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Report:

Terminal Evaluation of the project:

‘Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan’

GEF Project ID: 5068

UNDP GEF Project ID (PIMS): 5155

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Evaluator:

Dinesh Aggarwal, India (International Consultant)

Disclaimer

Please note that the analysis and recommendations of this report do not necessarily reflect the views of the United Nations Development Programme, its Executive Board or the United Nations Member States. This publication reflects the views of its author.

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LIST OF ACRONYMS

APR	Annual Project Review
AWP	Annual Work Plan
BTOR	Back to Office Report
CO	Country Office
CP	Country Programme
EBRD	European Bank for Reconstruction and Development
FAP	Health Dispensaries (only exist in rural areas)
FMC	Family Medicine Centers
FGP	Family General Practitioners
GEF	Global Environment Facility
HCWM	Health Care Waste Management
HCF	Health Care Facility
Hg	Mercury
I-RAT	Individualized Rapid Assessment Tool
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MoU	Memorandum of Understanding
NGO	Non-Governmental Organization
NAP	National Action Plan
NIP	National Implementation Programme
PAC	Project Approval Committee
PA	Project Assistant
PB	Project Board
PC	Project Coordinator
PIR	Project Implementation Review
PIU	Project Implementation Unit
POP	Persistent Organic Pollutant
PPG	Project Preparation Grant
PPG	Personal Protection Gear
PPR	Project Progress Report
PRF	Project Results Framework
QPR	Quarterly Progress Reports
RCIC	Republican Center for Infection Control
RCU	Regional Coordination Unit
SAEPF	State Agency on Environmental Protection and Forestry
SOP	Standard Operating Procedures
SRC	Swiss Red Cross
SWAp	Sector Wide Approach
TOR	Terms of Reference
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Organization
UNEP	United Nations Environment Programme
WHO	World Health Organization

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EXECUTIVE SUMMARY

Project summary table

Table 1: Project Summary

Project Title:	“Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan”			
GEF Project ID: UNDP GEF Project ID (PIMS):	#5068 #5155		at endorsement (US\$)	at completion (US\$)
Atlas award ID: Atlas project ID:	00078201 00088593	GEF financing:	1,425,000	1,425,000
Country:	Kyrgyzstan	IA/EA own:		
Region:	ECIS	Government:	2,600,000	2,600,000
Focal Area:	POPs	Other:	4,432,148	4,432,148
FA Objectives, (OP/SP):	Objective CHEM-1 Objective CHEM-3	Total co-financing:	7,032,148	7,032,148
Executing Agency:	UNDP	Total Project Cost:	8,457,148	8,457,148
Other Partners involved: ..	The Ministry of Health of the Kyrgyz Republic, the State Agency on Environment Protection and Forestry of the Kyrgyz Republic	ProDoc Signature (date project began):	03 July 2014	
		(Operational) Closing Date:	Proposed: July 2017	Actual: July 2018

Introduction and brief description of the project

The project, ‘Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan’ has been implemented in Kyrgyzstan. The objective of the project was to implement and adopt ‘Best Environmental Practices’ (BEP) and Best Available Technologies (BAT) in healthcare facilities throughout the City of Bishkek to improve management, treatment, and disposal of the healthcare waste, as well as support a number of rural health posts in Chui and Issykul Oblast.

The project was to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention on Persistent Organic Pollutants (POPs) by adopting environmentally friendly treatment options for healthcare waste, with consequent reduction in the emissions of ‘Unintended Persistent Organic Pollutants’ (UPOPs). Emissions of UPOPs are controlled under the Stockholm Convention. Uncontrolled burning of medical waste is one of the major sources of emissions of UPOPs.

One of the other objective of the project was to reduce mercury releases from the health care sector (generally caused by the breakage of Mercury containing thermometers), by supporting the phase out of Mercury containing medical equipment and introduction of the Mercury-free alternatives. This activity was to assist Kyrgyzstan in meeting its obligations to the Minamata Convention on Mercury (once the convention enters into force). Besides reducing releases of UPOPs and Mercury, the project had many socio-economic co-benefits. The project had following four components;

Component 1: Strengthening of the National Regulatory and Policy Framework for Health Care Waste Management

Component 2: Implementation of Best Available Technologies (BAT), Best Environmental Practices (BEP) for Health Care Waste Management (HCWM) Systems.

Component 3: Implement Mercury Waste Management and Reduction Activities for the City of Bishkek

Component 4: Monitoring, Adaptive Feedback, Outreach and Evaluation

As one of the steps to achieve the developmental objective of reducing the releases of UPOPs and mercury from healthcare entities, the project aimed to strengthen the regulatory and policy framework pertaining to POPs and mercury, as well as to provide training and capacity building. The project was to directly reduce emissions of UPOPs and mercury through improved healthcare waste management in eleven hospitals/ polyclinics and 100 rural Health Dispensaries.

The project has been implemented using Direct Implementation Modality (DIM) as per UNDP's procedures. The project's Executing Entities were the Ministry of Health and the State Agency for Environment Protection and Forestry, whilst UNDP was the Implementing Entity. As the project has reached its, 'Terminal Evaluation' of the project has been carried out in order ascertain the outcomes and impact of the programme, measured against its original purpose, objectives whilst in the process capturing the evaluative evidence of the relevance, effectiveness, efficiency and sustainability of this project, which will set the stage for future similar initiatives. The Terminal Evaluation was carried out by an independent international consultant (Dinesh Aggarwal, India). This report presents the findings of the 'Terminal Evaluation'.

Project Objectives and Logical Frame Work

Table 2, below provides the Project Objectives along with the summary of the planned outcomes. It also shows the corresponding set of indicators for monitoring and verification of the achievements against the Objectives and the Outcomes.

Table 2: Project Results Framework (as per Project Document1)

	Indicator	Baseline	Targets End of Project
Project Objective: Implement best environmental Practices (BEP) and Best Available Technologies (BAT) in the health-care sector to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention to reduce UPOPs as well as Mercury releases.	UPOPs emissions reduced as a result of improved HCWM treatment systems used by HCFs benefitting from the project.	Kyrgyzstan's NIP, calculated that the total releases of dioxins in 2003 were 30.5 g-TEQ. The majority of releases were indicated to be the result of combustion practices, with the greatest contribution made by incineration of medical wastes (7 g-TEQ)	In total the project expects to reduce UPOPs emissions by 3- TEQ/yr.
	Country capacity built to effectively phase out and reduce releases of POPs	The current regulatory framework does not cover all medical waste management challenges, which the country is facing, while existing guidelines do not have any legal status and as such are not enforceable.	Legal and regulatory framework enhanced through the revision of the national HCWM strategy, the development of a national strategy for anatomical waste, and the development of standards and degrees pertaining to HCWM.
	Mercury emissions reduced as a result of the phase-out of Mercury	No national Mercury Assessment has been undertaken yet, but based on 2011 and 2012 import figures, between 58 and 305 kg of Mercury, contained in medical thermometers, is imported yearly.	The phase-out of Mercury containing thermometers will result in sustained Mercury reductions of approximately 160 kg Hg/year.

¹ During Project Inception some changes in the Results Framework of the Project were carried out. As can be seen for some of the indicators (particularly for Outcome 2.3, the target values has not been specified. At the time of project inception the target values for the indicators for Outcome 2.3 were not specified. The MTR has mentioned that the indicators for Outcome 2.3 do not have much meaning.

	Indicator	Baseline	Targets End of Project
	containing medical thermometers and improved management of Mercury containing wastes.		
COMPONENT 1: Strengthening Of The National Regulatory And Policy Framework For Health Care Waste Management			
Outcome 1.1 The policy framework for Health Care Waste Management enhanced	- National Health Care Waste Management Strategy revised and updated. - National Strategy for Anatomical Waste developed.	- Although a National Strategy (2008-2012) on HCWM was elaborated, it has never been approved/adopted due to lack of funding for its implementation. - The collection, safeguarding and transport of anatomical wastes is highly inadequate.	- National Strategy on Healthcare waste management in the Kyrgyz Republic finalized. - National Strategy for Anatomical Waste drafted.
Outcome 1.2 The regulatory and policy framework for Health Care Waste Management enhanced.	Number of approved and adopted standards and degrees developed as part of the project.	- HCWM related legislation is merely functioning as a framework and reflects the general requirements to prevent adverse effects on health and the environment. However, most of these are guidelines do not have any legal status and as such are not enforceable. - The current regulatory framework does not cover all medical waste management challenges, which the country is facing. - A major challenge remains the implementation and enforcement of regulations and guidelines, which are often issued without providing HCFs or stakeholders with any support or capacity building to enable them meet the requirements set-out in these regulations /guidelines.	- Standards on technologies for the processing and final disposal of HCW developed. - Standards on HCW in immunization offices developed. - Standards on DoD developed. - Standards on treatment of chemical and pharmaceutical waste developed. - Standards on monitoring HCWM practices developed. - Job descriptions for those responsible for HCWM at HCFs developed. - Import ban drafted on PVC containing syringes and other medical products for which cost- effective alternative are available.
COMPONENT 2: Implementation Of Best Available Technologies (Bat), Best Environmental Practices (BEP) For HCWM Systems			
Outcome 2.1 Accurate insight in the HCWM situation at each of the HCFs supported by the project.	I-RATs completed for each of the HCFs supported by the project	Some baseline information is available mainly from prior HCWM assessments as well as from the project's PPG phase.	- All HCFs have participated in a HCWM assessment. - An accurate UOPs and Hg baseline has been established for each HCF
Outcome 2.2: Allocation of HCWM technologies, devices, supplies and Technical Assistance (TA) needs determined for each HCF	Detailed procurement and TA plan for the implementation of Phase I. Updated Zoning Plant	- Some information is available on the type of TA and equipment/supplies that would be required for HCFs, however detailed information for each HCFs will be required to draw up a sound procurement and TA plan. - A Zoning Plan was developed in 2012 but is currently outdated. The Zoning Plan will also require revision to reflect the outcomes of the I-RATs.	- For each HCF, HCWM equipment, Technical Assistance (TA) and funding needs have been determined/calculated for the first phase of the project. - The HCF "Treatment Zoning" plan (using GIS/Remote Sensing) has been revised/updated. - A detailed procurement and TA plan has been drawn up for the first phase of the project's implementation.

	Indicator	Baseline	Targets End of Project
Outcome 2.3: UPOPs releases reduced as a result of improved HCWM systems in supported HCFs	• % as compared to I-RAT baseline established at the start of the project (outcome 2.1) • Waste segregation improved by xx % • Number of HCFs that send their disinfected syringes to recyclers increased by xx % • Average HCF infectious waste volumes reduced by xx % • No of project HCFs practices composting increased by xx % • Percentage of project HCFs that have introduced non-incineration technologies xx % • Waste monitoring installed. • No. of incidences/accidents involving infectious waste reduced by xx % • Transportation of infectious and anatomical waste exclusively assumed by authorized vehicles. • Average costs for HCWM reduced by xx%	• At the primary healthcare level, immunization waste is either burned in the open (in rural areas) or in the case of Bishkek mixed with regular household waste ending up on the Bishkek dumpsite or transported to a boiler house for low temperature incineration. • At Bishkek hospital level in Bishkek, the primary method of treating infectious medical waste is by chemical disinfection after which the waste ends up on the Bishkek dumpsite, which is continuously on fire, leading to the formation of dioxins and furans. • Common HCWM challenges faced by HCFs are: - Lack of awareness on the ^[1]_{SEP} dangers of HCW and the risks to human health and the environment in combination with absence of training opportunities. - Absence of sufficient and adequate technologies, devices and supplies to manage HCW soundly. - Sub-optimal operation of the HCWM model in HCFs where treatment technologies have been installed. ^[1]_{SEP} - Inadequacies in waste flows and ^[1]_{SEP} transportation of waste on the premises of HCFs - Cluster-hub system and HCW transportation system not yet operational. • Certain HCFs have a contract with a local recycler, which collects chemically disinfected syringes. • Although the SRC/MoH has successfully demonstrated composting at the rural level, none of the HCFs in Bishkek undertake composting. • Transportation of infectious HCW in the city of Bishkek is extremely inadequate, more often than not, using passenger cars or ambulances, which are also used to transport patients, healthcare staff, etc. • The City Health Department has received 1 transport vehicle through the phase I Global Fund project, which will soon be used to transport infectious HCW, between HCFs and treatment hubs. However the delivery/pick-up schedule has not yet been worked out in detail.	• MoUs signed between project and each HCF. • HCF staff trained in best practices for HCWM, including: - Responsibilities for HCWM assigned and waste management committees operationalized in each project HCF. - HCWM plans drawn up for each project HCF. - Xx HCFs and xxx staff trained in best HCWM practices related to waste identification, classification, segregation, labelling, packaging, storage, treatment, transportation, etc. at HCF level. - Xx managers and professionals trained on HCWM related procurement, accounting and budgeting; monitoring and reporting; and HCWM related record keeping (incidents, accidents, waste recording, etc.) ^[1]_{SEP} • 8 Bishkek hospitals and 3 polyclinics supported in refurbishing/preparing waste storage locations and locations for technology installation • Non-incineration technologies and HCWM supplies procured and installed for all project HCFs (11 HCFs in Bishkek, 1 zone and 100 FAPs): - Project HCFs equipped with HCWM supplies and non- incineration technologies - xx Global Fund recipient HCFs equipped with additional non- incineration technologies/HCWM supplies - zone equipped with sufficient treatment capacity/HCWM supplies (including the zone's hub treatment facility, its satellites as well as decentralized facilities). ^[1]_{SEP} - (Pilot) 100 FAPs in rural areas equipped with pressure cookers and necessary capacity building and HCWM supplies. • Standard Operating Procedures (SOPs) for the procured technologies prepared/revised. • Autoclave operators and other staff trained on SOPs, safety precautions, and quality control of the new technology. • Draft cost-sharing agreements for infectious waste treatment between service HCF and recipient HCF developed. • Optimum transportation routes determined • Staff involved in infectious waste transportation trained on the safe handling of HCW and Mercury waste • Project HCF staff trained in composting and plastics recycling. • Environmentally sound agreement reached with the Bishkek Mayor's office and the EBRD on the handling of disinfected HCW and Hg containing wastes at the new engineered Bishkek Landfill
Outcome 2.4: National training modules on HCWM	• Training possibilities/opportunities on HCWM offered by national	• Lack of a systematic approach to training medical and nursing staff on HCWM resulting in low awareness on the dangers of HCW and the risks to human health and the environment.	• National training modules developed by Preventive Medicine as well as those used by the National Training Centre have been revised/improved based on the WHO Healthcare Waste Project Global Training

