact across all 4 project components. The negative effect on the policy and training components manifested mainly in delayed stakeholder participation in validation of the policy/regulatory drafting process and postponement of training activities and was to some extent effectively mitigated by actions of adaptive management. The disruption of international and national supply chains that negatively affected procurement of equipment for triage and treatment of HCW was beyond the possibilities of control by the project team. The negative effect of COVID-19 restrictions caused insufficient engagement with CBOs in the counties and proved necessity of having a a local coordinator linked to the project team in the three counties outside Nairobi. While such arrangement would have been useful for closer relations with the CBOs even under normal conditions, it could have massively improved the support to CBOs and their monitoring under the pandemic restrictions when the Nairobi-based project team members were not allowed to travel to the project sites in the counties.

Annex List:

1. TE ToRs (excluding ToR annexes)

2. Evaluation Question Matrix (evaluation criteria with key questions, indicators, sources of data, and methodology)

3. List of persons interviewed

4. List of documents consulted

5. Project Results Framework (at the Project Inception)

6. Performance Rating of GEF Projects

7. Evaluation Report Outline

8. Interview Guide

9. Signed Evaluation Consultant Agreement form

10. Signed TE Report Clearance form

11. Annexed in a separate file: TE Audit Trail

12. Annexed in a separate file: Tracking Tools

13. Annexed in a separate file: Terminal Evaluation Management Response

14. Annexed in a separate file: GEF Co-financing Template

Annex 1: Evaluation Terms of Reference

https://procurement-notices.undp.org/view_file.cfm?doc_id=254229

Annex 2: Evaluation Question Matrix

Evaluative Criteria Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?			
• Does the project relate to the GEF Chemicals and Waste focal area and has it been designed to deliver global environmental benefits in line with relevant objectives of international agreements?	• The project includes the relevant GEF outcomes, outputs and indicators • The project makes explicit links with global chemicals and waste management action goals	• Project Document • GEF 5 Focal Area Strategy	• Desk Review of Documents
• Is the project aligned to national development objectives, broadly, and to national energy//////// transition priorities specifically?	• The project design includes explicit links (indicators, outputs, outcomes) to the national development policy/national energy ??????policies	• Project Document • National development strategy, waste management policies, etc.	• Desk Review of Documents • Interviews of the project stakeholders
• Is the project's Theory of Change relevant to addressing the development challenge(s) identified?	• The Theory of Change clearly indicates how project interventions and projected results will contribute to the reduction of the three major barriers (policy, institutional/ technical capacity and financial)	• Project Document • PIF	• Desk Review of Documents
• Does the project directly and adequately address the needs of beneficiaries at local and regional levels?	• The Theory of Change clearly identifies beneficiary groups and defines how their capabilities will be enhanced by the project	• Project Document • PIF	• Desk Review of Documents
• Is the project's results framework relevant to the development challenges have the planned results been achieved?	• The project indicators are SMART • Indicator baselines are clearly defined and populated and milestones and targets are • The results framework is comprehensive and demonstrates systematic links to the theory of change	• Project Document • PIF	• Desk Review of Documents • Interviews of the project stakeholders
• Have the relevant stakeholders been adequately identified and have their views, needs and rights been considered during design and implementation?	• The stakeholder mapping and associated engagement plan includes all relevant stakeholders and appropriate modalities for engagement.	• Project Document • Inception report	• Desk Review of Documents • Stakeholder Interviews

		• Planning and implementation have been participatory and inclusive	• Stakeholder mapping/engagement plan and reporting • Quarterly Reports • Annual Reports (PIR)	
	• Have the interventions of the project been adequately considered in the context of other development activities being undertaken in the same or related thematic area?	• A partnership framework has been developed that incorporates parallel initiatives, key partners and identifies complementarities	• Project Document • Quarterly Reports • Annual Reports (PIR) • Stakeholder mapping/engagement plan and reporting	• Desk Review of Documents • Stakeholder Interviews
	• Did the project design adequately identify, assess and design appropriate mitigation actions for the potential social and environmental risks posed by its interventions?	• The SES checklist was completed appropriately and all reasonable risks were identified with appropriate impact and probability ratings and risk mitigation measures specified	• Project Document • SES Annex	• Desk Review of Documents
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?				
	• Has the project achieved its output and outcome level targets?	• The project has met or exceeded the output and outcome indicator end-of-project targets	• Quarterly Reports • Annual Reports (PIR) • Site visit/field reports	• Desk Review of Documents • Interviews with project staff, stakeholders and beneficiaries
	• Have lessons learned been captured and integrated into project planning and implementation?	• Lessons learned have been captured periodically and/or at project end	• Validation Workshop Minutes *(if available)* • Quarterly Reports • Annual Reports (PIR)	• Desk Review of Documents • Interviews with project staff, stakeholders and beneficiaries
	• Has the M&E plan been well-formulated, and has it served as an effective tool to support project implementation?	• The M&E plan has an adequate budget and was adequately funded • The logical framework was used during implementation as a management and M&E tool	• Project Document • M&E Plan • AWPs • FACE forms	• Desk Review of Documents • Interviews with project staff and government stakeholders

		• There was compliance with the financial and narrative reporting requirements (timeliness and quality) • Monitoring and reporting has been at both the activity and results levels	• Quarterly Narrative Reports • Site visit reports	
	• Were relevant counterparts from the Government and civil society involved in project implementation, including as part of the Project Board?	• The Project Board participation included representatives from key project stakeholders	• Project Board Minutes *(if available)*	• Interviews with project staff, stakeholders and beneficiaries
	• How effective were the partnership arrangements under the project and to what extend did they contribute to achievements of the project results?	• A partnership framework has been developed that ensured coordination of parallel initiatives, involvement of key partners and identification of complementarities	• Annual Reports (PIR) • Quarterly reports	• Desk Review of Documents • Interviews with project staff, stakeholders and other donors
	• How well were risks (including those identified in the Social and Environmental Screening (SES) Checklist), assumptions and impact drivers being managed?	• A clearly defined risk identification, categorization and mitigation strategy (updated risk log in ATLAS)	• UNDP ATLAS Risk Log • M&E Reports	• Desk Review of Documents • Interviews with project staff, stakeholders and beneficiaries
• Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?				
	• Did the project adjust dynamically to reflect changing national priorities/external evaluations during implementation to ensure it remained relevant?	• The project demonstrated adaptive management and changes were integrated into project planning and implementation through adjustments to annual work plans, budgets and activities • Changes to AWP/Budget were made based on mid-term or other external evaluation • Any changes to the project's planned activities were approved by the Project Board • Any substantive changes (outcome-level changes) approved by the Project Board and donor, as required	• Annual Work Plans • Validation Workshop Minutes • Quarterly Reports • Annual Reports (PIR) • Project Board meeting minutes *(if available)*	• Desk Review of Documents • Interviews with project staff, stakeholders and beneficiaries