	Indicator	Baseline	Targets End of Project
available and being used by the MoH (preventive Medicine), national training centers and Medical Faculties.	teaching institutions and schools.	- As part of the Global Fund Phase II project, the MoH institute "Preventive Medicine" has developed training modules, with support of UNICEF and will be providing this training to various target groups. - The "National Training Center" provides post-graduate training (continuous professional development) as well as educational training for healthcare staff, which contains modules on HCWM.	Materials - MoUs signed between the project and medical university faculties and nursing schools. - Training modules on HCWM designed and subsequently embedded in the curricula of the Medical Academy as well as the Medical Facility of the Kyrgyz- Russian-Slavik University and potentially a number of nursing schools.
Component 3: Implement Mercury Waste Management And Reduction Activities For The City Of Bishkek			
Outcome 3.1: Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg-free or lower level Hg products	A regulatory framework pertaining to the management of Mercury containing products is developing and available.	- In Kyrgyzstan, the management of Mercury containing products is not being addressed, whether in the healthcare sector or any other sector. - When products that contain Mercury break or need to be disposed of, such wastes are being discarded along with regular municipal waste. - No special measures are taken to protect healthcare facility staff, the environment or people/communities coming in close contact with such wastes. - There are no restrictions on the importation of high Hg-content lamps (CFLs, tubes) or Hg- containing medical devices. - Guidelines on the management, storage and disposal of Hg containing lamps are not available. - Maximum permissible concentration (MAC) for metallic mercury (Hg) are set for air, water and soil.	- National action plan on the LCM of Hg containing products developed. - National standards/guidelines on the management, storage and disposal of mercury containing products developed for large public and private entities, as well as HCFs. - MSP degree drafted prescribing a phased approach/total phase-out for the use of Hg-containing thermometers. - EU RoHS directives for lighting products transposed into national regulations through a degree. - Assessment of potential Cost- Recovery Mechanisms for the future disposal/treatment of Mercury containing products conducted.
Outcome 3.2: Improved Mercury management practices at HCFs and phase-out of Mercury containing thermometer	80% of project HCFs have introduced Mercury-free devices.	- Mercury containing sphygmomanometers have been phased-out approximately 10 years ago, however Mercury containing thermometers are still in wide use. In 2011 and 2012, respectively 203,121 and 116,034 were imported. - When products that contain Mercury break or need to be disposed of, such wastes are being discarded along with regular municipal waste. - Currently there are no safeguarding procedures in place at HCF level to ensure the safe clean-up, management and storage of broken thermometers or other mercury containing wastes, as such exposing healthcare facility staff, patients or visitors to Hg exposure.	- Hg baseline assessments completed for each project HCF (as part of the I-RATs, see Activity 2.1.1). - Mercury management and phase- out plans developed and implemented for each project HCF (included in the development of HCWM plans as part of Activity 2.3.2). 500 medical personnel trained in the clean-up, storage and safe transport of Hg wastes. - Training video produced on "Cleanup and Temporary Storage of Mercury Waste for Health Care Facilities" in Kyrgyz and Russian and used in training activities. - Study on staff preferences for cost- effective Hg-free alternatives conducted at a number of project HCFs. - Mercury-free thermometers introduced at the project's HCFs and personnel trained in their use. - Emergency response teams (Ministry of Emergencies) trained on how to respond to large Mercury spills.
Outcome 3.3: Intermediate and long-term storage options for Mercury containing	Phased-out Mercury containing thermometers have been safely disposed	Currently such wastes end up at the Bishkek landfill site, which is not engineered and doesn't have any leachate control, allowing Mercury to seep into the leachate and end up polluting nearby soil and water resources.	Assessment for short-term, interim and long-term storage and disposal options for Mercury containing spent products and Hg containing wastes completed (e.g. Khaidarkan Mercury Mine and Plant, EBRD hazardous cell, EBRD demercurization plant,

	Indicator	Baseline	Targets End of Project
wastes identified	of as possible within the limitations of the infrastructure present in Kyrgyzstan.	The dumpsite is also not fenced and waste pickers living on adjacent plots, have free access to pick through the waste, and as such expose themselves and their families to Mercury containing wastes.	interim storage, disposal abroad, etc.). Treatment/Disposal solution identified for the Mercury-containing equipment phased-out as part of the project.
Component 4: Monitoring, Adaptive Feedback, Outreach And Evaluation			
Outcome 4.1: Project's results sustained and replicated	Number of high quality monitoring and evaluation documents prepared during project implementation	No documents in baseline situation.	4 Quarterly Operational Reports submitted to UNDP each year 1 annual APR/PIR submitted to UNDP each year. 1 Mid-term project review. M&E results and insights are applied to provide feedback to the project coordination process, and have informed/redirected the design and implementation of the second phase of the project. - The MTE will inform on how many additional technologies would have to be purchased and how much additional capacity building would have to be carried out in the second half of the project. 1 Final evaluation. - MTE and FE must include a lessons learned section and a strategy for dissemination of project results. - Lessons learned and best practices are accumulated, summarized and replicated at the country level.

Evaluation Ratings

As per the requirements of the TOR for Terminal Evaluations, **Table 3** provides the ratings for relevance, effectiveness, efficiency, sustainability, and impacts of the project. The Table also provides the ratings for Monitoring and Evaluation (M&E), Implementing Agency (IA) and Executing Agency (EA) Execution, and Assessment of Outcomes. Ratings have been provided using the GEF rating scale.

Table 3: Terminal Evaluation Ratings

1. Monitoring and Evaluation	Rating	2. Implementing Agency (IA) & Executing Agency (EA) Execution	Rating
M&E design at entry	S	Quality of UNDP Implementation	S
M&E Plan Implementation	S	Quality of Execution - Executing Agency	S
Overall quality of M&E	S	Overall quality of Implementation / Execution	S
3. Assessment of Outcomes	Rating	4. Sustainability	Rating
Relevance	R	Financial resources	L
Effectiveness	S	Socio-political	L
Efficiency	S	Institutional framework and governance	L
Overall Project Outcome Rating	S	Environmental	L
		Overall likelihood of sustainability	L

Attainment of results

Summary of the assessment regarding the attainment of results and objectives of different Components / Outcomes of the project is given in **Table 4**.

Table 4: Summary of Attainment of Results / Outcomes of the project

Component	Outcome	TE Rating ²
Component 1: Strengthening of the National Regulatory and Policy Framework for Health Care Waste Management	1.1 The policy framework for Health Care Waste Management enhanced	Achieved Satisfactory
	1.2 The regulatory and policy framework for Health Care Waste Management enhanced.	Achieved Satisfactory
Component 2: Implementation of Best Available Technologies (BAT), Best Environmental Practices (BEP) for HCWM Systems	2.1: Accurate insight in the HCWM situation at each of the HCFs supported by the project.	Achieved Satisfactory
	2.2: Allocation of HCWM technologies, devices, supplies and Technical Assistance (TA) needs determined for each HCF	Achieved Satisfactory
	2.3: UPOPs releases reduced as a result of improved HCWM systems in supported HCFs	Not assessed separately
	2.4: National training modules on HCWM available and being used by the MoH (preventive Medicine), national training centers and Medical Faculties	Achieved Satisfactory
Component 3: Implement Mercury Waste Management and Reduction Activities for the City of Bishkek	3.1: Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg- free or lower level Hg products	Achieved Satisfactory
	3.2: Improved Mercury management practices at HCFs and phase-out of Mercury containing thermometer	Achieved Satisfactory
	3.3: Intermediate and long-term storage options for Mercury containing wastes identified	Achieved Satisfactory

The achievement of project objectives is also rated as Satisfactory

Summary of conclusions

For addressing the emissions of UPOPs and release of mercury, the project successfully carried out the interventions in one of the major sources of such emissions and releases. Incineration and open burning of health-care waste is one of the main sources of dioxins emissions and mercury release. Mercury spills due to breakage of mercury containing thermometers followed by inappropriate disposal is one of the main pathways through which mercury enters the environment.

The objective of the project was to demonstrate and promote best practices and techniques for health-care waste management which at the same time can reduce the emission of UPOPs and mercury, and reduce waste borne diseases and risks to health workers in the health care facilities. The project has successfully achieved its objectives.

In order to achieve cooperation from the national counterparts in Kyrgyzstan, the global environmental objectives of the project were linked with the quality and effectiveness of the delivery of health services in the country. The rationale of the project was that best practices for health-care waste management lead to improvement in infection control and occupational safety and reduce nosocomial infections.

By improving segregation of healthcare waste and by demonstrating use of non incineration technologies for treatment of HCW the project led to reduction in the emission of UPOPs. Thanks to the project, Kyrgyzstan now has new regulations for HCWM. The new regulations will ensure the implementation of environmentally safe waste management at hospital facilities and the disposal by means of BAT/BEP compliant technologies.

Training and capacity building was one of the major efforts of the project. In addition to people who were trained within the project timeframe, it is important to remember that under the project, curricula

² Ratings for: Attainment of Results; Highly Satisfactory (HS): no shortcomings; Satisfactory (S): minor shortcomings; Moderately Satisfactory (MS): moderate shortcomings; Moderately Unsatisfactory (MU): significant shortcomings; Unsatisfactory (U): major problems; Highly Unsatisfactory (HU): severe problems

in the field of HCWM have been established in a couple of educational institutes, due to which the training will continue in the future after the project ends.

Recommendations

Recommendation 1: For future project designs: In the results-framework of the project some of the indicators / targets are in percentage terms (please see indicators and targets for Outcome 2.3), with the figures not specified. Also the figures of total number / population on which these numbers are to be applied are not available. It is because of this reason that assessment regarding achievement of results against indicators / targets becomes difficult in quantitative terms and one has to go for qualitative aspects while assessing the achievement of results. It is recommended that in case targets are fixed in percentage terms, the method to determine the number on which these % are to be applied also be provided.

Recommendation 2: A periodic inspection of the practices being followed regarding disposal of medical waste at HCFs and period training of the responsible staff would help to ensure that the serialization is happening as per the requirements.

Recommendation 3: The project has very successfully addressed the issue of handling and disposal of the syringes. However, there is still the problem of disposal of the medical waste made out of PVC (transfusion kits, catheters, oxygen masks, IV fluid bags etc.). It is recommended that the government invite private sector partners to establish recycling facility for PVC containing medical waste. As the backbone for sterilization and collection of the medical waste is already there, there won't be any incremental cost for recycling PVC containing medical waste. On the other hand, it is likely to provide some revenue to the Health Care Facilities.

Recommendation 4: The project has supported replacement of mercury containing thermometers with the electronic thermometers at the healthcare facilities. A proposal to replace the mercury containing thermometers at the household levels may also be considered.

Recommendation 5: The syringes being used presently has a rubber component (in the plunger part of the syringe), at the end of the recycling facility these rubber component is manually removed from the plastic part before the recycling. This requires deployment of human resources (cost). It also exposes the workers to a potential health risk. It is recommended that the government may consider a proposal to allow the use of syringes without the rubber part. This may be made mandatory. This will reduce an additional step at the recycling facility and will also take care of any potential health risk to the workers.

Recommendation 6: The recycling facility currently make products like flower pots etc. out of the plastic recovered out of the syringes. It is recommended that a proposal to produce the containers (using the recovered plastics) for collecting and sterilizing the syringes at hospitals. The container and the syringes after sterilization can then be taken directly to the recycling machine. Without the need to manually empty and transfer the waste syringes a number of times. This will reduce the efforts and will also take care of any potential exposure to the health risks.

1. INTRODUCTION

1.1 Context, purpose of the terminal evaluation and objectives

With the project ‘**Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan**’ reaching the end of its implementation, a ‘Terminal Evaluation (TE)’ of the project has been carried out. This is as per the standard practice for all UNDP-supported GEF-financed projects. The target audience for the Terminal Evaluation were the funding agencies, project partners and beneficiaries, UNDP CO, UNDP at regional and HQ levels and UNDP Evaluation Office.

The objective of the project was to implement and adopt ‘Best Environmental Practices’ (BEP) and Best Available Technologies (BAT) in healthcare facilities throughout the City of Bishkek to improve management, treatment, and disposal of the healthcare waste, as well as support a number of rural health posts in Chui and Issykul Oblast. The project was to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention on Persistent Organic Pollutants (POPs) by adopting environmentally friendly treatment options for healthcare waste, with consequent reduction in the emissions of ‘Unintended Persistent Organic Pollutants’ (UPOPs). One of the other objective of the project was to reduce mercury releases from the health care sector (generally caused by the breakage of Mercury containing thermometers), by supporting the phase out of Mercury containing medical equipment and introduction of the Mercury-free alternatives. This activity was to assist Kyrgyzstan in meeting its obligations to the Minamata Convention on Mercury (once the convention enters into force).

The UNDP Kyrgyzstan CO engaged an independent consultant (Dinesh Aggarwal, India) to carry out the TE of the project as per the scope and terms of reference presented in **Annex A**. The broader defined objectives of the TE were as follows:

- To compare planned Outcomes of the project to actual Outcomes
- Identify (if applicable) the causes and issues which contributed to non-achievement of the targets of the project.
- Draw lessons that can both improve the sustainability of benefits from the project, and aid in the overall enhancement of UNDP programming.

1.2 Scope and methodology of the terminal evaluation

The evaluation has been carried out in accordance with the Guidance for Conducting TEs of UNDP-supported GEF-financed Projects, as provided in the ‘Handbook on Planning, Monitoring and Evaluating for Development Results’. Prior to the start of the TE, an inception report was prepared and shared with the UNDP CO at Kyrgyzstan and the project team. The inception report outlined the approach and methodology to be followed while carrying out the evaluation. It also provided the timelines for the evaluation. The inception report included a table providing the criteria for the evaluation and the list of main evaluation questions. The table of TE criteria and the questions is given in **Annex B**. Accordingly, the methodology for carrying out the TE was comprised of following activities:

- **Review of Documents:** Review of ‘Project Design Document’ and all relevant sources of information including documents prepared during the preparation phase. The review of documents included a review of financial data, mid-term evaluation report, sample of back to office reports, samples of project communication material etc. **Annex C** provides the list of documents reviewed.
- **Mission to Kyrgyzstan, interviews with stakeholders and site visits.** A mission to Kyrgyzstan was undertaken from 9th July 2018 to 13th July 2018. The mission included a briefing by the UNDP PMU and the project team. The mission concluded with a presentation

regarding the initial findings. During the mission, interviews with different stakeholders and project participants were carried out. The mission included visits to a couple of sites where the project has supported installation of waste management facilities. **Annex D** provides the overall schedule of the missions and the stakeholders interviewed during the mission. The mission also served the purpose of collecting some additional documents to support evidence based evaluation. Some of the documents to be reviewed were also received after the mission.

The assessment of project performance has been carried out based on the expectations set out in the Results Framework of the project (as provided in the Project Document), which provides performance and impact indicators for project implementation. While doing so, the set of indicators, as mentioned in the result framework of the project along with the corresponding sources for verification were taken into account. While carrying out the evaluation, emphasis has been placed on evidence-based information that is credible, reliable and useful. As stipulated before, some additional documents supporting the achievements of the project were collected during the mission to Kyrgyzstan.

The review of documents provided the basic information regarding the activities carried out to attain the desired outcomes and the actual achievements. However, the mission was needed to verify the information, get some missing data and to learn about the opinion of the stakeholders and project participants to interpret the information. During the mission, the interviews with the key stakeholders' / project participants were based on open discussion to allow respondents to express what they felt were the main issues. This was followed by more specific questions on the issues mentioned. During the interviews, the evaluation criteria and the questions (Please see **Annex B**) were used as the check list to raise relevant questions and issues.

The evaluation has been conducted in accordance with the principles outlined in the United Nations Evaluation Group 'Ethical Guidelines for Evaluation' as given in **Annex E**.

1.3 Structure of the Terminal Evaluation report

The structure of the report is as per the format suggested in the Terms of Reference for the TE. However, the contents of the chapter on findings have been split into three separate chapters due to the size of the text.

The report starts with a chapter providing an introduction which is followed by the chapters of project description and findings. The last chapter of the report provides the conclusions and the recommendations. Additional information is provided in the Annexes to the report. The 'Executive Summary' of the report is provided in the beginning of the report and the rest of the report is organized as follows:

- Chapter 1: Introduction to the project
- Chapter 2: Project description and development context
- Chapter 3: Findings: Project design and formulation
- Chapter 4: Findings: Project implementation
- Chapter 5: Findings: Project results
- Chapter 6: Conclusions, recommendations and lessons

As has been stipulated before, the findings have been organized in three chapters (instead of one single chapter as suggested in the TOR) due to the size of the text. **Annex B** shows where the main criteria and questions of the TE can be located in different sections of the report.

2. PROJECT DESCRIPTION AND DEVELOPMENT CONTEXT

2.1 Project start and duration

The project started implementation on 3rd July 2014 (date of signing of the project document), with the duration of four years. Accordingly, the target end date for the project was 3rd July 2017. The inception meeting of the project happened in a timely manner on 22nd August 2014. The project was granted a no cost extension on one year to 31st July 2018.

2.2 Problems that the projects sought to address

The main problem that the project sought to address was the harmful environmental (both local and global) impacts and health impacts due to improper treatment of HCW. The project also sought to address the problem of release of Hg to the atmosphere (and the consequent harmful environmental and health impacts) due to breakage of thermometers used in the HCFs

2.3 Immediate and development objectives of the project

The immediate and development objective of the project is the provision of health care in Kyrgyzstan in an environmentally friendly manner by minimizing the adverse impacts of the waste generated in the HCFs.