	• Was the process of achieving results efficient? Did the actual or expected results (outputs and outcomes) justify the costs incurred? Were the resources effectively utilized?	• The project achieved the planned results in an efficient manner • Funds used for project implementation were utilized affectively and contributed to achievement of project results	• Annual Workplans • Quarterly Reports • Project document	• Desk Review of Documents • Interviews with project staff, stakeholders, beneficiaries
	• What were the strengths and weaknesses of the implementation modality?	• The project implementation followed the division of responsibilities between the project implementing partners in an efficient manner	• Annual Reports (PIR) • Quarterly reports	• Desk Review of Documents • Interviews with project staff, stakeholders, beneficiaries
	• Was co-financing adequately estimated during project design (sources, type, value, relevance), tracked during implementation and what were the reasons for any differences between expected and realised co-financing?	• Co-financing was realized in keeping with original estimates • Co-financing was tracked continuously throughout the project lifecycle and deviations identified and alternative sources identified • Co-financiers were actively engaged throughout project implementation	• Annual Work Plans (AWPs) • Validation Workshop Minutes *(if available)* • Quarterly Reports, including financial reports • Annual Reports (PIR)	• Desk Review of Documents • Interviews with project staff, stakeholders, other donors and beneficiaries
	• Was the level of implementation support provided by UNDP adequate and in keeping with the implementation modality and any related agreements?	• Technical support to the Executing Agency and project team were timely and of acceptable quality. • Management inputs and processes, including budgeting and procurement, were adequate	• UNDP project support documents (emails, procurement/ recruitment documents) • Quarterly Reports • Annual Reports (PIR)	• Desk Review of Documents • Interviews with project staff, UNDP personnel
	• Were financial audit/spot check findings adequately addressed and relevant changes made to improve financial management?	• Appropriate management responses and associated actions were taken in response to audit/spot check findings. • Successive audits demonstrated improvements in financial management practices	• Project Audit Reports	• Desk Review of Documents
• Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?				
	• Are there political, social or financial risks that may jeopardize the sustainability of project outcomes?	• The exit strategy includes explicit interventions to ensure sustainability of relevant activities	• Program Framework Document • Risk Log	• Desk Review of Documents

	• What are the factors that will require attention in order to improve prospects of sustainability and potential for replication?	• The exit strategy includes explicit interventions to ensure sustainability of relevant activities and identifies relevant factors requiring attention in the future	• Program Framework Document	• Desk Review of Documents
	• Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits?	• The exit strategy identifies relevant socio-political risks and includes explicit interventions to mitigate same	• Program Framework Document • Risk Log	• Desk Review of Documents
	• Have key stakeholders identified their interest in project benefits beyond project-end and accepted responsibility for ensuring that project benefits continue to flow?	• Key stakeholders are assigned specific, agreed roles and responsibilities outlined in the exit strategy	• Program Framework Document • Risk Log	• Desk Review of Documents
	• Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes?	• The exit strategy identifies relevant environmental risks and includes explicit interventions to mitigate same	• Program Framework Document • Risk Log	• Desk Review of Documents
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?				
	• Are there verifiable improvements in ecological status, or reductions in ecological stress, that can be linked directly to project interventions?	• The project has contributed directly to improved ecological conditions, including through reduced GHG emissions for energy generation	• Quarterly Reports • Annual Reports (PIR)	• Desk Review of Documents

Annex 3: List of People Interviewed

Institution	Person (s)	Position
UNDP CO	Evelyn Koech	Team Leader, Environment and Resilience Unit
	Washington Ayiemba	Program Officer
UNDP MPU/Chemicals	Etienne Gonin	Regional Technical Advisor (up to 31 March 2021)
UNDP Istanbul Regional Hub	Maksim Surkov	Regional Technical Advisor (actual)
Ministry of Environment & Forests Nairobi	Cyrus Mageria	Director MEAs
	Francis Kihumba	Ag. Project Manager
	Narasha Meigara	Project Finance
Ministry of Health Nairobi	Gamaliel Omondi	Public Health, Ministry of Health
University of Nairobi	Vincent Madadi	GMP coordinator
National Environment Management Authority Nairobi	John Mumbo	Head – Chemicals & Laboratory
Water Resources Authority Nairobi	Frederick Nyongesa	Water Quality Manager
Jaramogi Oginga Odinga teaching and Referral Hospital Kisumu	Rose Abuya	Public Health Officer in Charge
County Government of Kisumu	Ken K'Ooyooh	Director, Environment
	Jeremiah Ongwara	County PHO
Water Resources Authority Laboratory Kisumu	Fanuel	Officer in Charge -Water Quality Lab
MS Manyatta CBO	Edwin Onyango	Leader
County Government Nakuru	Kimotho Mungai	CECM – Environment, Energy & Natural Resources
Nakuru County Government	George Gachoka	County PHO
	Carolyne Vaata	County PHO (WASH)
Nakuru Teaching and Referral Hospital/Provincial General Hospital	Florence Mbasweti	PHO in charge
Nakuru Solid Waste Management Association (NASWAMA)	Kepha Onditi	Chair Person
	James Ndiritu	Member
	Maina Wang'ombe	Member
	James Ogongo	Member
	Joash Omaylo	Member

Institution	Person (s)	Position
	Elizabeth Njoroge	Member
	Devina Kwamboka	Member
Naivasha Hospital	Dr Douglas Osoro	Ag. Med Sup
	Benjamin Mwaura	Nurse-in-Charge
	George Muchiri	Bio-medical engineer
	Varim Kerha	PHO
County Government Mombasa	Dr. Godfrey Nato	CECM
	Justus Nandwa	UPOPs focal Person
Likoni Hospital Mombasa	SAUMU Ibrahim	Matron/PHO in charge
	Mohammed Nasoor	Medical Engineer
Port Reitz Hospital Mombasa	Abdalla Magabao	PHO in charge
NEMA Mombasa	Kennedy Njau	Environment Officer

Annex 4: List of Documents Consulted

1. UPOPs Reduction and Mainstreaming of Sound Chemicals Management in Kenya, GEF Secretariat Review, GEF (2014)
2. UPOPs Reduction and Mainstreaming of Sound Chemicals Management in Kenya, Project Identification Form, UNDP, (2014)
3. UPOPs Reduction and Mainstreaming of Sound Chemicals Management in Kenya, Project Document, UNDP (2015)
4. Minutes of the LPAC, MENR (2016)
5. Inception Workshop Report on the Sound Management of Chemicals and Minimising UPOPs Project, MENR (2016)
6. Project Implementation Reports (PIRs), UNDP (2018-2021)
7. Minutes of the Project Steering Committee, MENR (2016-2021)
8. Combined Delivery Reports, UNDP (2016-2021)
9. UPOPs Reduction and Mainstreaming of Sound Chemicals Management in Kenya, Mid-Term Review Report, UNDP (2019)
10. Management Response to the UPOPs Project MTR Report, UNDP (2020)
11. Institutional Needs Analysis for Chemicals and Waste Management In Kenya, UPOPs Project Report (2017)
12. Environmental Management and Coordination (Toxic and Hazardous Chemicals and Materials Management) Regulations, NEMA (2019)
13. National Sustainable Waste Management Policy – Revised Draft, MENR (2019)
14. Review of the Kenya National Guidelines for Safe Management of Health Care Waste, Injection Safety and Safe Disposal of Medical Waste National Communication Strategy and Health Care Waste Management Standard Operating Procedures (SOPs), UPOPs project report (2017)
15. HCWM National Communication Strategy, MoH (2020)
16. Awareness on Environmentally Sound Solid Waste Management by Communities and Municipalities in Kenya, UPOPs project report (2017)
17. Minutes of PMU Meetings, UPOPs reports (2017-2019)
18. Mapping of Dumpsites, Summary Back to Office Mission Reports, (2019 and 2021)
19. GEF Evaluation Policy, GEF IEO, 2019
20. UNDP Revised Evaluation Policy, UNDP, 2019
21. Guidelines for GEF Agencies in Conducting Terminal Evaluation for Full-sized Projects, GEF, 2017
22. UNDP Evaluation Guidelines, Independent Evaluation Office of UNDP, 2019
23. Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects, UNDP IEO, 2020
24. Outcome-Level Evaluations, A Companion Guide, UNDP, 2011
25. Glossary of Key Terms in Evaluation and Results Based Management, OECD, 2010
26. Ethical Guidelines for Evaluations, UNEG, 2008

Annex 5: Project Results Framework (at Inception)

This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD:

Country Programme Outcome Indicators: UNDAP Outcome 4.1: Policy and legal framework: By 2016 Kenya has robust policies and legal frameworks linking issues of environmental sustainability, climate change and land management to human security and resilience therefore requiring an integrated & coordinated response at all phases
UNDAP Outcome Indicator: № of integrated operational action plans developed Baseline: 0; Target single integrated action plan 2015: in place; MoV: Integrated action plan. № of reported land and natural resource use conflict and disaster incidences in disaster prone counties Baseline TBD, Target 30% reduction, MoV Mapping reports

Applicable GEF Strategic Objective and Program: CW1 and CW3

Applicable GEF Expected Outcomes: Outcome 1.3 POPs releases to the environment reduced; Outcome 1.5 Country capacity built to effectively phase out and reduce releases of POPs; Outcome 3.1 Country capacity built to effectively manage mercury in priority sectors; Outcome 3.2 Contribute to the overall objective of the SAICM of achieving the sound management of chemicals throughout their life-cycle in ways that lead to the minimization of significant adverse effects on human health and the environment.

Applicable GEF Expected Outputs: Output 1.3.1 Action plans addressing un-intentionally produced POPs under development and implementation; Output 1.5.1 Countries receiving GEF support to build capacity for the implementation of the Stockholm Convention; Output 3.1.1 Countries receiving GEF support for mercury management and reduction, on a pilot basis; Output 3.2.1 Countries receiving GEF support to implement SAICM relevant activities, including addressing persistent toxic substances and other chemicals of global concern (other than mercury), on a pilot basis.

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Project Objective: Reduction of the releases of U-POPs and other substances of concern and of the related health risk through the implementation of ESM of municipal and healthcare waste and of an integrated institutional and regulatory framework covering management and reporting of POPs.	Existence of a SC compliant institutional and regulatory framework covering management and reporting of POPs. Amount of U-POPs releases in the environment from HCW disposal avoided. Amount of U-POPs release in the environment from municipal waste disposal avoided.	Chemicals have received heightened attention in Kenya. Kenya is an active participant in SAICM, being current president of ICCM4, a Party to Rotterdam, Basel, Stockholm Conventions and signatory to the Minamata Convention on Mercury. Despite having good policies, strategies, guidelines and legislation on solid waste, the country continues to dump most of its waste in sites that require eventual open burning.	Guidelines for relevant institutions on how to streamline chemicals management into their policies, strategies and action plans Updated pieces of relevant legislation Review of the HCWM guidelines Selection of health care facilities that can be used to demonstrate environmentally sound management of HCW At least 50% of HCW is disposed in ESM 30% of Municipal waste recycled through recycle, reuse and recovery methods	Guidelines in place Economic instruments in manufacture, use, import, export of chemicals in use reflecting the hazards that specific chemicals pose NEMA audit reports for the participating facilities Interim Review of the HCF on how much has been disposed through 3R, non burn technologies incineration Report on UPOPs Emission reduction Reports from participating NGOs and CBOs	Assumptions The MENR and MOH continue to have joint plans. MENR liaises properly with the National Treasury and the Ministry of Planning to highlight importance of chemicals in national development MOH prioritises HCW in its strategic plan 2015-2020 The selected CBOs and NGOs participate effectively in the project The steering committee operates in an effective way. Risks (low): Institutions losing momentum and commitments. Difficulties in securing and sustaining co-financing. Difficulties related to procurement and permitting of equipment.

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
COMPONENT 1. STREAMLINING SOUND MANAGEMENT OF CHEMICALS AND WASTE INTO NATIONAL AND COUNTY DEVELOPMENT ACTIVITIES THROUGH CAPACITY BUILDING OF MENR, MOH, COUNTY GOVERNMENTS OF NAIROBI, KISUMU, NAKURU AND MOMBASA AND THE NGOs - CBOs					
Outcome 1.1 Policies, strategies regulatory and policy framework integrating the provisions of streamlining chemicals management into development activities (specifically those of the Stockholm convention and the SAICM recommendations) adopted and institutional capacity on U-POPs and waste management enhanced.					
Output 1.1.1: Overall policy framework and specific regulatory measures covering environmentally sound management of chemicals in general and POPs in particular through chemicals life cycle management developed and implemented.	Availability of a completed and comprehensive gap analysis. Availability of a nationally endorsed roadmap for improving the existing regulations. Number of new or reviewed regulatory acts to take into account in a consistent manner the current provisions of the SC convention on POPs, with respect to the overall number of relevant regulatory norms to be reviewed identified in the gap analysis.	A preliminary analysis of the Kenyan policy and legal framework on chemicals affected by the SC has been carried out under the SAICM activities. Most of the existing regulations need to be amended for ensuring compliance with the Stockholm Convention, Rotterdam Convention, the Basel Convention and the Minamata Convention on Mercury and other related MEAs ratified by the country. The existing legislation is not adequately providing an integrated and consistent framework for the management of waste, chemicals and chemical pollution in the Country in line with Kenya's international obligations as party and signatory to the said MEAs.	Gap analysis completed within 12 months from the project start. A policy and legislation review roadmap approved within 24 months from project start. The identified polices and legislation regulation/s or their associated norms are amended for compliance with the SC requirements.	Intermediate and final review reports of gap analysis. Minutes of meetings, consultation workshops reports, etc. Formal acts related to the submission/ approval of new or amended norms.	**Assumptions** Although it is recognized that the improvement of regulations is not sufficient, nevertheless it is assumed that a better and sustainable regulatory system is the first step toward a sound management of POPs and Chemicals in general (covered by SAICM). The GoK is committed in ensuring compliance with SC requirements. **Risk (Low):** Law making process is relatively straightforward in Kenya thus this activity presents a low risk rating. The subsequent steps (enforcement and implementation) are much more complex.
Output 1.1.2: Key institutions14 have knowledge and skills to formulate and implement necessary chemicals and waste environmental policies, consistent with sound chemicals management principles and obligations under international agreements	Availability of capacity building needs assessment report. Existence of a Training Institution on Chemical Management.	Based on the outcome of the Kenya chemical profile (2011), there is a general need in Kenya to provide training programs on chemical information work or about collecting, collating, storing, retrieving and disseminating information on risks and hazards of chemicals. In addition, there is an urgent need to review the capacity of institutions that implement existing chemical management and environmental regulations.	Capacity building needs assessment for central and local institutions in charge of chemical management completed within 12 months from project start. Training materials tailored to the Kenyan situation, developed on POPs management, POPs monitoring, chemical emergency response and 3R of waste. At least 2 Excellence Training Centres on chemicals management established at a main Academic institution. At least 200 staff coming from all Kenyan counties and affiliated to governmental institutions, chemical industry and waste management companies selected and trained At least 2 training cycles (totally 10 days each) performed during project implementation. Effectiveness of training measured by means of pre-training and post-training examination of the participants Trainees who successfully pass post-training examination receive a certificate in Chemical management. . An award for most successful trainees consisting in contracts on Chemical Management at key Kenyan Institutions established.	Capacity building needs assessment report. Training material (presentations and textbooks) Training plan and curricula of the Chemical Training Centre. Training reports. Records of trainee examinations before and after the training (acceptance tests and post-training tests).	Assumption. The GoK is committed in improving the capacity of governmental and industrial staff in the sound management of chemicals and waste, by facilitating and supporting a certified training of key personnel. Willingness of institutions to take on-board new staff on Chemicals Management Risk (Low): If well planned, a good and effective training activity will be successfully implemented. Adoption of advanced training techniques and of a formal training assessment are key for reducing risk of ineffective training.