2.4 Baseline and expected results

In Bishkek, in the baseline the primary method of treating infectious medical waste in hospitals has been disinfection by chemical decontamination (sodium hypochlorite solutions). Different types of infectious waste (syringes, bandages, etc.) were soaked for variable periods of times in sodium hypochlorite solutions of a certain concentration. After the required disinfection period, the chlorine solution used to be discarded in the sink/regular sewerage and the waste material used to be collected along with other municipal solid wastes and used to find its way to the landfills. The dumpsite in generally is continuously on fire caused due to generation of methane due to anaerobic decay of organic matter in the waste. The burning of medical waste used to lead to the formation of dioxins and furans, because of plastics in it and the chlorinated disinfectants in it. Further, as the dumpsite is not engineered and not fenced, waste pickers living on adjacent plots, used to get exposed to improperly treated waste.

In the baseline, treatment of immunization/vaccination waste followed a slightly different practice. At the primary healthcare level, immunization waste, collected in sharps containers or makeshift boxes/containers, used to be either burned in the open (in rural areas) or in the case of Bishkek either mixed with regular household waste ending up on the Bishkek dumpsite or transported to a boiler house for incineration.

In the baseline, accidental breakage of mercury containing thermometers in the HCFs used to release the mercury to the atmosphere leading to adverse local and global environmental and health impacts.

Table 5 provides the details of the baseline situation and the expected results of the project.

Table 5: Baseline and expected results

Project objective	Baseline	Expected result
UPOPs emissions reduced as a result of improved HCWM treatment systems used by HCFs	In Kyrgyzstan total releases of dioxins in 2003 were 30.5 g-TEQ. Out of this the contribution made by incineration of medical wastes was 7 g- TEQ.	Reduction in UPOPs emissions by 3-TEQ/yr.
Country capacity built to effectively phase out and reduce releases of POPs	The current regulatory framework does not cover all medical waste management challenges, which the country is facing, while existing guidelines do not have any legal status and as such are not enforceable.	• Legal and regulatory framework enhanced through the revision of the national HCWM strategy • Development of a national strategy for anatomical waste • Development of standards and degrees pertaining to HCWM.
Mercury emissions reduced as a result of the phase-out of Mercury containing medical thermometers and improved management of Mercury containing wastes	Based on 2011 and 2012 import figures, between 58 and 305 kg of Mercury, contained in medical thermometers, is imported yearly	Sustained Mercury reductions of approximately 160 kg Hg/year

2.5 Main stakeholders

The project's main stakeholders are;

- Ministry of Health
- State Agency for Environmental Protection and Forestry
- Healthcare Entities
- UNDP Kyrgyzstan's Programme Management Unit and Country Office
- Ministry of Emergency Situations
- Swiss Red Cross
- UNICEF,
- World Health Organization (WHO)
- Department for Public Health and Environment
- Municipality of Bishkek/Mayor's office
- Ministry of Economic Regulations and Trade
- Recycling companies
- Health care facilities
- NGO
- Training institutions (Universities)
- Private sector (e.g. service providers)
- Professional associations and health alliances

3. FINDINGS: PROJECT DESIGN AND FORMULATION

The main questions for TE were: (please see Annex B for the evaluation questions)

- Were the project's objectives and outcomes clear, practicable and feasible within its time frame?
- Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed?
- Were lessons from other relevant projects properly incorporated in the project design?
- Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval?
- Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry?
- Were the project assumptions and risks well-articulated in the PIF and project document?
- Whether the planned outcomes were "SMART" (specific, measurable, achievable, relevant and time-bound)?

3.1 Analysis of Log Frame / Results Framework

The objective of the project was to implement Best Environmental Practices (BEP) and Best Available Technologies (BAT) in the health-care sector to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention to reduce emissions of UPOPs as well as reduce the Mercury releases. To achieve this objective, the project was organized into three components³ with each of the three Components having their respective set of projected set of Outcomes and the set of activities which are detailed in Table 6. While Components 1 and 2 were focused on management of health care waste leading to the reduction in the emissions of UPOPS, Component 3 was targeted to reduction in the release of Hg.

Table 6: Components, Outcomes and Activities of the Project (As per Project Document)

Component	Outcome	Activities
Component 1: Strengthening of the National Regulatory And Policy Framework for Health Care Waste Management	Outcome 1.1: The policy framework for Health Care Waste Management enhanced	Activity 1.1.1: Revise, update and finalize the national strategy on Healthcare Waste Management Activity 1.1.2: Prepare a Strategy for Anatomical Waste
	Outcome 1.2: The regulatory framework for Health Care Waste Management enhanced	Activity 1.2.1: Development of standards on technologies for the processing and final disposal of HCW Activity 1.2.2: Development of standards on HCW in immunization offices Activity 1.2.3: Development of standards on DoD Activity 1.2.4: Development of standards on treatment of chemical and pharmaceutical waste Activity 1.2.5: Development of standards on monitoring HCWM practices Activity 1.2.6: Development of job descriptions for those responsible for HCWM at HCFs Activity 1.2.7: Drafting of an import ban on PVC containing syringes and other medical products for which cost effective alternative are available
Component 2: Implementation of Best Available Technologies (BAT), Best Environmental Practices	Outcome 2.1: I-RATs completed in HCFs	Activity 2.1.1: Conduct I-RATs in each of the HCFs supported by the project
	Outcome 2.2: Allocation of HCWM technologies, devices, supplies	Activity 2.2.2: Calculate for each HCF HCWM equipment, capacity and funding needs that are required for phase I of the project Activity 2.2.3: Updating of HCF "Treatment Zoning" plan (using GIS/Remote Sensing)

³ Project Documents provides for four components with the fourth components being monitoring and evaluation. For the purpose of the Terminal Evaluation, monitoring and evaluation has not been considered as a separate component of the project

Component	Outcome	Activities
(BEP) For HCWM Systems	and technical assistance determined for each HCF	
	Outcome 2.3: UPOPs and Green House Gas Emissions (GHG) reduced as a result of improved HCWM systems in supported HCFs	Activity 2.3.1: MoUs signed between project and each HCF Activity 2.3.2: HCF staff trained in best practices for HCWM Activity 2.3.3: Support 8 hospitals and 3 polyclinics located in Bishkek in refurbishing waste storage locations and prepare locations for technology installation Activity 2.3.4: Procure/install non-incineration technologies and HCWM supplies. Activity 2.3.5: Prepare/revise Standard Operating Procedures (SOPs) for the procured technologies. Activity 2.3.6: Train autoclave operators and other staff involved on SOPs, safety precautions, and quality control of the new technology Activity 2.3.7: Train HCFs and staff in composting and preparation of disinfected syringes for supply to plastic/metal recyclers (e.g. introducing needle cutters, disinfection by autoclave/pressure cooker, safe storage, transport and subsequent hand-over to recyclers). Activity 2.3.8: Develop draft cost-sharing agreements for infectious waste treatment between hub “service” HCF and “client” HCF. Activity 2.3.9: Support the MoH, City Health Department (in charge of HCW transport within zones) in determining optimum transportation routes (using GIS/Remote sensing) to reduce transportation costs Activity 2.3.10: Explore through the City Health Department/MoH the possibility of involving private sector involvement (through a PPP arrangement) to take on the transport of HCW within zones Activity 2.3.11: Train staff involved in transportation on the safe transportation and handling of Healthcare Waste and Mercury Waste
	Outcome 2.4: National training modules on HCWM available and being used by the MoH (Preventive Medicine), national training centres and Medical Faculties.	Activity 2.4.1: Revise national training modules developed by Preventive Medicine as well as those used by the National Training Centre based on the GEF/UNDP/WHO/HCWH Healthcare Waste Project Global Training Materials Activity 2.4.2: Design training modules on HCWM and subsequently embed these in the curricula of the Medical Academy as well as the Medical Facility of the Kyrgyz-Russian-Slavik University and potentially a number of nursing schools
Component 3: Implement Mercury Waste Management And Reduction Activities For The City Of Bishkek	Outcome 3.1: Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg-free or lower level Hg products	Activity 3.1.1: Develop a national action plan on the LCM of Mercury containing products. Activity 3.1.2: Develop national standards/guidelines on the management, storage and disposal of mercury containing products developed for large public and private entities, as well as HCFs. Activity 3.1.3: Develop a MSP degree prescribing a phased approach/total phase-out for the use of Hg-containing thermometers. Activity 3.1.4: Transpose EU RoHS directives for lighting products into national regulations through a degree (restricting importation of high Hg content lamps). Activity 3.1.5: Conduct an assessment of potential Cost-Recovery Mechanisms for future disposal/treatment of Mercury

Component	Outcome	Activities
		containing products.
	Outcome 3.2: Improved Mercury management practices at HCFs and phase-out of Mercury containing thermometer	Activity 3.2.1: Complete Hg baseline assessments for each project HCF (as part of the I-RATs, see Activity 2.1.1). Activity 3.2.2: Develop and implement a Mercury management and phase-out plans for each project HCF (included in the development of HCWM plans as part of Activity 2.3.2). Activity 3.2.3: Train 500 medical personnel in the clean-up, storage and safe management of Mercury wastes. Activity 3.2.4: Produce a training video on "Clean up and Temporary Storage of Mercury Waste for Health Care Facilities" in Kyrgyz and Russian and use it in training activities. Activity 3.2.5: Conduct a study on staff preferences on cost-effective Mercury-free alternatives at some of the project HCFs. Activity 3.2.6: Procure and introduce Mercury-free thermometers (types/brands will be determined based on the outcomes of the staff-preference study) for the project's HCFs and train healthcare staff in their use. Activity 3.2.7: Train emergency response teams (Ministry of Emergencies) on how to respond to large Mercury spills.
	Outcome 3.3: Intermediate and long-term storage options for Mercury containing wastes identified	Activity 3.3.1: Conduct an assessment for short-term, interim and long-term storage and disposal options for Mercury containing spent products and Mercury containing wastes. Activity 3.3.2: Identify a solution for the Mercury-containing equipment phased-out as part of the project.

The log-frame of the project, the indicators for monitoring and verification of the achievement (along with the baseline and target values for the indicators) were as given in Table 7.

Table 7: Project Log-Frame (as per project document)

	Indicator	Baseline	Targets End of Project
Project Objective: Implement best environmental Practices (BEP) and Best Available Technologies (BAT) in the health-care sector to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention to reduce UPOPs as well as Mercury releases.	UPOPs emissions reduced as a result of improved HCWM treatment systems used by HCFs benefitting from the project.	Kyrgyzstan's NIP, calculated that the total releases of dioxins in 2003 were 30.5 g-TEQ. The majority of releases were indicated to be the result of combustion practices, with the greatest contribution made by incineration of medical wastes (7 g-TEQ)	In total the project expects to reduce UPOPs emissions by 3- TEQ/yr.
	Country capacity built to effectively phase out and reduce releases of POPs	The current regulatory framework does not cover all medical waste management challenges, which the country is facing, while existing guidelines do not have any legal status and as such are not enforceable.	Legal and regulatory framework enhanced through the revision of the national HCWM strategy, the development of a national strategy for anatomical waste, and the development of standards and decrees pertaining to HCWM.
	Mercury emissions reduced as a result of the phase-out of Mercury containing medical	No national Mercury Assessment has been undertaken yet, but based on 2011 and 2012 import figures, between 58 and 305 kg of Mercury, contained in medical thermometers, is imported yearly.	The phase-out of Mercury containing thermometers will result in sustained Mercury reductions of approximately 160 kg Hg/year.

	Indicator	Baseline	Targets End of Project
	thermometers and improved management of Mercury containing wastes.		
COMPONENT 1: Strengthening Of The National Regulatory And Policy Framework For Health Care Waste Management			
Outcome 1.1 The policy framework for Health Care Waste Management enhanced	- National Health Care Waste Management Strategy revised and updated. - National Strategy for Anatomical Waste developed.	- Although a National Strategy (2008-2012) on HCWM was elaborated, it has never been approved/adopted due to lack of funding for its implementation. - The collection, safeguarding and transport of anatomical wastes is highly inadequate.	- National Strategy on Healthcare waste management in the Kyrgyz Republic finalized. - National Strategy for Anatomical Waste drafted.
Outcome 1.2 The regulatory and policy framework for Health Care Waste Management enhanced.	Number of approved and adopted standards and degrees developed as part of the project.	- HCWM related legislation is merely functioning as a framework and reflects the general requirements to prevent adverse effects on health and the environment. However, most of these are guidelines do not have any legal status and as such are not enforceable. - The current regulatory framework does not cover all medical waste management challenges, which the country is facing. - A major challenge remains the implementation and enforcement of regulations and guidelines, which are often issued without providing HCFs or stakeholders with any support or capacity building to enable them meet the requirements set-out in these regulations /guidelines.	- Standards on technologies for the processing and final disposal of HCW developed. - Standards on HCW in immunization offices developed. - Standards on DoD developed. - Standards on treatment of chemical and pharmaceutical waste developed. - Standards on monitoring HCWM practices developed. - Job descriptions for those responsible for HCWM at HCFs developed. - Import ban drafted on PVC containing syringes and other medical products for which cost- effective alternative are available.
COMPONENT 2: Implementation Of Best Available Technologies (Bat), Best Environmental Practices (BEP) For HCWM Systems			
Outcome 2.1 Accurate insight in the HCWM situation at each of the HCFs supported by the project.	I-RATs completed for each of the HCFs supported by the project	Some baseline information is available mainly from prior HCWM assessments as well as from the project's PPG phase.	- All HCFs have participated in a HCWM assessment. - An accurate UPOPs and Hg baseline has been established for each HCF
Outcome 2.2: Allocation of HCWM technologies, devices, supplies and Technical Assistance (TA) needs determined for each HCF	Detailed procurement and TA plan for the implementation of Phase I. Updated Zoning Plant	- Some information is available on the type of TA and equipment/supplies that would be required for HCFs, however detailed information for each HCFs will be required to draw up a sound procurement and TA plan. - A Zoning Plan was developed in 2012 but is currently outdated. The Zoning Plan will also require revision to reflect the outcomes of the I-RATs.	- For each HCF, HCWM equipment, Technical Assistance (TA) and funding needs have been determined/calculated for the first phase of the project. - The HCF "Treatment Zoning" plan (using GIS/Remote Sensing) has been revised/updated. - A detailed procurement and TA plan has been drawn up for the first phase of the project's implementation.
Outcome 2.3: UPOPs releases	% as compared to I-RAT	At the primary healthcare level, immunization waste is either burned in	- MoUs signed between project and each HCF. - HCF staff trained in best practices for