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Output 1.1.3 Key institutions have incorporated sound management of chemicals and wastes, including POPs, in their activities.	Number of POPs units at local and central environmental authorities trained and established. Availability of guidance documents on POPs and chemical management for local and central authorities. Availability of inspection reports.	The management of chemicals and waste in Kenya is very low at all levels (national / county). Although a certain number of regulations are in place, their enforcement in specific areas is minimal. Existence of Public Health Officers in the selected HCFs	Guidance and procedures for the integration of POPs issues in: chemical management, environmental permitting, waste management are developed for the local and central environmental authorities. Units on POPs management are trained and established in key local and central institutions. At least 6 inspections / year on the fulfilment of POPs regulation in the country performed.	Guidance documents for central and local authorities. Training reports. Service contracts for staff of local environmental authorities. Meeting and site visit reports	Assumptions Willingness to meet obligations to MEAs is strengthened by the current constitution. NEMA and MOH increases their inspection staff Risks (medium): The trained inspectors are not retained by the respective institutions, especially the counties and NEMA, meaning that the institutional memory must be strong to maintain the benefits of the training in the longer run.
Output 1.1.4 National coordinating meetings on POPs held regularly (4 times per year) without GEF financial	Availability of the formal act for the establishment of the National Chemical Management Coordination Office (NCMCO). Number of coordination meetings held.	Because of lack of policy requirement, the committee is formed on a need basis. Considering the Terms of Reference for inter-ministerial coordination developed under SAICM, the project will operationalise this coordination in a sustained manner.	A National Chemical Management Coordination Office (NCMCO) established at the Ministry of Environment, composed by representatives of relevant Ministries. Coordination Meetings of the National Chemical Management Coordination Office	Regulation establishing the National Chemical Management Coordination office. Meeting reports of the NCMCO.	Assumptions The key institutions will dedicate at least one officer to the work of the committee Risks (medium): The key institutions will not dedicate enough resources to the work of the committee.
Outcome 1.2 Monitoring activities intensified and strengthened and PRTR database in place					
Output 1.2.1 At least 70% of laboratory analyses in research and monitoring institutions required to monitor the implementation of national policy on hazardous chemicals and wastes being carried out on a cost recovery basis	Availability of a national plan for monitoring of POPs which establishes a market-based mechanism	Based on the Kenya National Profile, most laboratories lack sufficient equipment for proper analysis. There are few laboratories which are equipped with analytical instruments for analysing POPs. The most serious issue is however the fact that the laboratories work mainly with discontinuous project funds therefore their operation is not fully sustainable	Capacity building and equipment upgrading needs identified. National plan for environmental and industrial monitoring, which identifies POPs monitoring obligations for key industrial and waste management activities developed and implemented. A financial mechanism for ensuring the sustainability of POPs laboratories based on incentives and environmental taxes established and piloted for at least one year. • _Two key laboratories on POPs analysis accredited following ISO 17025 standards and associated accreditation schemes • _Up to 80 laboratories technicians and government staff trained on POPs monitoring related activities following international standards and requirements	Capacity building report on POPs analysis. Preliminary and final national plans on POPs monitoring obligations. Reports on the implementation and piloting of a financial mechanism on POPs monitoring. The selected labs are (or not) accredited or in the process of accreditation. Number of lab technicians trained and regularly analysing POPs.	Assumptions. The analytical laboratories (GCD/WARMA) are interested in expanding their capability to POPs. Risks (medium) Lack of expertise in the institutions National plans are not implemented

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Output 1.2.2 70% of universities nationwide include issues of hazardous chemicals and wastes, risks and legislation, in their curriculum	Number of universities including curricula on chemical risk assessment and management of hazardous chemicals and hazardous waste.	Undergraduate and postgraduate programmes in various areas of chemicals management are offered at various universities which include both public and private universities. However a coordinated approach towards addressing matters pertaining to chemicals management is missing	University curricula for chemical risk assessment and management of hazardous chemical and hazardous waste adopted by at least 70% of training institution. One cycle of curricula completed in at least 2 universities within the project timeframe.	Revised curricular Number of universities with training, and reporting changes in their curriculum	Assumptions Universities are ready and interested to include POPs issues in their curriculum. Risks (medium): Lack of willingness and capacity to revise curriculum. Lack of dedicated personnel.
Output 1.2.3 PRTR Database and reporting system in place	Regulatory tool for the implementation and enforcement of POPs / PTS reporting and PRTR established.	No PRTR Database and reporting system in place	By the end of the project, a circular drafted and submitted to GoK for approval related to implementation and enforcement of POPs monitoring and PRTR system to ensure sustainability of the PRTR related Demonstration of an Information Management System to support PRTR A POPs/PTS database established to contain data related to industrial sources, and POPs contaminated sites in 2 Kenyan provinces, and all the country-wide available data on POPs environmental monitoring.	Draft and final PRTR regulation PRTR preliminary reports.	Assumptions The institutions are aware and interested in establishing a PRTR system to improve the control of emission sources. Risks (medium): Funds will not be allocated to run PRTR Lobbies opposing the establishment of PRTR
COMPONENT 2. INTRODUCE ENVIRONMENTALLY SOUND MANAGENENT OF HEALTH CARE WASTE IN SELECTED HEALTHCARE FACILITIES; POLICY AND STRATEGIC PLANS TO PREPARE THEM TO ADOPT BAT AND BEP DISPOSAL					
Outcome 2.1 Personnel of hospital facilities and control authorities at central and county levels have enough capacity guidance and equipment to manage healthcare waste in an Environmental Sound Manner					
Output 2.1.1 Procedures and guidelines for the assessment and implementation of hazardous waste management at healthcare facilities built on lessons and examples from the application of the I-RAT tool under the GEF4 /UNDP Global projects and on the WHO bluebook “Safe Management of Wastes from Health-care Activities” developed and adopted	Evidence that the guidelines for the Environmentally Sound Management of HCW, including rapid assessment based on the I-RAT tool, have been developed and officially adopted.	The "National Guidelines for the Safe management of HCW" are not currently implemented in the pre-selected HCFs, do not contain any indication on the assessment of HCWM effectiveness, and are not fully compliant with the chemicals-related MEAs, especially the SC.	Revision/development of HCWM guidelines based on the last edition of the WHO bluebook (tailored to various facility types) which include tool and procedures for rapid assessment of HCWM The above guidelines are officially adopted by all the pre-selected HCFs.	Draft of revised HCWM guidelines Meeting minutes Draft regulations Acts of official adoption of the reviewed HCW guidelines by the MOH administration and the project HCFs.	Assumptions Project HCFs have the willingness and need to adopt an official guidance on best HCWM practices. Risks (high): The guidance is formally adopted but not fully enforced.

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Output 2.1.2 A national healthcare waste handbook containing guidelines for HCWM drafted and adopted by the MOH, including introduction of non-mercury devices in the HCFs	Availability of the healthcare waste management handbook and documentary evidence that it has been officially adopted. Updated and reviewed Waste Regulations dating from 2006	The "National Guidelines for Safe Management of Healthcare waste" need to be updated to be compliant with best HCWM practices. Based on the preliminary survey of project HCFs, even the existing guidelines are not being implemented.	Revision/development of emission and discharge standards on monitoring HCWM practices. Development of technical regulations for HCWM equipment and supplies. Development of standards on technologies for the processing and final disposal of HCW. Development of procedure and guidance for the replacement of mercury devices with non mercury	Draft, revised or adopted of the national healthcare waste handbook. Workshop and meeting minutes concerning the development and approval of the handbook	Assumptions The government of Kenya and specifically the MOH are available to update and disseminate guidelines on HCWM compliant with the SC. Risks (low): Lack of agreement on specific issues (for instance, technical specifications for incineration)
Outcome 2.2 Implementation of BAT/BEP at selected hospital facilities successfully demonstrated and measured against the baseline					
Output 2.2.1 Hospital personnel at all levels trained on the implementation of the above procedures	Number of staff from the project HCFs trained	Very limited training has been carried out in a small number of the preselected HCFs	All the staff of the HCF will receive training on HCWM. At least 200 staff from the project HCFs trained	Training reports. Certificate of attendance. Outcome of post-training tests	Assumptions: All the project HCFs are willing to have their staff trained on BAT/BEP of healthcare waste. Risk (low): Due to the shortage of staff or frequent turnover in hospital staff, not all the staff can participate in the training
Output 2.2.2 Baseline assessment of each healthcare facility based on the assessment procedures developed in 2.1.1 carried out, and waste management plans based on the baseline assessment level drafted and implemented	Baseline assessments conducted for all project facilities	None of the preselected HCFs underwent a detailed baseline assessment	I-RATs conducted for each of the HCFs participating / benefitting from the project. UPOPs releases before implementation of BAT/BEP determined for each project facility.	Baseline reports (including I-RAT reports and UPOPs release assessments).	Assumptions: All project HCFs are willing to participate in baseline assessments and are open to sharing information related to their current HCWM practices. Risk (low): Baseline assessment incomplete / carried out in an unsatisfactory
Output 2.2.3 ESM management of healthcare waste (based on WHO bluebook) implemented in 4 facilities in each county (12 facilities in total) including replacement of mercury devices with non mercury	All the project HCFs have introduced BEP in a satisfactory manner	The preliminary surveys conducted during PPG stage indicated that all the HCFs need a substantial improvement concerning the segregation, collection, transport, storage, and disposal of HCW	Memoranda of Understanding (MoUs) signed with all project HCFs. HCWM committees of all HCFs strengthened or established where missing. HCWM policies, procedures and plans developed and implemented at each project HCF. HCFs supported in minimizing waste streams, improving segregation and introducing recycling activities. Each HCF evaluated to verify introduction of BEP practices. At least 2000 mercury devices replaced by non mercury devices and safely stored pending disposa	MOUs HCWM plans of project HCFs _Assessment report after HCWM plan implementation.	Assumptions: HCFs are willing to sign MOUs and the MOU signature process does not slow down the launch of the HCF's HCWM activities. The implementation of best HCWM practices is sustained for the whole duration of the project and beyond. Risks: Turnover of the staff/consultant in charge of implementing environmentally sound practices in the hospital

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Output 2.2.4 Final assessment of the healthcare facility to measure results achieved with the implementation of the ESM against baseline is carried out and estimates amount of U-POP releases avoided	Availability of final assessment report based on the HCWM guidance	Although figures from preliminary assessment of some HCFs have been reported in the National HCW management plan, no measurement of the effectiveness of implementation of BET/BAP has ever been attempted in any HCF in Kenya	Final assessment conducted for each of the HCFs participating/ benefitting from the project with the assistance of properly trained project consultants best practices in HCWM determined for each project facility	Final assessment reports. UPOPs release estimation reports	Assumptions Project healthcare facilities sustain the best HCWM practices in compliance with the guidance developed by the project and establish a reliable monitoring procedure. Risks (medium): Previous project demonstrated the key role of project consultant in sustaining best HCWM practices in HCFs.
COMPONENT 3. DEMONSTRATION OF SOUND HEALTHCARE WASTE DISPOSAL TECHNOLOGIES IN A SELECTED NUMBER OF HEALTHCARE FACILITIES IN EACH COUNTY					
Outcome 3.1. Feasibility analysis and procurement of ESM technologies for healthcare waste disposal completed					
Output 3.1.1 Feasibility study and terms of reference for non-combustion or low-U-POPs emission technologies for healthcare waste disposal in selected hospitals or waste management facilities drafted.	Availability of feasibility study. Availability of cost-effectiveness analysis	The existing "National Guidelines for Safe management of health care waste" and the "National Health Care Waste Management Plan for Kenya 2008-2012" do not contain any indications on the compliance of the technology with the SC, and still mention the Montfort incinerator as a viable option for the disposal of HCW	Cost-effectiveness and feasibility analysis of centralized treatment facilities in comparison with the current situation (one small treatment facility for each HCF) carried out. Technical specifications for HCW treatment technologies drafted and approved. Technical specification for APCS and for the upgrading of a recent double chamber incinerator to be compliant with the SC drafted and approved.	Feasibility analysis report Technical specification and term of reference for non-combustion disposal equipment and for APCS	Assumptions The government of Kenya and more specifically the Ministries in charge of HCWM recognize the need for better specification for HCW treatment. Technologies for the disposal of HCW that suit the specific Kenyan situation are identified. Risks (low): Feasibility studies and TOR not suitable for the specific Kenyan situation
Outcome 3.2 BAT/BEP technologies for the disposal of healthcare waste successfully established and demonstrated, with a potential reduction of U-POPs emissions in the order of 19gTeq/year					
Output 3.2.1 Demonstration and performance assessment of the technologies in the selected facilities completed (at least 4 facilities or an overall amount of waste in the order of 630t/yr)	Number of non-incineration technologies that are operational. Number of incinerators reviewed and upgraded to the SC BAT/BEP requirements, and operational. Amount of U-POPs release prevented by means of implementation of better disposal practices.	Currently in none of the pre-selected HCFs a non combustion technology for the treatment of HCW is operational. Currently none of the incinerators installed at pre-selected HCFs fulfil SC BAT criteria; in some cases even the most elementary APCSs are missing. The current emissions of PCDD/F of the pre-selected facilities amount to an estimated 19 gTEq. Currently in Kenya there are no Centralized Treatment Facilities - each HCF has its own treatment plant.	Non-incineration technologies procured, installed and tested servicing at least 11 HCFs. Procurement of an initial set of HCWM related supplies for at least 12 HCFs. Staff trained in the operation and maintenance of the technologies installed at the HCFs HCFs supported in the implementation of their plans (including recycling activities) as well as monitoring practices. □ Agreements between CTFs and PFs drafted and signed for each PFs served by a CTF	Photos of procured non-incineration equipment and of the revamped incinerator. Certificates of training completion and attendance sheets of training sessions HCF visit reports Photos of recycling practices	Assumptions Thanks to UNDP experience in the field, procurement of non-incineration technologies and procurement of HCWM supplies does not run into major challenges. There is at least one incinerator among the existing incinerators in the pre-selected facilities which may be successfully revamped to fulfil SC requirements. A proper HCWM upstream will sustain the establishment of non-combustion technologies. Risks (medium):