	Indicator	Baseline	Targets End of Project
reduced as a result of improved HCWM systems in supported HCFs	baseline established at the start of the project (outcome 2.1) - Waste segregation improved by xx % - Number of HCFs that send their disinfected syringes to recyclers increased by xx % - Average HCF infectious waste volumes reduced by xx % - No of project HCFs practices composting increased by xx % - Percentage of project HCFs that have introduced non-incineration technologies xx % - Waste monitoring installed. - No. of incidences/accidents involving infectious waste reduced by xx % - Transportation of infectious and anatomical waste exclusively assumed by authorized vehicles. - Average costs for HCWM reduced by xx %	the open (in rural areas) or in the case of Bishkek mixed with regular household waste ending up on the Bishkek dumpsite or transported to a boiler house for low temperature incineration. - At Bishkek hospital level in Bishkek, the primary method of treating infectious medical waste is by chemical disinfection after which the waste ends up on the Bishkek dumpsite, which is continuously on fire, leading to the formation of dioxins and furans. - Common HCWM challenges faced by HCFs are: - Lack of awareness on the ^[SEP] dangers of HCW and the risks to human health and the environment in combination with absence of training opportunities. - Absence of sufficient and adequate technologies, devices and supplies to manage HCW soundly. - Sub-optimal operation of the HCWM model in HCFs where treatment technologies have been installed. ^[SEP] - Inadequacies in waste flows and ^[SEP] - transportation of waste on the premises of HCFs - Cluster-hub system and HCW transportation system not yet operational. - Certain HCFs have a contract with a local recycler, which collects chemically disinfected syringes. - Although the SRC/MoH has successfully demonstrated composting at the rural level, none of the HCFs in Bishkek undertake composting. - Transportation of infectious HCW in the city of Bishkek is extremely inadequate, more often than not, using passenger cars or ambulances, which are also used to transport patients, healthcare staff, etc. - The City Health Department has received 1 transport vehicle through the phase I Global Fund project, which will soon be used to transport infectious HCW, between HCFs and treatment hubs. However the delivery/pick-up schedule has not yet been worked out in detail.	HCWM, including: - Responsibilities for HCWM assigned and waste management committees operationalized in each project HCF. - HCWM plans drawn up for each project HCF. Xx HCFs and xxx staff trained in best HCWM practices related to waste identification, classification, segregation, labelling, packaging, storage, treatment, transportation, etc. at HCF level. Xx managers and professionals trained on HCWM related procurement, accounting and budgeting; monitoring and reporting; and HCWM related record keeping (incidents, accidents, waste recording, etc.) ^[SEP] 8 Bishkek hospitals and 3 polyclinics supported in refurbishing/preparing waste storage locations and locations for technology installation - Non-incineration technologies and HCWM supplies procured and installed for all project HCFs (11 HCFs in Bishkek, 1 zone and 100 FAPs): - Project HCFs equipped with HCWM supplies and non- incineration technologies xx Global Fund recipient HCFs equipped with additional non-incineration technologies/HCWM supplies - zone equipped with sufficient treatment capacity/HCWM supplies (including the zone's hub treatment facility, its satellites as well as decentralized facilities). ^[SEP] (Pilot) 100 FAPs in rural areas equipped with pressure cookers and necessary capacity building and HCWM supplies. - Standard Operating Procedures (SOPs) for the procured technologies prepared/revised. - Autoclave operators and other staff trained on SOPs, safety precautions, and quality control of the new technology. - Draft cost-sharing agreements for infectious waste treatment between service HCF and recipient HCF developed. - Optimum transportation routes determined - Staff involved in infectious waste transportation trained on the safe handling of HCW and Mercury waste - Project HCF staff trained in composting and plastics recycling. - Environmentally sound agreement reached with the Bishkek Mayor's office and the EBRD on the handling of disinfected HCW and Hg containing wastes at the new engineered Bishkek Landfill
Outcome 2.4: National training modules on HCWM available and	Training possibilities/opportunities on HCWM offered by national teaching	- Lack of a systematic approach to training medical and nursing staff on HCWM resulting in low awareness on the dangers of HCW and the risks to human health and the environment. - As part of the Global Fund Phase II	National training modules developed by Preventive Medicine as well as those used by the National Training Centre have been revised/improved based on the WHO Healthcare Waste Project Global Training Materials

	Indicator	Baseline	Targets End of Project
being used by the MoH (preventive Medicine), national training centers and Medical Faculties.	institutions and schools.	project, the MoH institute “Preventive Medicine” has developed training modules, with support of UNICEF and will be providing this training to various target groups. The “National Training Center” provides post-graduate training (continuous professional development) as well as educational training for healthcare staff, which contains modules on HCWM.	- MoUs signed between the project and medical university faculties and nursing schools. - Training modules on HCWM designed and subsequently embedded in the curricula of the Medical Academy as well as the Medical Facility of the Kyrgyz- Russian-Slavik University and potentially a number of nursing schools.
Component 3: Implement Mercury Waste Management And Reduction Activities For The City Of Bishkek			
Outcome 3.1: Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg-free or lower level Hg products	A regulatory framework pertaining to the management of Mercury containing products is developing and available.	- In Kyrgyzstan, the management of Mercury containing products is not being addressed, whether in the healthcare sector or any other sector. - When products that contain Mercury break or need to be disposed of, such wastes are being discarded along with regular municipal waste. - No special measures are taken to protect healthcare facility staff, the environment or people/communities coming in close contact with such wastes. - There are no restrictions on the importation of high Hg-content lamps (CFLs, tubes) or Hg- containing medical devices. - Guidelines on the management, storage and disposal of Hg containing lamps are not available. - Maximum permissible concentration (MAC) for metallic mercury (Hg) are set for air, water and soil.	- National action plan on the LCM of Hg containing products developed. - National standards/guidelines on the management, storage and disposal of mercury containing products developed for large public and private entities, as well as HCFs. - MSP degree drafted prescribing a phased approach/total phase-out for the use of Hg-containing thermometers. - EU RoHS directives for lighting products transposed into national regulations through a degree. - Assessment of potential Cost- Recovery Mechanisms for the future disposal/treatment of Mercury containing products conducted.
Outcome 3.2: Improved Mercury management practices at HCFs and phase-out of Mercury containing thermometer	80% of project HCFs have introduced Mercury-free devices.	- Mercury containing sphygmomanometers have been phased-out approximately 10 years ago, however Mercury containing thermometers are still in wide use. In 2011 and 2012, respectively 203,121 and 116,034 were imported. - When products that contain Mercury break or need to be disposed of, such wastes are being discarded along with regular municipal waste. - Currently there are no safeguarding procedures in place at HCF level to ensure the safe clean-up, management and storage of broken thermometers or other mercury containing wastes, as such exposing healthcare facility staff, patients or visitors to Hg exposure.	- Hg baseline assessments completed for each project HCF (as part of the I-RATs, see Activity 2.1.1). - Mercury management and phase- out plans developed and implemented for each project HCF (included in the development of HCWM plans as part of Activity 2.3.2). 500 medical personnel trained in the clean-up, storage and safe transport of Hg wastes. - Training video produced on "Cleanup and Temporary Storage of Mercury Waste for Health Care Facilities" in Kyrgyz and Russian and used in training activities. - Study on staff preferences for cost- effective Hg-free alternatives conducted at a number of project HCFs. - Mercury-free thermometers introduced at the project's HCFs and personnel trained in their use. - Emergency response teams (Ministry of Emergencies) trained on how to respond to large Mercury spills.
Outcome 3.3: Intermediate and long-term storage options for Mercury containing wastes	Phased-out Mercury containing thermometers have been safely disposed of as possible	- Currently such wastes end up at the Bishkek landfill site, which is not engineered and doesn't have any leachate control, allowing Mercury to seep into the leachate and end up polluting nearby soil and water resources. - The dumpsite is also not fenced and waste	Assessment for short-term, interim and long-term storage and disposal options for Mercury containing spent products and Hg containing wastes completed (e.g. Khaidarkan Mercury Mine and Plant, EBRD hazardous cell, EBRD demercurization plant, interim storage, disposal abroad, etc.).

	Indicator	Baseline	Targets End of Project
identified	within the limitations of the infrastructure present in Kyrgyzstan.	pickers living on adjacent plots, have free access to pick through the waste, and as such expose themselves and their families to Mercury containing wastes.	Treatment/Disposal solution identified for the Mercury-containing equipment phased-out as part of the project.
Component 4: Monitoring, Adaptive Feedback, Outreach And Evaluation			
Outcome 4.1: Project's results sustained and replicated	Number of high quality monitoring and evaluation documents prepared during project implementation	No documents in baseline situation.	4 Quarterly Operational Reports submitted to UNDP each year 1 annual APR/PIR submitted to UNDP each year. 1 Mid-term project review. M&E results and insights are applied to provide feedback to the project coordination process, and have informed/redirected the design and implementation of the second phase of the project. - The MTE will inform on how many additional technologies would have to be purchased and how much additional capacity building would have to be carried out in the second half of the project. 1 Final evaluation. - MTE and FE must include a lessons learned section and a strategy for dissemination of project results. - Lessons learned and best practices are accumulated, summarized and replicated at the country level.

The planned Outcomes of the project and the corresponding set of indicators are 'SMART' enough, except for the indicators for Outcome 2.3. A comparison of Table 6 and Table 7 clearly indicate that for each of the Target in the log-frame there is a corresponding activity in Table 6 (except for the Targets for Outcome 2.3). As can be seen from Table 7 most of the indicators for Outcome 2.3 were in percentage terms and without any numbers. The same is **highlighted** in the Table. For the indicators for Outcome 2.3 there are issues in terms of measurability and other aspects. It is recommended that, for future project designs, in case targets are fixed in percentage terms, the method to determine the number on which these % are to be applied also be provided.

The project objectives and the three components of the project were clear, predictable and feasible within the implementation timeframe of the project. The Outcomes were predictable, means that at the time of project design the activities and the corresponding Outcomes specified in the 'Project Design' were leading to the desired Outcomes of the project.

3.2 Assumptions and Risks

At the time of the project design, a risk analysis of the project was carried out and this was included in the 'Project Document' (Annex 1 of the Project Document). Annex E provides the the identified risks and the corresponding risk mitigation options. The risks identified included those which could have impacted the achievement of the the results of the projects, as well as those which could have impacted the sustainability of the achieved results. The project design also identified a couple of environment related risks like increase in the emission of GHGs. The risk mitigation strategies provided in the project design has worked well.

The log-frame of the project included a set of assumptions for each of the project Outcomes. The assumptions which were made at the time of project design are given in Table 8. Also given in the table are the comments and observations at the time of 'TE' of the project.

Table 8: Assumptions made at project design (as per the Project Document)

Outcome	Assumptions
Outcome 1.1 The policy framework for Health Care Waste Management enhanced	• The project will be able to support the development of a strategy and accompanying Plan of Action that is based on actual HCWM funding available to ensure that the strategy can be adopted.
Outcome 2.1 Accurate insight in the HCWM situation at each of the HCFs supported by the project.	• All HCFs are willing to participate in baseline assessments and are open to sharing information related to their current HCWM practices.
Outcome 2.2: Allocation of HCWM technologies, devices, supplies and Technical Assistance (TA) needs determined for each HCF	• Ministry of Health would be willing to update/revise its zoning plan based on information, lessons-learned and experiences as they become available.
Outcome 2.3: UPOPs releases reduced as a result of improved HCWM systems in supported HCFs	• Project HCFs are willing to sign MoUs. • Treatment hubs and satellites located in the zone supported by the project are willing to sign cost-sharing agreements for the treatment of their infectious waste
Outcome 2.4: National training modules on HCWM available and being used by the MoH (preventive Medicine), national training centers and Medical Faculties.	• The Ministry of Health - Department on nosocomial infections and medical wastes, Preventive Medicine and UNICEF are open and willing to revise the national training modules based on the 2013 WHO “guidelines “Safe management of wastes from health-care activities” using the UNDP GEF Healthcare Waste Project Global Training Materials. • The Medical Academy, the Medical Facility of the Kyrgyz- Russian-Slavik University and the National Training Center are open to embedding/revising HCWM related modules in their programmes.
Outcome 3.1: Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg- free or lower level Hg products	• The Ministry of Health would be willing to start the phase-out of Mercury-containing thermometers. • The Ministry of Trade would be willing to introduce import restriction on high-level Mercury containing energy saving lamps.
Outcome 3.2: Improved Mercury management practices at HCFs and phase-out of Mercury containing thermometer	• Healthcare facilities participating in the project are open to participating in the staff preference studies and subsequently phasing out Hg-containing thermometers and replacing them with Mercury-free alternatives. • Cost-effective Hg-free alternatives for medical devices and low Hg content CFLs and tubes are available in the country. • As co-financing, facilities allocate adequate storage space for interim Hg-waste storage, appoint waste management committee members, and allocate staff time to participate in training on Hg LCM, staff preferences study as well as the use of Hg-free alternatives.

Outcome	Assumptions
Outcome 3.3: Intermediate and long-term storage options for Mercury containing wastes identified	• Khaidarkan Mercury Mine and Plant would be willing to and has the capacity to recycle the Hg from the thermometers. • The Bishkek Mayor's office and the EBRD are willing to accommodate the thought for a specially allocated cell for hazardous waste or a demercurization facility. • By the time the project comes to an end, the construction of a hazardous waste disposal site has been completed in Kyrgyzstan. • By the time the project comes to an end, an interim storage facility for hazardous wastes has been established in Kyrgyzstan.
Outcome 4.1: Project's results sustained and replicated	• It is assumed that the project manager will prepare all the reports that are required by the GEF and UNDP.

Most of the assumptions made at the project design stage remained valid during the implementation of the project, except for the assumptions (for Outcome 3.1) that by the time of completion of the project hazardous waste disposal site would be completed in Kyrgyzstan. However, there was no adverse implication of this assumption not remaining valid, as the project has been able to make an alternative arrangement for storage and disposal of mercury containing thermometers by organising an agreement with Khaidarkan Mercury Mine.

3.3 Lessons from other relevant projects

Prior to the GEF supported HCWM project in Kyrgyzstan following projects were implemented to take care of the health care waste.

- In 2007, the Swiss Agency for Development and Cooperation (SDC) mandated the Swiss Red Cross (SRC) to develop a health care waste management (HCWM) model and to replicate it in rural hospitals in the Kyrgyz Republic. In collaboration with the Republican Center for Infection Control of the Ministry of Health, a HCWM model was developed that used needle destroyers, segregated infectious waste at the point of generation and stored the waste in enamel-coated metal waste containers that can in their entirety be put in an autoclave, used as the treatment technology. The Swiss Red Cross supported HCWM related activities in hospitals were confined to the rural areas. This project successfully demonstrated the model of the sale of disinfected syringes (using autoclaves) to recycling companies, which was subsequently used for the GEF project.
- Following the success of the SRC implemented project, a Global Fund supported project "Promotion of the availability and quality of prevention, treatment, detection and care services for HIV-infected people among the most vulnerable population of the Kyrgyz Republic" was implemented for Bishkek.
- Since 2012, the Green Cross in partnership with the NGO 'Ekois' have implemented a project entitled, 'Reducing Adverse Effects of Medical Waste on Health and Security in Kyrgyzstan by Improving Health Care Waste Management'. The project provided the gynaecological hospital in Bishkek with autoclave and other HCWM supplies (needle cutters, infectious waste containers, etc.). The hospital made savings by switching from chemical disinfection to autoclaving.
- The WHO Regional Office for Europe continues has been providing technical assistance to Kyrgyzstan in strengthening the national strategy on HCWM. A large part of such support comprises of the review of existing regulations pertaining to HCWM and advised the national working group on ways to recycle/dispose of syringes used in the immunization campaigns
- Target program for the management of medical waste and control of nosocomial infections in the Kyrgyz Republic, implemented by the Ministry of Health. As part of this program pilot projects were carried out in the Naryn region with the support of the Swiss Red Cross for the development and testing of autoclave technologies for the treatment of HCW intended for hospitals in rural areas. Since 2011, the "Naryn model" was replicated/introduced in other parts of the country (rural areas) within the framework of the Kyrgyz- Swiss project on HCWM.

Lessons from these projects were properly incorporated in the design of the GEF project.

3.4 Planned stakeholder participation

The list of important stakeholders for the project was provided earlier (Section 2.5). The Project Steering Committee of the project was a main tool for stakeholder engagement into the project planning and implementation and included key partners for project implementation and the beneficiaries of the project. The project steering committee included representatives from various partners for implementation of the project from departments of different ministries. As per the project design, the other opportunities for formal engagement of stakeholders was by way of training sessions, conferences, workshops, awareness creation, project websites, results dissemination etc.

3.5 Replication approach

As was mentioned in section 3.4, in Kyrgyzstan the activities pertaining to management of health care waste management has been an ongoing progress even before the implementation of the GEF project.

Swiss Red Cross project which was implemented prior to the GEF project had introduced health care waste management facilities all across the rural area (in hospitals with more than 30 beds) in the country. The GEF project design provided for health care waste management facilities at FAPs, and at the health care facilities at Bishkek. With the implementation of the GEF project it was expected that the most of the health care facilities in Bishkek will have proper facilities for disposal of the health care waste. Thus, it was expected that after implementation of the GEF project the entire country would have proper non-incineration technologies based facilities for management of health care waste. However, still some of the smaller hospitals in the rural areas and some of the FAPs would get left out.

In case of the component of the project pertaining to management of Mercury, the project design considered that the ban /restriction on the import of Mercury containing medical thermometers will gradually cover public healthcare facilities across the country over a period of time.

Thus, the project has provided for replicability of project results at national level only by way of disseminating success stories out of the project. In order to facilitate replication across other countries, the project design made provisions to disseminate the results of the project with the help of project partners WHO, Swiss Red Cross, UNDP/Global Fund and the Republican Infection Control Centre as part of activities pertaining to HCWM and infection control.

Due to the implementation of the SRC project earlier and now with the implementation of the GEF project large parts of the overall health care facilities in the country have got covered for the management of health care waste management. However, some health care facilities in the rural areas (17 hospitals not covered by the SRC project and the FAPs not covered either by the SRC project or the present GEF project) are still left out. The project design provided for a review of the situation at the mid-way of the project to see the possibilities of covering additional health care facilities.