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
					Although some of the existing incinerators are very new and provided with a secondary combustion chamber, their limited size may still prevent their upgrading with sophisticated APCPS. Procurement of equipment may present uncertainties which are not completely under the control of the project stakeholders
Output 3.2.2 Waste disposal activities of hospital facilities/programs are documented and their performance is evaluated to exemplify best practices in health-care waste management.	Proof of Performance test reports available Proof of performance tests in at least three non-combustion disposal facilities and at least one revamped incinerator available. HCW hazardous waste manifests available for at least 630 t of HCW yearly	Due to the lack of monitoring equipment, measurements of PCDD/F at the stack of incinerators were never taken in Kenya. Experience on the conduction of Proof of Performance tests for both combustion and non-combustion technologies is missing in the country	The release of at least 19 gTEq / yr of PCDD/F prevented thanks to the installation of BAT disposal technologies. Proof of performance tests for at least three non-combustion disposal facilities and at least one revamped incinerator carried out	Certificate of analysis of PCDD/F at the stack of incinerator facilities before and after their upgrade Hazardous waste manifests for the HCW processed by means of non-combustion equipment or by revamped incinerators. Monitoring and progress reports	Assumptions. At least one pre-selected project facility is keen to have the incinerator revamped to BAT/BEP and sustain it after project end. At least three pre-selected project facilities are keen to shift from incineration to non-combustion technologies for the disposal of HCW and to sustain the technology after project end. Risks (medium): Difficulties / delay in procurement, installing, testing, the equipment. Lack of the required infrastructures or utilities to run the equipment smoothly.
Output 3.2.3 Useful replication toolkits on how to implement best practices and techniques are developed	Toolkit for replication of best practices made available	The existing national guidelines and plans do not include any toolkit for the implementation of SC compliant disposal technologies	A practical toolkit for the replication of CTFs or single-facility BAT/BEP in other counties is drafted and endorsed by the government. The toolkit will be properly disseminated to relevant stakeholders	Draft and final toolkit Meeting / workshop minutes. Official toolkit endorsement document	Assumptions The dissemination of a practical toolkit on HCW disposal technologies to relevant stakeholders will effectively facilitate the implementation of BAT disposal technologies Risks (low): Toolkit not adequately disseminated / understood by the target institutions

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
COMPONENT 4. MINIMIZING RELEASES OF UNINTENTIONALLY PRODUCED POPS FROM OPEN BURNING OF WASTE					
Outcome 4.1. Awareness raising and capacity strengthening on ESM of solid waste ensured					
Output 4.1.1 Awareness raising activities for the communities and the municipalities aimed at enhancing 3Rs of waste	Level of awareness on 3Rs of different stakeholders as from interviews and questionnaires significantly raised	Awareness of the environmental impacts of improper management of municipal waste practices is generally limited. In addition, there is limited public awareness of the regulatory and institutional framework regarding POPs and hazardous chemicals in general	Awareness raising materials (printed or broadcasted) on 3Rs of materials which, if wasted, can generate U-POPs and toxic substances, developed and published for the 3 municipalities of Mombasa, Kisumu and Nakuru. At least 3 awareness raising workshops on 3Rs dedicated to the representatives of environmental authorities performed. At least 3 awareness raising event for the public at large in the 3 regions of Mombasa, Nakuru and Kisumu carried out	Awareness raising materials. Awareness raising workshop minutes	Assumptions The most effective way to prevent open burning of plastics and other PCDD/F generating waste is to raise awareness on the benefits of recycling. Risks (Low): Low awareness resulting in the difficulties in the collection of sufficient amount of plastic. Difficulties in the promotion of upstream waste segregation. Limited response from the public to the awareness campaigns
Output 4.1.2 Regulatory framework for the recovery of waste materials (glass, organic, plastic) and for licensing of the recovery activity at county and central levels improved to integrate SC requirements	Availability of improved regulatory framework which includes rules for 3Rs and preventing U-POPs emissions through cessation of open burning Waste guidelines include SC provisions Prioritisation of plastic waste	The Waste Management Regulations (2006) establish rules for the management of municipal waste, including provisions for licensing of collection, transportation, and running landfills. However the enforcement of this regulation is low	Waste management regulation and its enforcement improved to facilitate the reduce, recycle and recovery approach with special reference to waste which may generate toxic substances when burnt. Special provisions facilitating communities to perform upstream collection of recyclable waste and prevent unsafe dumping	Gap Analysis of existing municipal waste regulation in Kenya Final and preliminary draft of improved regulation or of planned measures for its better enforcement	Assumptions Although not sufficient, proper waste regulation and enforcement rules are necessary conditions for ensuring the safe management of waste Risks (Medium): Although necessary, proper waste regulation and enforcement rules are not sufficient for ensuring the safe management of waste
Output 4.1.3. Counties provided with training manuals, and technical assistance for the management of solid wastes	Availability of training manuals tailored for counties. Number of staff from counties who received technical assistance	Inadequate training on 3Rs of specific municipal waste streams is carried out for municipality and local authorities in charge of municipal waste management at the counties.	At least 6 field training initiatives for communities and 3 training-for-trainer initiatives for municipalities in Mombasa, Kisumu and Nakuru, aimed at enhancing 3Rs of specific waste streams waste on the basis of the 3R approach performed. At least 50 people trained for each training initiative	Training reports Training materials Attendance sheets	Assumptions The most effective way to prevent open burning of plastics and other PCDD/F generating waste is to train local communities to carry out up-stream recycling of waste. Risk (high): Communities not interested / not committed in undertaking upstream segregation of plastic
Outcome 4.2 Sound Management of solid waste in targeted municipalities implemented with the support of NGOs, with a reduction of unintentionally produced POPs from the burning of solid waste of 23 g I-TEQ/year (20 % of the current estimate of 247 g I-TEQ/year). Emergency plan to reduce exposure of population to harmful substances implemented					

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Output 4.2.1 Communities selected for demonstrating plans of actions for the reduction of solid waste open burning by increasing 3Rs of waste	Number of communities which are engaged in recycling of waste under the project	In Kenya there are a number of CBOs (Community Based Organizations) which are already operating in the field of waste recycling, however the limit of these activities is that most of the waste is recycled only after being dumped in landfills, therefore the quality is very low	At least one community for each site (Nairobi, Nakuru and Kisumu) is engaged and supported for conducting project activities. Selected communities and their representatives identified and officially recognized under the project Memorandum of understanding and community driven projects on 3Rs with resources, list of activities and timeframe are agreed and signed by government and community representatives	Meeting minutes. Preliminary and final list of selected communities. Memorandum of understanding signed by the selected communities Community projects on 3Rs signed by local or central GoK representatives and the communities	Assumptions Although communities are mostly informal entities, it will be possible to identify communities and their representatives and to establish a mechanism to coordinate and monitor their activities. Risks (Medium) Difficulties related to the low level of coordination and planning in community may hinder a community-based project if a continuous coordination with the project is not ensured
Output 4.2.2. Initiatives for reducing, reuse and recycle of waste and for composting, collection of compostable municipal waste for communities in three counties of Nairobi, Mombasa and Nakuru implemented with a PPP approach and supervised with the support of NGOs	Number of initiatives identified, properly designed and implemented on 3Rs. Waste accounting system in place. Amount of organic compostable waste collected at the source (not at the landfill) and processed for recycling. Amount of U-POPs releases prevented due to recycling activities and open burning avoidance	Currently, although a certain number of initiatives on waste recycling are being carried out by communities operating directly at the dumpsites, the recycling of compostable waste occurs mainly by processing paper or wood in briquettes for replacing coal in domestic stoves. These initiatives are in general not SC compliant and may imply exposure of people to U-POPs. Non-recyclables are open burnt by the communities which operate at landfill	At least one initiative aimed at collecting and recycling organic or compostable waste which, if burned, would generate U-POPs is identified, designed and implemented for each of the three sites. At least 500 tons of compostable material successfully collected from the source (not on the dumpsites) and re-used or re-cycled (waste to energy being not considered as suitable recycling activity), documented by a proper waste accounting system in place. The recycling activity is organized at industrial scale with the support of industrial partner(s).	Preliminary and final text of collection and recycling projects agreed. Reports generated by the waste accounting system (by means of simplified waste manifest system) Project Monitoring reports Project site visit minutes and photos. Workshop reports	Assumptions. There is a potential market for recyclable organic waste which may sustain an activity of collection and recycling upstream of the dumpsite. Local community's authorities may benefit from waste recycling economy both in terms of improvement of health conditions and creation of new, more formal jobs. Risks (high): Existing dumpsite communities may oppose the development of any activity which will prevent waste to enter the dumpsites
Output 4.2.3. Local initiative for the re-use / recycling of other non-hazardous waste streams (i.e. plastics).	Number of initiatives identified, properly designed and implemented on 3Rs of plastic waste. Waste accounting system for recycled plastic in place Amount of plastic collected at the source (not at the landfill) and processed for recycling. Amount of U-POPs releases prevented due to	Currently, although a certain number of initiatives on waste recycling are being carried out by communities in all the landfills, the recycling occurs mainly by collecting plastic or other materials at the dumpsites and by selling it at very low cost to waste traders. The direct selling of artisanal articles made of recovered plastic is very ineffective The issue of recycling of plastic bags is largely unanswered.	At least one initiative aimed at collecting and recycling plastic waste which, if burned, would generate U-POPs is identified, designed and implemented for each of the three sites. At least 30 tons/month of plastic successfully collected from the source (not on the dumpsites) and re-used or re-cycled, documented by a proper waste accounting system in place. Domestic industrial stakeholders involved for facilitating the placing on the market of recovered plastic at industrial scale.	Preliminary and final text of collection and recycling projects agreed. Reports generated by the waste accounting system (by means of simplified waste manifest system) Project Monitoring reports, Project site visit minutes and photos. Workshop reports	Assumptions. The potential market for recyclable plastic waste is big enough to sustain an activity of collection and recycling upstream of the dumpsite. Local communities' authorities may benefit from the waste recycling economy both in terms of improvement of health condition and creation of new jobs. Risks (medium):

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
	recycling activities and open burning avoidance	Non-recyclable plastics are often open burnt by the communities which operate at landfill			Existing dumpsite communities may oppose the development of any activity which will prevent waste to enter the dumpsites. Previous bilateral project on plastic recycling at dumpsite failed
Outcome 4.3 Municipal waste disposal sites with adequate management practices (non-burn).					
Output 4.3.1 Prioritization of open-burning landfills to be closed and cleaned up, emergency plans including social and resettlement issues and cleanup plans for at least 3 landfills drafted	Prioritisation of dumpsites in Kenya established. Emergency plans for limiting the release of U-POPs and other toxic chemicals from dumpsite are available for at least 3 dumpsites. Clean-up plans for 1 landfill are available	A number of clean-up and remediation plans have been drafted in the recent years for the Nairobi dumpsite; however none of these plans have been implemented. Remediation plans need to be designed involving communities living at the dumpsite to increase probability of implementation	Dumpsites in the main Kenyan cities prioritised for intervention and emergency countermeasures based on health risk assessment, ecosystem risk assessment and socio-economic and criteria. Emergency plan for three priority dumpsites, aimed at reducing release of U-POPs and other toxic chemicals, and at reducing exposure to POPs of the population, drafted. At least one remediation plan for a priority dumpsite, based on the economy of waste recycling, drafted with the involvement of dumpsite communities	List of priority dumpsites agreed with the GoK. Emergency plan for 3 priority dumpsites. Clean-up plan	Assumption Although none of the previous clean-up plans was implemented, is still useful to study the situation at priority landfills with a wider perspective to integrate lessons learnt and propose more feasible clean-up plans. Emergency plans, which objectives are limited to the prevention of U-POPs release and reduction of people exposure, have a greater probability of being implemented. Risks (high): Historically, the risk of failure is very high. The risk may be minimized by reducing the scope of remediation plans to prevention of U-POPs releases and limitation of people's exposure to chemicals
Output 4.3.2. Emergency measures for reducing release of contaminants in the environment and the exposure of the population implemented in one high priority site	Number of people who benefit from reduction of exposure to chemicals released by the dumpsite. Amount of the release reduction of U-POPs and other chemicals from implementation of emergency measures	None of the clean-up plans drafted in the past was implemented. No emergency measure for reduction of U-POPs release from open burning at dumpsites or reduction of people exposure to chemicals released by the dumpsite ever attempted	The exposure of at least 5,000 people to chemicals released from dumpsites is halved, thanks to the adoption of emergency measures. The release of at least 20 gTEq/yr of PCDD/F avoided by means of emergency measures directly aimed at preventing open burning of waste. The release of at least 3 gTEq/yr of PCDD/F avoided by means of activities implemented under output 4.2.3. aimed at preventing recyclable waste to enter dumpsites burning of waste	Reports from site visits. Surveillance reports conducted at the dumpsites where emergency measures have been put in place. Monitoring reports. Sampling and analysis reports. Documented interviews with people from local communities	Assumptions. Simple emergency measures (surveillance; fencing; incentives) may be effective in preventing open burning at landfills and at avoiding exposure to U-POPs. Risks (high): The effectiveness of any measure to be implemented at dumpsites requires a sound approach for involving dumpsite communities and ensuring their support
COMPONENT 5. PROJECT MONITORING AND EVALUATION					
Outcome 5.1. Project monitoring, including PIR, Annual and quarterly workplans, Annual and Quarterly Progress Reports					
Output 5.1.1 Project steering committee established	Steering committee appointed	N/A	National Steering Committee		

Result	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
Output 5.1.2 Progress report drafted and approved	Availability of Quarterly progress reports (QPRs) and annual ones (APRs)	N/A	Inception report and progress report as per monitoring plan drafted and approved		
Output 5.1.3 Workplans drafted and approved	Availability of Quarterly (QWP) and Annual (AWP) workplans	N/A	Quarterly and Annual workplans as per monitoring plan drafted and approved		
Outcome 5.2. Project evaluation and audit					
Output 5.2.1. Mid term evaluation completed	Availability of completed mid-term evaluation report	N/A	Mid-term evaluation completed		
Output 5.2.2 Terminal evaluation completed	Availability of terminal evaluation report	N/A	Terminal evaluation completed		
Output 5.2.3 Financial audit completed	Availability of financial audit report	N/A	Financial audit completed		

Annex 6: Performance Rating of GEF Projects

The main dimensions of project performance on which ratings are provided in terminal evaluation are outcomes, sustainability, quality of monitoring and evaluation, quality of implementation, and quality of execution.

Outcome ratings

The overall ratings on the outcomes of the project will be based on performance of the criteria of relevance, effectiveness and efficiency. A six-point rating scale is used to assess overall outcomes.

Highly Satisfactory (HS)	Level of outcomes achieved clearly exceeds expectations and/or there were no short comings
Satisfactory (S)	Level of outcomes achieved was as expected and/or there were no or minor short comings
Moderately Satisfactory (MS)	Level of outcomes achieved more or less as expected and/or there were moderate short comings
Moderately Unsatisfactory (MU)	Level of outcomes achieved somewhat lower than expected and/or there were significant shortcomings
Unsatisfactory (U)	Level of outcomes achieved substantially lower than expected and/or there were major short comings
Highly Unsatisfactory (U)	Only a negligible level of outcomes achieved and/or there were severe short comings
Unable to Assess (UA)	The available information does not allow an assessment of the level of outcome achievements

Sustainability Ratings

The sustainability will be assessed taking into account the risks related to financial, sociopolitical, institutional, and environmental sustainability of project outcomes. The evaluator may also take other risks into account that may affect sustainability. The overall sustainability will be assessed using a four-point scale.