3.6 UNDP comparative advantage

The project is aligned with UNDP's comparative advantage in the area of capacity building, providing technical and policy support as well as expertise in project design and implementation. Additionally, UNDP has a long history of collaboration with the Government of Kyrgyzstan.

In Kirgizstan UNDP provides assistance in the form of grant financing. In addition to its own resources, UNDP identifies external funding from various sources. Specifically, UNDP strives to attract new or additional grant funding for Kyrgyzstan in areas where the national strategy and the UNDP mandate overlap.

In the focus area of democratic governance UNDP helps the Kyrgyz Parliament, and civil society to create a modern democracy. UNDP assists the country's leadership to demonstrate the progress toward the achievement of the MDGs, in general, and poverty reduction, in particular, along with the continued support to empower and develop capacities of the poor through various socio-economic projects, including expansion of employment opportunities. In the Environment and Disaster Risk Management portfolio UNDP has prioritized the development of small scale renewable energy projects and implementation of the Global Environment Facility's projects. It also includes capacity development projects of the national partners to effectively respond to natural disasters and manage peace and development issues. At a broader level, UNDP and the UN System work together with the donor community in the Kyrgyz Republic to improve aid effectiveness in the country through the harmonization and alignment of donor activities. UNDP Resident Representative in Kyrgyzstan also serves as the Resident Coordinator of the United Nations system in the country.

3.7 Linkages between the project and other interventions within the sector

As was mentioned before (section 3.3), at the time of project design and prior to that a number of projects were implemented /being implemented to address the issue of release of POPs and management of health care waste in Kirgizstan. While designing the GRF project the projects implemented in the past were taken into account. At the time of project design no other intervention within the sector was envisaged.

3.8 Management arrangements

Project has been executed by UNDP under 'Direct Implementation Modality (DIM)'. The organization structure for implementation of the project was comprised of a Project Board, Project Assurance, and a Project Management Unit (PMU).

The Project Board (PB) was responsible for making management decisions for the project, in particular when guidance was required by the Project Coordinator. It also played the critical role in project monitoring and evaluations by assuring the quality of these processes and associated products, and by using evaluations for improving performance, accountability and learning. The Project Board was to be comprised of the members, from key national government and non-government agencies, and appropriate local level representatives. UNDP was also to be represented on the Project Board. There was a provision in the project design to review the members of the Project Board. The Project Board was to have following three distinct roles:

- **Executive Role:** This individual was to represent the project "owners" and would chair the group. This role was assigned to the Ministry of Health
- **Senior Supplier Role:** The Senior Supplier's primary function within the Board was to provide guidance regarding the technical feasibility of the project. This role was assigned to UNDP-Kyrgyzstan represented by the Resident Representative.
- **Senior Beneficiary Role:** This role required representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board was to ensure the realization of project results from the perspective of project beneficiaries. This role was assigned to other institutions (key national governmental and non- governmental agencies, and appropriate local level representatives) represented on the Project Board, who are stakeholders in the project.

A Project Implementation Unit (PIU) was established under the UNDP Project Management Unit (PMU) comprising of permanent staff including a Project Coordinator (PC) and a Project Assistant. The PIU was to assist the MoH in performing its role as implementing partner. The Project Coordinator had the authority to run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the Board. The Project Coordinator's prime responsibility was to ensure that the project produces the results specified in the project document, to the required standard of quality

and within the specified constraints of time and cost. The PC was responsible for overall project coordination and implementation, consolidation of work plans and project papers, preparation of quarterly progress reports, reporting to the project supervisory bodies, and supervising the work of the project experts and other project staff. The PIU, following UNDP procedures on implementation of DIM projects, was to identify national experts and consultants, and international experts as appropriate to undertake technical work. The national and international companies were to be involved in project implementation. These consultants and companies were to be hired under standard prevailing UNDP procedures on implementation of DIM projects.

4. FINDINGS: PROJECT IMPLEMENTATION

4.1 Adaptive management and Feedback from M&E used for adaptive management

The main questions for the TE were: (please see Annex B for the evaluation questions)

- Did the project undergo significant changes as a result of recommendations from the mid-term review? Or as a result of other review procedures? Explain the process and implications.
- If the changes were extensive, did they materially change the expected project outcomes?
- Were the project changes articulated in writing and then considered and approved by the project steering committee?
- Whether feedback from M&E activities was used for adaptive management?
- Whether changes were made to project implementation as a result of the MTR recommendations?

Monitoring and Evaluation activities for the project has been quite strong. Annual work plans and annual reports were prepared regularly. The MTR of the project was carried out during the last quarter of 2016. The MTR of the project did not recommend any significant change in the project as the project was doing well and was on track.

Following recommendations at MTR three missions to the selected 100 pilot FMSs were carried out to ensure that the project's assistance is better instituted at the project sites. During monitoring missions outstanding FMSs needs and agreements with local-governments with respect to landfilling were concluded. Also, based on MTR findings the project procured additional equipment and suppliers. One of the major adaptive action by the project team has been provision of autoclaves (instead of pressure cookers as originally provided in the project design) as the waste treatment technology for FAPs.

MTR recommend a no cost extension to the project to address the risk that all project activities may not be completed in a satisfactory manner by the original implementation timelines of the project (July 2017). Accordingly, the project was granted a no cost extension. There was no change in the project implementation as such a need was not felt. Towards the end of its implementation the project utilized the available funds⁴ to establish three additional autoclaves for health care waste management in Bishkek.

4.2 Partnership arrangements

The main questions for TE were: (please see Annex B for the evaluation questions)

- Were there adequate provisions in the project design for consultation with stakeholder?
- Whether effective partnerships arrangements were established for implementation of the project with relevant stakeholders involved in the country/region, including the formation of a Project Board?

As mentioned in section 3.4, the project design had adequate provisions for stakeholder consultation and participation. The project has been implemented under 'Direct Implementation Modality (DIM)' of UNDP. The project design provided of Project Steering Committee as the main tool for stakeholder engagement into the project planning and implementation. The Steering Committee had representatives from key partners for project implementation and the beneficiaries of the project. As per the project design, the other opportunities for formal engagement of stakeholders was by way of training sessions, conferences, workshops, awareness creation, project websites, results dissemination etc.

The project established an effective partnerships arrangement for implementation of the project with the other (other than the government counterparts) relevant stakeholders as well. This included the partnership with the private companies for recycling of plastic, suppliers of autoclaves and consumables

⁴ One of the reasons for the availability of funds was that there was a provision in the project design to provide two shredder machines at the newly created engineered landfill to dispose of non-recyclable medical waste (e.g. PVC containing medical waste). This activity was not carried out as the government could not finalize the plan for implementation of the engineered landfill project.

for the operation of the waste treatment facilities created under the project. Some of the other partnerships established under the project included the with the Ministry of Emergency of the Kyrgyz Republic on trainings for safe handling of mercury waste (emergency preparedness); training integration into Centre for Training and Retraining of civil defense specialists; agreement with the Kyrgyz State Medical Institute of Retraining and Proficiency Enhancement to train medical personnel on techniques in the clean-up, storage and safe transport of mercury wastes in Bishkek; HACT agreement with Scientific Production Association Preventive Medicine under the Ministry of Health for development of legislation documents and conduction of training for HCFs; training materials have been integrated into the curriculum of the International University of Kyrgyzstan, Kyrgyz State Medical Institute of Retraining and Proficiency Enhancement, Kyrgyz-Russian Slavonic University, Kyrgyz State Medical Academy and Kyrgyz Medical College.

4.3 Project Finance

The main questions for TE were: (please see Annex B for the evaluation questions)

- Whether there was sufficient clarity in the reported co-financing to substantiate in-kind and cash co-financing from all listed sources?
- What are the reasons for differences in the level of expected and actual co-financing?
- To what extent project Outcomes supported by external funders were well integrated into the overall project?
- What is the effect on project outcomes and/or sustainability from the extent of materialization of co-financing?
- Whether there is evidence of additional, leveraged resources that have been committed as a result of the project?

The project design has provided for a significant amount as co-financing contribution for the project. Table 9 provides the details of the provisions for financing of the project.

Table 9: Project Budget and GEF Funding⁵ (Figures in USD)

Component	Year 1	Year 2	Year 3	Year 4	Total
Component 1	41,940	41,940	29,440	29,440	142,760
Component 2	265,240	247,420	235,040	230,040	977,740
Component 3	5,000	98,500	13,000	3,500	120,000
Component 4: Monitoring and Evaluation	3,000	21,000	0	31,000	55,000
Project Management	31,860	34,180	34,070	29,390	129,500
Total	347,040	443,040	311,550	323,370	1425,000

There was significant co-financing for the project. The committed co-financing was both in terms of cash contribution and in-kind contributions. As per the funding sources mentioned in the 'Project Document', the co-financing contribution was to come from the government (Ministry of Health) as well. Table 10 provides the details of the cash and in-kind co-financing which was to be provided by different government agencies.

Table 10: Co-Financing committed at the time of project approval⁶ (Figures in USD)

Entity	In-kind	Cash	Total
Swiss Red Cross (3185260 CHF)		3,425,011	3,425,011
Ministry of Health	1,700,000		1,700,000
Ekois (41730 Euro)	56,698		56,698
State Agency for Environmental Protection and Forestry (SAEPF)	900,000		900,000
UNICEF	500,000		500,000
Global Fund		416,439	416,439
NGO "Ecological expertise" (SAICM GHS project)	34,000		34,000
Total	3,190,698	3,841,411	7,032,109

⁵ As per Project Document

⁶ As per Project Document. Annex III of Project Document has provided a figure of USD 416,400 for the co-financing by the Global Fund, whereas the signature page of the project document has provided the figure of USD 416,439.

Table 11 provides the details of the in-kind contributions which were to be done by different agencies.

Table 11: In-kind Contributions by different agencies

Name of Entity	Description of responsibilities in the project's implementation (<i>considered co-financing contributions</i>)
Ministry of Health	a. Project executing agency
	b. Support the selection process of project healthcare facilities (HCFs) and a pilot zone in Bishkek as well as FAPS in Chui and/or Issyk- Kul Oblast.
	c. Provide guidance to the project team in the development of policy and regulatory activities (development of national strategies, standards, degrees, etc.) related to HCW and Hg management in the healthcare sector and subsequently support and lobby for their adoption.
	d. Provide guidance to the project on the implementation of BAT and BEP at selected HCFs and ensure alignment with the adopted HCWM model in Kyrgyzstan based on the SRC project.
	e. Ensure accessibility to HCFs by the project team and engagement of HCFs in the project's implementation. Facilitate dialogue regarding the zoning of HCFs, the responsibility of HCFs in the project and lobby for the development and signature of MoUs between the project and model HCFs
	f. Through the MoH Preventive Medicine Unit lobby with medical faculties and nursing schools for the inclusion of HCWM training and modules into existing curricula, and ensure the signing of MoUs between such training facilities and the project.
	g. At national level, dissemination of lessons-learned and best practices will be led by the National Centre on HCWM and infection control.
State Agency for Environmental Protection and Forestry (SAEPF)	h. Project executing agency.
	i. Provide guidance to the project team in the development of policy and regulatory activities (development of national actions plans, standards/guidelines, degrees, etc.) related to Hg management outside of the healthcare sector and subsequently support and lobby for their adoption.
	j. Support the training emergency response teams (Ministry of Emergencies) on how to respond to large Mercury spills.
	k. Guide the project in the training of staff involved in transportation of Mercury Waste.
	l. Conduct an assessment of potential Cost-Recovery Mechanisms for the disposal/treatment of Mercury containing products.
	m. Guide the project in identifying and assessing intermediate and long- term storage options for Mercury containing wastes.
	n. Advocate for the allocation of a cell at the new landfill site, exclusively for hazardous waste, which could also accept Mercury containing wastes or alternatively advocate for the installation of a Mercury decontamination facility at the future landfill.
SRC (Swiss Red Cross)	o. Provide co-financing to the project.
	p. Allow for the replication and use of the SRC HCWM model in Bishkek City.
	q. Provide input into the revision and updating of the National Strategy on HCWM and its Action Plan.
Green Cross / Ekois	a. Provide co-financing to the project through the Green Cross/NGO «Ekois» project «Reducing Adverse Effects of Medical Waste on Health and Security in Kyrgyzstan by Improving Health Care Waste Management».
	b. Share lessons-learned and best practices resulting from the support provided to the gynecological hospital in Bishkek, in particular experiences related to the budgeting of cost savings for future maintenance/replacement.
	c. Provide inputs and guidance to the 100 FAP pilot project.
Global Fund / UNDP	d. Provide co-financing to the project through the Global Fund (UNDP implemented) project entitled "Promotion of the availability and quality of prevention, treatment, detection and care services for HIV- infected people among the most vulnerable population of the Kyrgyz Republic"
	e. Ensure that information, lessons-learned and best practices resulting from the Phase I project are shared and applied in the development of a HCWM system for the City of Bishkek.
	f. Ensure that if a Phase II Global Fund project will be approved, the GEF and Global Fund provide complementary support, avoiding overlap and ensuring that support is extended to all HCFs in Bishkek city.
UNICEF	g. Provide co-financing to the project through UNICEF programmes which aim to improve the quality of health services and infection control in maternity and children's healthcare facilities.
	h. Provide guidance to the project on HCWM, in particular with respect to the development of training for healthcare facility staff pertaining to infection control and HCWM as well as education modules on HCWM to be embedded in medical faculty and nursing school curricula.
WHO	a. Take on the implementation of the project at the rural level (FAPs) in partnership with Green Cross.
	b. Provide guidance to the project team in the development of policy and regulatory activities (in particular the national strategy on HCWM) and the implementation of the SRC HCWM model in

Name of Entity	Description of responsibilities in the project's implementation (<i>considered co-financing contributions</i>)
	Bishkek, ensuring alignment with the WHO Blue Book (2013) on the "Safe Management of wastes from healthcare activities).
EBRD/Bishkek Mayor's Office	a. Consider the allocation of a cell at the new landfill site, exclusively for disinfected HCW / or the installation of a centralized shredder.
	b. Consider the allocation of a cell at the new landfill site, exclusively for hazardous waste, which could also accept Mercury containing wastes or alternatively advocate for the installation of a Mercury decontamination facility at the planned engineered landfill.
Model Facilities (public healthcare facilities)	a. Sign an MoU with the project
	b. Allocate staff and staff time to conducting a detailed HCWM and Hg baseline assessments in the healthcare facility
	c. Ensure the establishment of a Waste Management Committee
	d. Assign HCWM responsibilities to staff
	e. Develop a HCWM Plan (including Hg management)
	f. Allocate sufficient staff and staff time for training purposes
	g. "Staff Preference Study"
	h. Make a commitment towards adopting procurement practices that exclusively procure Mercury-free medical devices.
	i. Allocate space for the installation of the non-incineration technology(ies), clean and "dirty" rooms, as well as storage areas.

The in cash contribution committed by different agencies got realized during the implementation of the project. Similarly, all the activities which were committed as in-kind contribution were carried out by the agencies. Table 12 provides the details of the cash and in-kind financing provided by different agencies.

Table 12: Co-financing to the project by different agencies (Figures in USD)

Co-financing	UNDP own financing		Government		Partner Agency		Total	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants					3,841,411	3,841,411	3,841,411	3,841,411
Loans/Concessions								
In-kind support	500,000	500,000	2,600,000	2,600,000	90,698	90,698	3,190,698	3,190,698
Other								
Totals	500,000	500,000	2,600,000	2,600,000	3,932,109	3,932,109	7,032,109	7,032,109

The co-financing for the project was as per the commitments made at the time of project design and there were no short falls.

4.4 Monitoring and evaluation: design at entry

The main questions for TE were: (please see Annex B for the evaluation questions)

- Is the M&E plan well conceived at the design stage?
- Is M&E plan articulated sufficient to monitor results and track progress toward achieving objectives?
- Was the M&E plan sufficiently budgeted and funded during project preparation and implementation?
- How effective are the monitoring indicators from the project document for measuring progress and performance?

A monitoring and evaluation plan was put in place at the time of the design of the project. There was a provision to review the plan at the time of project inception. As per the plan, the project was to be monitored through the periodic quarterly and annual monitoring. There were provisions for preparation of the PIR. The PIR combines both UNDP and GEF reporting requirements. Provisions were also made in the project design for an independent MTR and the TE. The GEF Focal Area Tracking Tool for POPs was also prepared at the time of CEO endorsement and before the MTR and at the TE. As per the plan stipulated in the project document, the project team was to prepare a Project Terminal Report, to summarize the results achieved (objectives, outcomes), lessons learnt, problems met and areas where results may not have been achieved. The set of indicators to be monitored and the corresponding targets were provided in the log-frame of the project. The results of the monitoring and evaluations were to be provided to the project board.

As is evident, the M&E plan at the design stage was well conceived. The plan was well articulated and was sufficient to monitor results and track the progress toward achieving the objectives, except for some minor issues with the indicators used. Adequate provisions were made in the budget for monitoring and evaluation activities. **The M&E design at entry has been rated as Satisfactory.**

4.5 Monitoring and evaluation: implementation

The main questions for TE were: (please see Annex B for the evaluation questions)

- Whether the logical framework was used during implementation as a management and M&E tool?
- What has been the level of compliance with the progress and financial reporting requirements/ schedule, including quality and timeliness of reports?
- What has been the effectiveness of the monitoring reports and evidence that these were discussed with stakeholders and project staff?
- What is the extent to which follow-up actions, and/ or adaptive management, were taken in response to monitoring reports (APR/PIRs)?
- Whether APR/PIR self-evaluation ratings were consistent with the MTR. If not, were these discrepancies identified by the project steering committee and addressed?

As mentioned before, the Monitoring and Evaluation activities have been quite strong. The monitoring reports were produced regularly and shared with the steering committee. The reports were discussed at the steering committee meetings and the required instructions and actions suggested by the committee were carried out.

While preparing the periodic reports, project results framework and the corresponding indicators were used which ensured that the project team remained focused towards achieving the projected results of the project in a timely manner.

The PIR self-evaluation ratings were more or less consistent with the MTR. **M&E Plan Implementation has been rated as Satisfactory. Overall quality of M&E is rated as Satisfactory.**

4.6 UNDP and Implementing Partner / execution coordination, and operational issues

The main questions for TE were: (please see Annex B for the evaluation questions)

- Whether there was an appropriate focus on results?
- Was there adequate UNDP support to the Implementing Partner and project team?
- Quality and timeliness of technical support to the Executing Agency and project team
- Were the management inputs and processes, including budgeting and procurement adequate?

The management arrangements as presented in the Project Document had been clearly described and were based on common project management arrangement for UNDP Direct Implementation Modality (DIM). The project has fully followed the management arrangements as described.

A Project Implementation Unit (PIU) was established under the UNDP Project Management Unit (PMU). The PIU assisted the MoH and SAEPF in performing their respective roles as implementing partners. The Project Coordinator run the project on a day-to-day basis on behalf of the Implementing Partners. PIU, followed UNDP procedures on implementation of DIM projects

UNDP country office provided overall program, administrative, and financial oversight of the project progress in accordance with the common UNDP procedures and tracking tools available in Atlas system. The Project Steering Committee performed as a key decision-making body at a project strategic planning level. **Quality of UNDP Execution has been rated as Satisfactory.**

Although project inception happened in a timely manner, there were delays in the start of actual implementation of the project. This was largely due to the staffing of the project implementation unit (PIU) took time. There were also delays in elaboration of the national medical waste strategy, and some

land ownership issues that were not addressed adequately at the start by the local authorities. These combined, caused delays in project launch and subsequent implementation. However, the project implementation team was able to make up for the initial delays and complete the planned activities in a timely manner.

UNDP as project implementing agency collaborated effectively with its partners in the project. Project management and administration has been satisfactory. **The quality of Implementation by the Implementation Agency is rated as Satisfactory.**

5. FINDINGS: PROJECT RESULTS

5.1 Attainment of Results

The main questions for TE were: (please see Annex B for the evaluation questions)

- What has been the achievements of the objectives against the end of the project values of the log-frame indicators, with indicators for outcomes, indicating baseline situation and target levels, as well as position at the close of the project?

A findings regarding the attainment of the project objectives is presented in this section of the report. The objective of the project was, “Implement best environmental Practices (BEP) and Best Available Technologies (BAT) in the health-care sector to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention to reduce UPOPs as well as Mercury releases”. As per the project document the objectives of the project were to be achieved through implementation of the following four components.

Component 1: Strengthening of the National Regulatory and Policy Framework for Health Care Waste Management

Component 2: Implementation of Best Available Technologies (BAT), Best Environmental Practices (BEP) for Health Care Waste Management (HCWM) Systems

Component 3: Implement Mercury Waste Management and Reduction Activities for the City of Bishkek

Component 4: Monitoring, Adaptive Feedback, Outreach and Evaluation

As can be seen Component 1 and 2 of the project were clearly targeted at management of HCW (leading to reduction in the emissions of POPs), while component 3 of the project was targeted towards management of mercury. As was mentioned in section 3.1 (Analysis of Log Frame / Results Framework), each component of the project has its set of Outcomes and indicators. Different outcomes of the project were to be achieved by carrying out a set of activities.

Achievement of different Components (and the corresponding Outcomes) of the project in terms of indicators has been presented first, which is followed by the presentation regarding the achievement of project objectives. This is because the achievement of the project objectives has been assessed both in terms of the indicators (for project objectives as given. As per the requirements, the evaluation of the ‘attainment of results’ has been carried out for the three individual Components of the project as well. in the log-frame) and in terms of the achievement for the three planned Components of the project. In this section of the report achievement of results has been presented only for components 1 to 3 as the deliberations regarding monitoring, adaptive feedback, outreach and evaluation (Component 4) has already been presented in the earlier section of the report. The evaluation of the attainment of results has been carried out in terms of the indicators of the log-frame. Wherever relevant, the reasons for non-attainment of the target values of the indicators have also been provided.

The mandatory ratings for the attainment of overall results has also been provided. Although, the rating is not mandatory for achievement against each Outcome and each Indicator, the rating has been provided. This has been done to facilitate the ratings for the individual Component of the project and the project at an aggregate level. The evaluation of the attainment of overall results has been carried out keeping in mind the main questions for TE, as given in the box at the beginning of this section

5.1.1 Attainment of Results– Component 1

Component 1 of the project was to support government entities in enhancing the policy and regulatory framework pertaining to HCWM. As per the project design (Project Document) the expected Outcomes for Component 1 of the project were as given below.

Outcome 1.1: The policy framework for Health Care Waste Management enhanced

Outcome 1.2: The regulatory framework for Health Care Waste Management enhanced

Indicative activities which were to be carried out under different Outcomes of Component 1 were provided in Section 3.1 (please see Table 6). Table 13 provides details of the achievement of the results for different Outcomes of Component 1.

Table 13: Results: Component 1: Strengthening of the National Regulatory and Policy Framework For Health Care Waste Management

Outcome	Indicator ⁷	Baseline	Target	Status at MTR	Level at PIR 2018 ⁸	TE Rating ⁹
Outcome 1.1 The policy framework for Health Care Waste Management enhanced	<i>Indicator 1</i> National Health Care Waste Management Strategy revised and updated. <i>Indicator 2</i> National Strategy for Anatomical Waste developed.	- Although a National Strategy (2008- 2012) on HCWM was elaborated, it has never been approved/adopted - Collection, safeguarding & transport of anatomical wastes is highly inadequate	- National Strategy on Healthcare waste management in the Kyrgyz Republic finalized. - National Strategy for Anatomical Waste drafted.	Achieved Satisfactory	Achieved	Achieved Satisfactory (please see the details provided in the paragraphs following this Table)
Outcome 1.2 The regulatory and policy framework for Health Care Waste Management enhanced.	<i>Indicator 3</i> Number of approved and adopted standards and degrees developed as part of the project.	- HCWM related legislation is merely functioning as a framework and reflects the general requirements to prevent adverse effects on health and the environment. However, most of these are guidelines do not have any legal status and as such are not enforceable. - The current regulatory framework does not cover all medical waste management challenges	- Standards on technologies for the processing and final disposal of HCW developed. - Standards on HCW in immunization offices developed. - Standards on DoD developed. - Standards on treatment of chemical and pharmaceutical waste developed. - Standards on monitoring HCWM practices developed. - Job descriptions for those responsible for HCWM at HCFs developed. - Import ban drafted on PVC containing syringes and other medical products for which cost-effective alternative are available.	On Track to be achieved Satisfactory	Achieved	Achieved Satisfactory (please see the details provided in the paragraphs following this Table)

⁷ The indicators were not numbered in the 'Project Document'. The numbering has been done at the time of TE to facilitate the discussion and reference

⁸ Self assessment by the project team in PIR for the year 2018

⁹ Rating Scale; 6. Highly Satisfactory (HS): no shortcomings; 5. Satisfactory (S): minor shortcomings; 4. Moderately Satisfactory (MS): moderate shortcomings 3. Moderately Unsatisfactory (MU): significant shortcomings; 2. Unsatisfactory (U): major problems; 1. Highly Unsatisfactory (HU): severe problems

Outcome 1.1 (Indicator 1 and 2)

Indicator 1

Project facilitated consultation meetings which lead to agreement amongst stakeholders to develop a comprehensive national strategy on Healthcare Waste Management.

As a result, the Ministry of Health, established an inter-departmental working group, which was responsible for the development of the strategy for health care waste management. The working group developed the draft of the HCWM strategy, which included all the categories of waste generated in the health sector and their management aspects. After deliberations on the draft documents, three documents pertaining to National HCWM Strategy, National Action Plan, and National HCWM Strategy Budget were approved in July 2017.

Apart from facilitating the approval of the National HCWM Strategy and the corresponding action plan the project supported a study tour for the government officials on BAT/BEP for medical waste management.

The target against indicator 1 has been achieved. Achievement of results for Indicator 1 are rated as Satisfactory.

Indicator 2

The National Strategy for Anatomical Waste has been included/incorporated into the comprehensive National 2017-2020 HCWM Strategy. The target against indicator 2 has been achieved. Achievement of results for Indicator 2 is rated as Satisfactory.

Achievement of results for Outcome 1.1 is rated as Satisfactory

Outcome 1.2 (Indicator 3)

In the baseline the regulatory framework for management of HCW did not cover some of medical waste management challenges. One of such challenge was the implementation and enforcement of regulations and guidelines. Outcome 1.2 of the project was to support the development of some of the standards (please see activities against Outcome 1.2 in Table 6) and other regulatory measures.

Under the project a Regulatory and Institutional Analysis (RIA) was carried out. This led to a RIA document, including a matrix indicating the regulatory gaps and needs in the field of HCWM with a focus on UPOPs and mercury releases. Further work under this Outcome was focused towards addressing these gaps. This led to the approval (order of the Ministry of Health in March 2018) of standard operating procedures (SOP) for the management of healthcare waste and guideline for monitoring and evaluation of HWM system in health care organizations. following documents were approved:

1. Guidance for monitoring and evaluation of the waste management system in health organization
2. Standard operating procedures for the organization of medical waste management system in health organizations
3. Standard operating procedures for the autoclaving of medical waste at the decontamination (autoclaving) site
4. Standard operating procedures for actions of personnel of health organizations in the event of emergencies during the treatment of medical waste

While deliberating on the import ban of PVC containing medical waste (Activity 1.2.7 in Table 6) it was found that PVC syringes are not being imported (and used) in the country. For the other PVC based medical devices it was found that the corresponding PVC free devices cost about 5 times. Thus, the

proposal to ban import of PVC based medical devices was not approved for the time being. However, based on the strategy of the Ministry of Health, which prioritizes protection of the health of children and pregnant women, a proposal was made for phased transition to “green procurement (PVC free)”, with the first phase focusing on its implementation for children and pregnant women.

As far as development of standards for immunization waste is concerned (Activity 1.2.2), the project facilitated development of a draft standard for the management of vaccine wastes which was discussed with the representatives of WHO and the Republican Centre for Immunologic Prevention. However, in the course of negotiations with Gavi (the Alliance for Vaccination), a response was received that the procedures for disposal of after vaccination of medical items that were obtained as humanitarian aid will not be changed for one country. At the moment, the country is not ready to purchase vaccines. Thus, it was decided to keep this on hold.

Preventive Medicine Centre developed the first draft of the instructions on HCWM which includes all categories of waste generated in the health sector (i.e. general waste, infectious waste, anatomical waste, pharmaceutical waste, chemical waste and radioactive waste). A legal company was hired by the project to provide legal assistance on strengthening and promotion of HCWM instruction and providing assistance in redrafting the instructions (following feedback from project partners on the initial draft).

The existing legislation on HWM was revised and approved by the Government in Feb 2018 vide a Decree. The “Instruction on the Management of Healthcare Waste in the Territory of the Kyrgyz Republic”, covers all medical institutions regardless of ownership. The Governmental Decree “Instruction on the management of healthcare waste in the territory of the Kyrgyz Republic” allows to move away from the traditional approach to waste hazards and facilitates introduction of institutional concept of healthcare waste and application of strict requirements for collection, temporary storage, storage, transportation and disposal at the legislative level.

Most of the activities envisaged under Outcome 1.2 were carried out successfully and the Targets for Indicator 3 were met. **The achievement of results for Outcome 1.2 is rated as Satisfactory.**

The achievement of results for Component 1 is rated as Satisfactory.

5.1.2 Attainment of Results - Component 2

As per the project design (Project Document) the expected Outcomes for Component 2 of the project were as given below.

Outcome 2.1: I-RATs completed in HCFs

Outcome 2.2: Allocation of HCWM technologies, devices, supplies and technical assistance determined for each HCF

Outcome 2.3: UPOPs and Green House Gas Emissions (GHG) reduced as a result of improved HCWM systems in supported HCFs

Outcome 2.4: National training modules on HCWM available and being used by the MoH (Preventive Medicine), national training centers and Medical Faculties.

Indicative activities which were to be carried out under different Outcomes of Component 2 of the project were provided in Section 3.1 (please see Table 6). Different Outcomes of Component 2 are more or less sequential, in the sense that activities carried out under Outcome 2.1 would determine the scale and type of technology intervention needed at each of the HCF to be covered under the project, which will support implementation of the activities for achieving Outcome 2.2 of the project. The activities carried out for achievement of Outcome 2 will lead to reduction in the emissions of UPOPs and GHG under Outcome 2.3 of the project. Training was to be provided under the activities for Outcome 2.4 to achieve and sustain the results of Outcomes 2.1 to 2.3. Table 14 provides details of the achievement of the results for different indicators for Component 2.