Likely (L)	There is little or no risks to sustainability
Moderately Likely (ML)	There are moderate risks to sustainability
Moderately Unlikely (MU)	There are significant risks to sustainability
Unlikely (U)	There are severe risks to sustainability
Unable to Assess (UA)	Unable to assess the expected incidence and magnitude of risks to sustainability

Monitoring and Evaluation Ratings

Quality of project M&E are assessed in terms of design and implementation on a six point scale:

Highly Satisfactory (HS)	There were no short comings and quality of M&E design / implementation exceeded expectations
Satisfactory (S)	There were no or minor short comings and quality of M&E design / implementation meets expectations
Moderately Satisfactory (MS)	There were some short comings and quality of M&E design/implementation more or less meets expectations
Moderately Unsatisfactory (MU)	There were significant shortcomings and quality of M&E design / implementation somewhat lower than expected
Unsatisfactory (U)	There were major short comings and quality of M&E design/implementation substantially lower than expected
Highly Unsatisfactory (U)	There were severe short comings in M&E design/ implementation
Unable to Assess (UA)	The available information does not allow an assessment of the quality of M&E design / implementation

Implementation and Execution Rating

Quality of implementation and of execution will be rated separately. Quality of implementation pertains to the role and responsibilities discharged by the GEF Agencies that have direct access to GEF resources. Quality of Execution pertains to the roles and responsibilities discharged by the country or regional counterparts that received GEF funds from the GEF Agencies and executed the funded activities on ground. The performance will be rated on a six-point scale.

Highly Satisfactory (HS)	There were no short comings and quality of implementation / execution exceeded expectations
Satisfactory (S)	There were no or minor short comings and quality of implementation / execution meets expectations
Moderately Satisfactory (MS)	There were some short comings and quality of implementation / execution more or less meets expectations
Moderately Unsatisfactory (MU)	There were significant shortcomings and quality of implementation / execution somewhat lower than expected
Unsatisfactory (U)	There were major short comings and quality of implementation / execution substantially lower than expected
Highly Unsatisfactory (U)	There were severe short comings in quality of implementation / execution
Unable to Assess (UA)	The available information does not allow an assessment of the quality of implementation / execution

Annex 7: Evaluation Report Outline[22]

i. Opening page:
- Title of UNDP supported GEF financed project
- UNDP and GEF project ID#s.
- Evaluation time frame and date of evaluation report
- Region and countries included in the project
- GEF Operational Program/Strategic Program
- Implementing Partner and other project partners
- Evaluation team members
- Acknowledgements

ii. Executive Summary
- Project Summary Table
- Project Description (brief)
- Evaluation Rating Table
- Summary of conclusions, recommendations and lessons

iii. Acronyms and Abbreviations

1. Introduction
- Evaluation purpose
- Scope & Methodology
- Data collection and analysis
- Evaluation ethics
- Limitations

2. Project description and development context
- Project start and duration
- Development context
- Problems that the project sought to address
- Immediate and development objectives of the project
- Description of the project's Theory of Change
- Expected results
- Total resources
- Main stakeholders and key partners involved

3. Findings

(In addition to a descriptive assessment, all criteria marked with (*) must be rated)

3.1 Project Design / Formulation
- Analysis of LFA/Results Framework (Project logic /strategy; Indicators)
- Assumptions and Risks
- Lessons from other relevant projects (e.g., same focal area) incorporated into project design

[22] The presented TE Report outline is based on the 2020 UNDP/GEF TE guidelines that reflect the GEF-7 project development template. However, the project was prepared according to the GEF-6 project development template that was not identical with the GEF-7 template.

- Planned stakeholder participation
- Replication approach
- UNDP comparative advantage
- Linkages between project and other interventions within the sector
- Gender responsiveness of the project design
- Social and environmental safeguards

3.2 Project Implementation

- Adaptive management
- Actual stakeholder participation and partnership arrangements
- Project Finance and co-finance
- Monitoring & Evaluation: design at entry (*), implementation (*), overall assessment of M&E (*)
- UNDP implementation/oversight (*), Implementing Partner execution (*) and overall assessment of implementation/oversight and execution (*)
- Risk Management

3.3 Project Results and Impacts

- Progress towards objective and expected outcomes
- Relevance (*)
- Effectiveness
- Efficiency (*)
- Overall Project Outcome (*)
- Sustainability: financial(*), socio-political(*), institutional framework and governance(*), environmental(*), overall likelihood of sustainability(*)
- Country ownership
- Gender equality and women's empowerment
- Cross-cutting issues
- GEF additionality
- Catalytic/Replication effect
- Progress to impact

4. Main Findings, Conclusions, Recommendations, Lessons Learned

- Main Findings
- Conclusions
- Recommendations
- Lessons learned

5. Annexes

- Terms of Reference
- Evaluation Question Matrix
- List of persons interviewed
- List of documents reviewed
- Project results framework
- Performance ratings of GEF projects
- Evaluation Consultant Agreement Form
- *Annexed in a separate file:* TE audit trail

Annex 8: Interview Guide

Relevance: the project and its strategy

- How are you connected with the project?
- How important is your project for Kenya?
- What do you think about the design of the project? Are there enough resources? Missing important events? What would you advise to adjust?
- What other similar projects is your agency involved in?

Project results

- What have been the main important achievements so far and why do you think so?
- What were the main challenges for achieving the planned results?
- As far as you know, the project will most likely achieve all planned results on time? If not, what would be your recommendations?
- In what areas can the project be expanded if positive results have already been achieved?
- How can the project remove barriers to achieving results?
- Has the project led to increased capacity of local specialists? What could have been done differently?

Management arrangements

- How would you rate the role of UNDP? What could have been done better?
- Was due consideration given to the results?
- What external factors influenced the project's completion on time?
- Is the composition of the Project Board and the staffing of the project adequate, as well as the level of involvement of experts?

Planning, monitoring and reporting

- How do you rate project management? Is the PM responding well enough to emerging challenges? What could have been done better?
- How would you rate the work planning for the project? What should be improved?
- Is your agency engaged in monitoring? Is there anything that needs to be done differently?
- Have you seen the project reports? Do you have any suggestions for improvement?

Finance and co-finance

- Does your agency oblige co-financing to the project? If so, will it be implemented? If not, why not?

Stakeholder Engagement

- What do you think about the project's interaction with national organizations and experts? What could have been done differently?
- How has the current level of stakeholder engagement influenced the results and national ownership?

Communication

- Is the communication regular and effective? What could have been done differently?
- Do you think the project is noticeable enough? What could have been done differently?

Sustainability

- Will the project achievements be sustained? Why do you think so?
- What is the likelihood that financial and economic resources will be available after the end of GEF assistance to sustain project results? Why do you think so?
- Are there any social or political risks that could jeopardize the sustainability of the project results?
- What is the risk that stakeholder ownership will not be sufficient to sustain the results / benefits of the project?
- Is there sufficient public / stakeholder awareness to support the project objectives?
- Are the successful aspects of the project communicated to the appropriate parties?

Other

- What should the project focus on in the remaining period?
- Do you have any other comments that were not covered in the interview?

Annex 9: Evaluation Consultant Agreement Forms

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Name of Consultant: Dalibor Kysela

Name of Consultancy Organization (where relevant)**:** N.A.

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at Vienna 8 November 2021

Signature: 

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
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6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Name of Consultant: Aron Kecha

Name of Consultancy Organization (where relevant)**:** N.A.

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at Nairobi 8 November 2021

Signature: 

Annex 10: Signed TE Report Clearance Form

Terminal Evaluation Report for Sound Chemicals Management Mainstreaming and UPOPs reduction in Kenya Project with 5361 UNDP PIMS ID Reviewed and Cleared By:

Commissioning Unit (M&E Focal Point)

Name: _____

Signature: _____ Date: _____

Regional Technical Advisor (Nature, Climate and Energy)

Name: Maksim SURKOV

Signature: _____ Date: _____

Annex 11: Audit Trail – annexed as separate file

Annex 12: Tracking Tools – annexed as separate file

Annex 13: Terminal Evaluation Management Response – annexed as separate file

Annex 14: GEF Co-financing Template – annexed as separate file