Table 14: Results: Component 2: Implementation of Best Available Technologies (BAT), Best Environmental Practices (BEP) for Health Care Waste Management (HCWM) Systems

Outcome	Indicator	Baseline	Target	Status at MTR	Level at PIR 2018	TE Rating
Outcome 2.1: Accurate insight in the HCWM situation at each of the HCFs supported by the project.	<u>Indicator 4</u> I-RATs completed for each of the HCFs supported by the project	Some baseline information is available mainly from prior HCWM assessments as well as from the project's PPG phase	- All HCFs have participated in a HCWM assessment. - An accurate UOPs and Hg baseline has been established for each HCF	Achieved Satisfactory	Achieved	Achieved Satisfactory (please see the details provided in the paragraphs following this Table)
Outcome 2.2: Allocation of HCWM technologies, devices, supplies and Technical Assistance (TA) needs determined for each HCF	<u>Indicator 5</u> Detailed procurement and TA plan for the implementation of Phase I. Updated Zoning Plan	- Some information is available on the type of TA and equipment/supplies that would be required for HCFs, however detailed information for each HCFs will be required to draw up a sound procurement and TA plan. - A Zoning Plan was developed in 2012 but is currently outdated. The Zoning Plan will also require revision to reflect the outcomes of the I-RATs.	- For each HCF, HCWM equipment, Technical Assistance (TA) and funding needs have been determined/calculated for the first phase of the project. - The HCF "Treatment Zoning" plan (using GIS/Remote Sensing) has been revised/updated. - A detailed procurement and TA plan has been drawn up for the first phase of the project's implementation.	On Track to be achieved Satisfactory	Achieved	Achieved Satisfactory (please see the details provided in the paragraphs following this Table)
Outcome 2.3: UOPs releases reduced as a result of improved HCWM systems in supported HCFs	<u>Indicator 6</u> % as compared to I-RAT baseline established at the start of the project (outcome 2.1) - Waste segregation improved by xx % - Number of HCFs that send their disinfected syringes to recyclers increased by xx % - Average HCF infectious waste volumes reduced by xx % - No of project HCFs		- MoUs signed between project and each HCF. - HCF staff trained in best practices for HCWM, including: - Responsibilities for HCWM assigned and waste management committees operationalized in each project HCF. - HCWM plans drawn up for each project HCF. - Xx HCFs and xxx staff trained in best HCWM practices related to waste identification, classification, segregation, labelling, packaging, storage, treatment, transportation, etc. at HCF level. - Xx managers and professionals trained on HCWM related procurement, accounting and budgeting;	On Track to be achieved Satisfactory	Achieved	Not assessed

Outcome	Indicator	Baseline	Target	Status at MTR	Level at PIR 2018	TE Rating
	practices composting increased by xx % •Percentage of project HCFs that have introduced non-incineration technologies xx % •Waste monitoring installed. •No. of incidences/accidents involving infectious waste reduced by xx % •Transportation of infectious and anatomical waste exclusively assumed by authorized vehicles. •Average costs for HCWM reduced by xx%		monitoring and reporting; and HCWM related record keeping (incidents, accidents, waste recording, etc.) •8 Bishkek hospitals and 3 polyclinics supported in refurbishing/preparing waste storage locations and locations for technology installation •Non-incineration technologies and HCWM supplies procured and installed for all project HCFs (11 HCFs in Bishkek, 1 zone and 100 FAPs): •Project HCFs equipped with HCWM supplies and non- incineration technologies •xx Global Fund recipient HCFs equipped with additional non-incineration technologies/HCWM supplies •zone equipped with sufficient treatment capacity/HCWM supplies (including the zone's hub treatment facility, its satellites as well as decentralized facilities). • (Pilot) 100 FAPs in rural areas equipped with pressure cookers and necessary capacity building and HCWM supplies. •Standard Operating Procedures (SOPs) for the procured technologies prepared/revised. •Autoclave operators and other staff trained on SOPs, safety precautions, and quality control of the new technology. •Draft cost-sharing agreements for infectious waste treatment between service HCF and recipient HCF developed. •Optimum transportation routes determined •Staff involved in infectious waste transportation trained on the safe handling of HCW and Mercury waste			

Outcome	Indicator	Baseline	Target	Status at MTR	Level at PIR 2018	TE Rating
			•Project HCF staff trained in in composting and plastics recycling. •Environmentally sound agreement reached with the Bishkek Mayor's office and the EBRD on the handling of disinfected HCW and Hg containing wastes at the new engineered Bishkek Landfill			
Outcome 2.4: National training modules on HCWM available and being used by the MoH (preventive Medicine), national training centers and Medical Faculties.	<u>Indicator 7</u> Training possibilities /opportunities on HCWM offered by national teaching institutions and schools	•Lack of a systematic approach to training medical and nursing staff on HCWM resulting in low awareness on the dangers of HCW and the risks to human health and the environment. •As part of the Global Fund Phase II project, the MoH institute "Preventive Medicine" has developed training modules, with support of UNICEF and will be providing this training to various target groups. •The "National Training Center" provides post-graduate training (continuous professional development) as well as educational training for healthcare staff, which contains modules on HCWM.	•National training modules developed by Preventive Medicine as well as those used by the National Training Centre have been revised/improved based on the WHO Healthcare Waste Project Global Training Materials •MoUs signed between the project and medical university faculties and nursing schools. •Training modules on HCWM designed and subsequently embedded in the curricula of the Medical Academy as well as the Medical Facility of the Kyrgyz- Russian-Slavik University and potentially a number of nursing schools	On Track to be achieved Satisfactory	Achieved	Satisfactory (please see the details provided in the paragraphs following this Table)

Outcome 2.1 (Indicator 4)

A baseline assessment regarding the status of HCWM practises and quantum of waste for each of the HCF was carried in the initial phase (year 2015) of the project implementation. All governmental HCFs (68 facilities) in Bishkek participated in it. For the purpose I-RAT tool was used.

The results of this assessment were used to choose the project pilot health-care facilities and the suitable technology for implementation of activities for Outcome 2.2. Based on findings of this assessment, the project covered 100 FMSs that daily generated an average 12.42 kg of infectious wastes. **The achievement of results for Outcome 2.1 is rated as Satisfactory.**

Outcome 2.2 (Indicator 5)

Based on the results of the assessment (carried out under Outcome 1) of the HCWM practices at the targeted HCFs the quantum of Technical Assistance and the funding needs was determined for each HCFs

The project design envisaged a cluster approach to cover all the health care facilities in the city of Bishkek. Under the proposed cluster approach the project design anticipating supporting different zones (including the zone's hub treatment facility, its satellites as well as decentralized facilities) in putting in place a fully functioning HCWM treatment zone system. The project supported development of a new zoning plan depicting pilot zones, organized per category of hub treatment centers, satellite centers, or single source waste generators were revised and updated. The old zoning plan for HCW waste treatment clusters was used as a baseline for improvement of information base for decision-making on the installation of non-combustion technology to reduce waste treatment capacity gaps. Relevant department under the Ministry of Health took the ownership of the maintenance and updating of the developed zoning plan after the project had submitted the developed and tested software. This formed the basis for the implementation of the pilots at different HCFs.

All the activities which were envisaged for achieving Outcome 2.2 has been carried out. **The achievement of results for Outcome 2.2 has been rated as Satisfactory.**

Outcome 2.3 (Indicators 6)

One of the significant activity under this Outcome of the project was the provision of autoclaves¹⁰ for 100 FMSs (in Chui and Issyk-Kul regions) and 11 HCFs (14 autoclaves in these 11 HCFs) in Bishkek. In order to make good use of the available funds¹¹ (towards the end of the project), the project provided three additional high capacity autoclaves for strengthening autoclaving points for two (2) new HCFs (annual treatment of 19,580 kg) and for one pilot HCFs among eleven (11). Thus the total number of HCFs where the HCW management has been installed increased from 11 to 13, and the total number of autoclaves provided to these 13 HCFs and increased to 17 (from 14 earlier).

Cost-sharing agreements for infectious waste treatment between service and recipient HCFs have been developed and signed amongst the HCFs. SOPs for these technologies were developed and approved before project starting (under Outcome 1.2). Also, optimum transportation routes within the newly developed zoning plan were determined earlier (under Outcome 2.2).

At some of the locations (depending on the need) the project also supported construction / renovation of the building to house the waste management facilities. Training was also provided to the staff of the HCFs in Bishkek on the management of HCW and safe handling and disposal of Mercury. Training was also provided to the staff of the 100 FMSs on the HCW management and the operation of newly created facilities. Based on the training models developed a special brochure with infographics on HCWM principles were prepared (in Russian and Kyrgyz language) and distributed amongst the pilot HCFs and other HCFs. With this all the project pilot HCFs have introduced non-incineration technologies (autoclaves) for management of HCW.

There was an existing vehicle (procured by UNDP's Global Fund on HIV/AIDS, malaria and tuberculosis in 2012). This vehicle serves for transportation of infection HCW among HCFs (cluster

¹⁰ The project design (as per project document) had provided for pressure cookers for the 100 FMSs. However, during trials it was found that that infectious waste was not completely disinfected during boiling time/regimes applied in pressure cookers. Thus, it was decided to provide small autoclaves instead of pressure cookers.

¹¹ One of the reasons for the availability of funds was that there was a provision in the project design to provide two shredder machines at the newly created engineered landfill to dispose of non-recyclable medical waste (e.g. PVC containing medical waste). This activity was not carried out as the government could not finalize the plan for implementation of the engineered landfill project

zones) in Bishkek. However, after project's updating of zoning plan and inclusion of additional HCFs for treatment and transportation of HCW, the need for the second vehicle has brought up. The second vehicle for the transportation of HCW has been procured and delivered under the project.

The project also supported construction of composting pits at six HCFs in Bishkek (other five HCFs had existed composting pits/or nor have trees on their territory). These pits will serve for composting leaves and brushes falls from trees in HCFs to avoid their burning. Project procured services to upgrade specialized vehicles for the safe transport of HCW as well as containers for the transportation of medical waste generated by HCFs located in Bishkek and the transportation of disinfected waste generated by the 100 FMSs in Chui and Issyk-Kul oblasts.

Following a decision by the Steering Committee, the project hired a company to raise awareness of project target groups and the general public on environmental issues and the projects' priorities. It organized four round tables with experts, key decision makers and staff of the relevant ministries, deputies and profile committees of the Parliament of the Kyrgyz Republic on the impact of U-POPs and mercury emissions on public health, with the involvement of television and appropriate coverage of events in the media, preparation and printing of booklets and other information materials in infographics.

As was mentioned in section 3.1 (Analysis of Log Frame / Results Framework), there are issues with the indicators for Outcome 2.3. This was also highlighted in Table 7. Most of the indicators for Outcome 2.3 are in percentage terms and without any numbers. Thus, for the indicators for Outcome 2.3 there are issues in terms of measurability and other aspects. This was highlighted in the MTR as well. The MTR noted, "the indicators for this outcome do not have much meaning".

One of the other issues with Outcome 2.3 is that this Outcome is the 'Project itself'. Thus, it is not logical to separately assess the achievement of results against this Outcome. Due to these reasons **on assessment of achievement of results for Outcome 2.3 has been done separately.**

Outcome 2.4 (Indicator 7)

This Outcome of the project was to address the issue of limited availability of training on HCWM. The Outcome 2.4 was to establish and institute training curricula at national level to ensure that future generations of medical and nursing staff have received appropriate training on different aspects of HCWM before starting work on the job.

The activities carried out to achieve the results of this Outcome includes development of the training materials on HCWM (with the support of the project by Preventive Medicine Centre), training of trainers in Bishkek (for 20 lecturers from medical universities and colleges - 3 men and 17 women), integration of the training materials into the curriculum of four universities and one college.

The achievement of the results for Outcome 2.4 is rated as Satisfactory.

Based on the level of achievements for different Outcomes and the Indicators, the achievement of results for Component 2 of the project is rated as 'Satisfactory'.

5.1.3 Attainment of Results – Component 3

Component 3 of the project was focused on the management of mercury. As per the project design (Project Document) the expected Outcomes for Component 3 of the project were as given below.

Outcome 3.1: Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg-free or lower level Hg products

Outcome 3.2: Improved Mercury management practices at HCFs and phase-out of Mercury containing thermometer

Outcome 3.3: Intermediate and long-term storage options for Mercury containing wastes identified

Although, Component 3 of the project was largely for Bishkek (as evident from the title of the component), the impacts will get realized at the national level as the policy and regulatory measures (under Outcome 3.1) will get applied at the national level. Further, though the focus is on mercury containing medical devices, the project has tried to address the mercury contained in other devices (e.g. mercury containing lamps) as well. The strategy (as used under this component of the project) to minimize the release of mercury due to use of medical devices, is to phase out the use of mercury containing medical devices over a period of time by using a policy and regulatory framework.

Indicative activities which were to be carried out under different Outcomes of Component 3 of the project were provided in Section 3.1 (please see Table 6). Table 15 provides details of the achievement of the results for different indicators for Component 3.

Table 15: Results: Component 3: Implement Mercury Waste Management and Reduction Activities for the City of Bishkek

Outcome	Indicator	Baseline	Target	Status at MTR	Level at PIR 2018	TE Rating
Outcome 3.1: Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg- free or lower level Hg products	<i>Indicator 8</i> A regulatory framework pertaining to the management of Mercury containing products is developing and available	•In Kyrgyzstan, the management of Mercury containing products is not being addressed, whether in the healthcare sector or any other sector. •When products that contain Mercury break or need to be disposed of, such wastes are being discarded along with regular municipal waste. •No special measures are taken to protect healthcare facility staff, the environment or people/communities coming in close contact with such wastes. •There are no restrictions on the importation of high Hg-content lamps (CFLs, tubes) or Hg- containing medical devices. •Guidelines on the management, storage and disposal of Hg containing lamps are not available. •Maximum permissible concentration (MAC) for metallic mercury (Hg) are set for air, water and soil.	•National action plan on the LCM of Hg containing products developed. •National standards/guidelines on the management, storage and disposal of mercury containing products developed for large public and private entities, as well as HCFs. •MSP degree drafted prescribing a phased approach/total phase-out for the use of Hg-containing thermometers. •EU RoHS directives for lighting products transposed into national regulations through a degree. •Assessment of potential Cost-Recovery Mechanisms for the future disposal/treatment of Mercury containing products conducted.	Achieved Satisfactory	Achieved	Achieved Satisfactory (please see the details provided in the paragraphs following this Table)
Outcome 3.2: Improved Mercury management practices at HCFs and phase-out of Mercury	<i>Indicator 9</i> 80% of project HCFs have introduced Mercury-free devices	•Mercury containing sphygmomanometers have been phased-out approximately 10 years ago, however Mercury containing thermometers are still in wide use. In	•Hg baseline assessments completed for each project HCF (as part of the I-RATs, see Activity 2.1.1).	On Track to be achieved Satisfactory	Achieved	Achieved Satisfactory (please see the details provided in

Outcome	Indicator	Baseline	Target	Status at MTR	Level at PIR 2018	TE Rating
containing thermometer		2011 and 2012, respectively 203,121 and 116,034 were imported. •When products that contain Mercury break or need to be disposed of, such wastes are being discarded along with regular municipal waste. •Currently there are no safeguarding procedures in place at HCF level to ensure the safe clean-up, management and storage of broken thermometers or other mercury containing wastes, as such exposing healthcare facility staff, patients or visitors to Hg exposure.	•Mercury management and phase- out plans developed and implemented for each project HCF (included in the development of HCWM plans as part of Activity 2.3.2). •500 medical personnel trained in the clean-up, storage and safe transport of Hg wastes. •Training video produced on "Cleanup and Temporary Storage of Mercury Waste for Health Care Facilities" in Kyrgyz and Russian and used in training activities. •Study on staff preferences for cost-effective Hg-free alternatives conducted at a number of project HCFs. •Mercury-free thermometers introduced at the project's HCFs and personnel trained in their use. •Emergency response teams (Ministry of Emergencies) trained on how to respond to large Mercury spills.			the paragraphs following this Table)
Outcome 3.3: Intermediate and long-term storage options for Mercury containing wastes identified	<i>Indicator 10</i> Phased-out Mercury containing thermometers have been safely disposed of as possible within the limitations of the infrastructure present in Kyrgyzstan	•Currently such wastes end up at the Bishkek landfill site, which is not engineered and doesn't have any leachate control, allowing Mercury to seep into the leachate and end up polluting nearby soil and water resources. •The dumpsite is also not fenced and waste pickers living on adjacent plots, have free access to pick through the waste, and as such expose themselves and their families to Mercury containing wastes.	•Assessment for short-term, interim and long-term storage and disposal options for Mercury containing spent products and Hg containing wastes completed (e.g. Khaidarkan Mercury Mine and Plant, EBRD hazardous cell, EBRD demercurization plant, interim storage, disposal abroad, etc.).	On Track to be achieved Satisfactory	Achieved	Satisfactory (please see the details provided in the paragraphs following this Table)

Outcome	Indicator	Baseline	Target	Status at MTR	Level at PIR 2018	TE Rating
			•Treatment/Disposal solution identified for the Mercury-containing equipment phased-out as part of the project			

Outcome 3.1 (Indicator 8)

As was mentioned earlier paragraphs (while deliberating for Outcome 1.2) a Regulatory and Institutional Analysis (RIA) document was developed, including a matrix indicating possible regulatory gaps and needs in the field of HCWM with a focus on UPOPs and mercury releases. The Ministry of Health created an inter-department working group to strengthen the legislative and regulatory framework on healthcare waste management with the objective to reduce unintentional releases of persistent organic pollutants (U-POPs) and releases of mercury. A draft for the national action plan on phasing out mercury and prohibiting mercury containing equipment usage in the healthcare sector has been developed and included in the national HCWM strategy.

The National HCWM Strategy includes;

- a) analysis of the project pilot activities on mercury thermometers phase out from eleven HCFs in Bishkek
- b) development of data base on all mercury sources in the health-care sector
- c) review of developed National Action Plan on phasing out mercury and gradual restrictions mercury containing equipment use in the healthcare sector.

The project would lead to sustained mercury use reductions in the years to come. A consultant was hired by the project for the preparation of amendments in the legislation for the restriction on the import of mercury containing medical devices. Documents has been prepared and submitted to the Parliament for further discussion and approval. At the time of TE the Parliament was giving a final reading to the draft of law, on introduction of amendments and changes to certain legislative acts regarding import regulation of mercury-containing products. The “Rules for working with mercury-containing medical products” were adopted by the Decree of the Government in Feb. 2018.

The achievement of the results for Outcome 3.1 is rated as Satisfactory.

Outcome 3.2 (Indicator 9)

The I-RATs (conducted under Outcome 2.1), determined the number of mercury containing thermometers in all the HCFs in Bishkek. About 3000 digital thermometers were provided by the project to replace the existing mercury containing thermometers. In the eleven (11) pilot facilities, all mercury containing thermometers were replaced with digital. The project also procured a special gas-chromatograph for the MoH to analyze Hg in air, water, soil, blood and hair to start such monitoring and train the staff for its usage.

The project supported three training sessions (33 participants - 2 men and 31 women) from 11 HCFs in Bishkek. The training included different aspects related to mercury-containing waste management. The project also supported training of personals from the 100 FMSs (100 participants - 1 man and 99 women) from 100 FMSs. The training included different aspects related to mercury-containing waste management.

Training on safe handling of mercury waste (emergency preparedness) was also for the personnel of the Ministry of Emergency (23 participants). In order to institutionalize the training module for further use the Ministry, integrated it into the Ministry's curriculum for further use.

An animated video in Kyrgyz and Russian languages for general use on mercury devices, their safe handling and preventive measures “Do you know what to do if your mercury thermometer is broken?” was produced and disseminated through the UNDP Facebook page. Based on this popular video, the MoH and the State Agency on Environment Protection and Forestry cooperated to prepare a poster which was entitled “Do you know what to do if your mercury thermometer is broken?”. The poster was distributed among schools and HCFs in Bishkek.

The achievement of the results for Outcome 3.2 is rated as Satisfactory.

Outcome 3.3 (Indicator 10)

The project supported collection, transportation and temporary storage of 1,300 Hg-containing thermometers as well as the kits to handle the situation of accidental leakages. Interim storage for collected Hg thermometers was selected, refurbished. A specialized company hired under the project managed the collection and transportation of phased-out thermometers to the temporary storage.

A Memorandum of Understanding (MoU) with the Khaidarkan Mercury Mining Plant and the Ministry of Health for the treatment and disposal of phased out thermometers (1,300 items) was signed for one year with a possibility of extension. The Khaidarkan Mercury Mining Plant transported and disposed the phased out mercury thermometers.

The achievement of the results for Outcome 3.3 is rated as Satisfactory.

Based on the level of achievements for different Outcomes and the Indicators, the achievement of results for Component 3 of the project is rated as ‘Satisfactory’.

5.1.4 Attainment of Results - Project Objectives

The stated objective of the project was to “Implement Best Environmental Practices (BEP) and Best Available Technologies (BAT) in the health-care sector to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention to reduce UPOPs as well as Mercury releases”. Project document has specified the Indicators, the Baseline situation and the Target values of the indicators. In the above paragraphs the achievement of results for different components (and the outcomes) of the project was presented. Table 16 provides the summary of the achievement of results for different components and outcomes of the project.

Table 16: Summary of Achievement of Results for Components and Outcomes of the Project

Component	Outcome	Status at MTR	Level at PIR 2018	TE Rating
Component 1: Strengthening of the National Regulatory and Policy Framework for Health Care Waste Management	Outcome 1.1 The policy framework for Health Care Waste Management enhanced	Achieved Satisfactory	Achieved	Achieved Satisfactory
	Outcome 1.2 The regulatory and policy framework for Health Care Waste Management enhanced.	On Track to be achieved Satisfactory	Achieved	Achieved Satisfactory
Component 2: Implementation of Best Available Technologies (BAT), Best Environmental Practices (BEP) for Health Care Waste Management (HCWM) Systems	Outcome 2.1: Accurate insight in the HCWM situation at each of the HCFs supported by the project.	Achieved Satisfactory	Achieved	Achieved Satisfactory
	Outcome 2.2: Allocation of HCWM technologies, devices, supplies and Technical Assistance (TA) needs determined for each HCF	On Track to be achieved Satisfactory	Achieved	Achieved Satisfactory

Component	Outcome	Status at MTR	Level at PIR 2018	TE Rating
	Outcome 2.3: UPOPs releases reduced as a result of improved HCWM systems in supported HCFs	On Track to be achieved Satisfactory	Achieved	Not assessed separately
	Outcome 2.4: National training modules on HCWM available and being used by the MoH (preventive Medicine), national training centers and Medical Faculties	On Track to be achieved Satisfactory	Achieved	Achieved Satisfactory
Component 3: Implement Mercury Waste Management and Reduction Activities for the City of Bishkek	Outcome 3.1: Strengthened policy and regulatory framework to enable the phase-out/down of mercury containing products and encourage Hg- free or lower level Hg products	Achieved Satisfactory	Achieved	Achieved Satisfactory
	Outcome 3.2: Improved Mercury management practices at HCFs and phase-out of Mercury containing thermometer	On Track to be achieved Satisfactory	Achieved	Achieved Satisfactory
	Outcome 3.3: Intermediate and long-term storage options for Mercury containing wastes identified	On Track to be achieved Satisfactory	Achieved	Achieved Satisfactory

As can be seen from Table 16 the performance against all the components and the Outcomes of the project has been Satisfactory. Thus, the achievement of results for the project objective, in terms of the results for different Components / Outcomes is rated as Satisfactory. Table 17 provides details of the achievement of the results for different indicators for Project Objectives.

Table 17: Results: Project Objectives: Implement best environmental Practices (BEP) and Best Available Technologies (BAT) in the health-care sector to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention to reduce UPOPs as well as Mercury releases

Indicator	Baseline	Target	Status at MTR	Level at PIR 2018	TE Rating
<i>Indicator A</i> UPOPs emissions reduced as a result of improved HCWM treatment systems used by HCFs benefitting from the project.	•Kyrgyzstan's NIP, calculated that the total releases of dioxins in 2003 were 30.5 g-TEQ. The majority of releases were indicated to be the result of combustion practices, with the greatest contribution made by incineration of medical wastes (7 g-TEQ)	•In total the project expects to reduce UPOPs emissions by 3- TEQ/yr.	Rating not provided	3.468 TEQ/Yr.	Achieved Satisfactory (please see the details provided in the paragraphs following this Table)
<i>Indicator B</i> Country capacity built to effectively phase out and reduce releases of POPs	•The current regulatory framework does not cover all medical waste management challenges, which the country is facing, while existing guidelines do not have any legal status and as such are not enforceable.	•Legal and regulatory framework enhanced through the revision of the national HCWM strategy, the development of a national strategy for anatomical waste, and the development of standards and degrees pertaining to HCWM.	Rating not provided	Not reported in PIR	Achieved Satisfactory (please see the details provided in the paragraphs following this Table)

Indicator	Baseline	Target	Status at MTR	Level at PIR 2018	TE Rating
Indicator C Mercury emissions reduced as a result of the phase-out of Mercury containing medical thermometers and improved management of Mercury containing wastes.	•No national Mercury Assessment has been undertaken yet, but based on 2011 and 2012 import figures, between 58 and 305 kg of Mercury, contained in medical thermometers, is imported yearly.	•The phase-out of Mercury containing thermometers will result in sustained Mercury reductions of approximately 160 kg Hg/year.	Rating not provided	1.3 Kg of actual reduction in the emissions achieved by the project end due to collection and disposal of Hg containing thermometers. Periodic reduction in future, due to regulations banning Hg containing thermometers will happen	Achieved Satisfactory (please see the details provided in the paragraphs following this Table)

Indicator A

The emissions of UPOPs (as per Project Document) in Kyrgyzstan's NIP in the year 2003 were 30.5 g-TEQ. The majority of releases were indicated to be the result of combustion practices, with the greatest contribution made by incineration of medical wastes (7 g- TEQ). The objective of the GEF project was to reduce UPOPs emissions by 3g TEQ/yr.

The project equipped 100 rural FMSs with the autoclaves for treatment of HCW. On an average these 100 FMSs generate about 12.42 kg of waste every day. Assuming that during a year, FMSs works for 318 days (6 days a week), the FMSs would generate about 3950 kg of infectious waste every year. In the baseline case this waste would have been burned in open near the facilities, leading to the emissions of uPOPs.

The project procured and distributed fourteen autoclaves which have been installed in eleven Health Care Facilities (HCFs) for treatment of about 89,987 kg of medical waste per year (based on I-RAT findings) of infectious healthcare waste. Additionally, the project procured three high capacity autoclaves for strengthening autoclaving points for two new HCFs (annual treatment of 19,580 kg) and for one pilot HCFs among eleven. In the baseline scenario this medical waste would have been disposed off at the dump site, along with the other municipal waste and would have got burned under uncontrolled conditions leading to emissions of POPs. The baseline emissions of UPOPs due to the treatment of HCW has been estimated based on the emission factor for UPOPs for the disposal method which was being used prior the project. Table 18 provides the emission factor for different technologies for disposal of HCW.

Table 18: Emission Factors for UPOPs from Medical Waste Incinerators¹² (Figures in µg TEQ/t of Medical Waste incinerated)

Class	Medical Waste Incinerator type	Air	Residue
1	Uncontrolled batch type combustion, no Air Pollution Control System (APCS)	40000	200
2	Controlled, batch type combustion, no or minimal APCS	3000	20
3	Controlled, batch type combustion, good APCS	525	920
4	High technology, continuous, controlled combustion, sophisticated APCS	1	150
Guidance for Classification of Sources: Class 1: includes very small and simple, small box type incinerators operated intermittently (in which waste loads are ignited and left) with no secondary combustion chamber, no temperature controls and no			

¹² Source: Toolkit for Identification and Quantification of Releases of UPOPs, Stockholm Convention

air pollution control equipment.

Class 2: applies to all medical waste incinerators with controlled combustion and an afterburner, but still operated in a batch type mode.

Class 3: includes controlled batch-type plants, with good APC systems in place, e.g., ESPs

Class 4: includes highly sophisticated medical waste incineration plants that are capable of complying with an air emission 0.1 ng TEQ/Nm³ (at 11% O₂). Whether these plants are continuous or batch type operations is not relevant when they are preheated with oil or natural gas to achieve a furnace operating temperature of usually well above 900°C or higher before medical waste is introduced into the furnace.

Based on the baseline emission factors for emissions of UPOPs and the quantum of medical waste likely to be processed in the autoclaves provided by the project, the baseline emissions of UPOPs has been estimated and given in Table 19. For calculating the emissions of UPOPs in the baseline case the baseline technology considered is 'Uncontrolled batch type combustion with no APCs'.

Table 19: Emission of UPOPs before the project (figures of release are in g TEQ / Yr.)

	Qty. of HCW (Kg./Yr.)	Release in Air	Release in Residue	Total Release
Emission Factor (Microgram / Kg)		40	0.2	
Small Autoclaves at FMSs	3950	0.157984	0.00078992	0.159
Autoclaves at HCFs	89987	3.5994816	0.017997408	3.617
Additional Autoclaves	19580	0.7832	0.003916	0.787
Total	113517	4.541	0.023	4.563

As can be seen from the Table the emissions of UPOPs due to treatment of the healthcare waste in the baseline would have 4.563 g TEQ / Yr. With the implementation of the GEF project a part of this emissions of UPOPs would now be avoided. As not all the plastic health care waste treated in the autoclaves provided by the project gets recycled (PVC based plastic waste still goes to the landfill), thus the achievement would be lesser then what has been given in Table 19.

Further, the figures given in Table 19 is only for the government run HCFs and does not include the privately provided healthcare. With the regulations regarding treatment of HCW coming in force the private HCFs would also be required to get their waste treated and recycled. As per Project Document in Kyrgyzstan private healthcare services are provided by more than 637 licensees (192 businesses and 455 individuals. There are 20 private hospitals, with a total hospital bed capacity of 300 beds).

In view of the deliberations above it is concluded that the project has lead to reduction in the emissions of UPOPs by about 4.5 g TEQ/ Yr. This is against the target of reduction of 3 g TEQ/ Yr. The project has achieved the target for Indicator A of the project objective.

The achievement of results for Indicator A of the project objectives is rated as Satisfactory.

Indicator B

The targets for Indicator B (Country capacity built to effectively phase out and reduce releases of POPs) are the same as those for Component 1 of the project. Thus, the achievement against Indicator B is being done based on the deliberations provided for Component 1 (Outcome 1.1 and 1.2) of the project.

The achievement of targets for Indicator B is rated as Satisfactory.

Indicator C

As was mentioned earlier paragraphs (while deliberating for Outcome 3.1, Indicator 9) a Regulatory and Institutional Analysis (RIA) document was developed, including a matrix indicating possible

regulatory gaps and needs in the field of HCWM with a focus on UPOPs and mercury releases. The Ministry of Health created an inter-department working group to strengthen the legislative and regulatory framework on healthcare waste management with the objective to reduce release of UPOPs and releases of mercury. A draft for the national action plan on phasing out mercury and prohibiting mercury containing equipment usage in the healthcare sector has been developed and included in the national HCWM strategy. The National HCWM Strategy includes;

- a) analysis of the project pilot activities on mercury thermometers phase out from eleven HCFs in Bishkek
- b) development of data base on all mercury sources in the health-care sector
- c) review of developed National Action Plan on phasing out mercury and gradual restrictions mercury containing equipment use in the healthcare sector.

The project would lead to sustained mercury release reductions in the years to come. Documents for amendments in the legislation for the restriction on the import of mercury containing medical devices has been prepared and submitted to the Parliament for further discussion and approval. At the time of TE the Parliament was giving a final reading to the draft of law, on introduction of amendments and changes to certain legislative acts regarding import regulation of mercury-containing products. The “Rules for working with mercury-containing medical products” were adopted by the Decree of the Government in Feb. 2018.

The project document mentions that, in 2011 and 2012, respectively 203,121 and 116,034 medical thermometers were imported in the country. Considering that the need to import the thermometers largely arises due to the breakage of the thermometers, the release of mercury due to use (and breakage) of thermometers is considered to be of the order of 115 to 200 Kg every year. This is considering that on an average a thermometer contains about 1 gram of mercury. With the ban on the imports of mercury containing thermometers there will be reduction in the release of mercury. Considering that the level of import of Hg containing thermometers in the baseline is about 160 thousand numbers and on an average a thermometer contains 1 gm of Hg, the reduction in the release of Hg due to ban on the imports of Hg containing thermometers would be about 160 Kg/ Yr. over a longer period of time. This is in line with the target for Indicator C. **Thus, the achievement of results against Indicator C is rated as Satisfactory.**

Achievement of Project Objectives is rated as Satisfactory.

5.2 Relevance

The main questions for the TE were: (please see Annex B for the evaluation questions)

- To what extent is the activity suited to local and national development priorities and organizational policies, including changes over time?
- To what extent is the project in line with UNDP Operational Programs or the strategic priorities under which the project has been funded?

Kyrgyzstan ratified the Stockholm Convention on Persistent Organic Pollutants (POPs) in July 2005 and with GEF funding and UNEP support developed its National Implementation Plan (NIP) including a National Action Plan (NAP) on POPs. The NIP was approved by the Kyrgyzstan Presidential Decree and transmitted to the Stockholm Convention in the year 2009. As part of the NIP’s preparation, an assessment of unintentional POPs releases was undertaken. In 2003 the total releases of dioxins were determined to be 30.5 g-TEQ. The majority of releases were indicated to be the result of combustion practices, with the greatest contribution made by incineration of medical wastes (7 g-TEQ). The issue of UPOPs releases was taken up as one of Kyrgyzstan’s main priorities in the NIP. The project is directly linked and highly relevant to the implementation of the Stockholm Convention in Kyrgyzstan.

Since a joint project between the Ministry of Health and the Swiss Red Cross in 2005 demonstrated that

proper healthcare waste management in hospitals greatly reduced nosocomial infections, HCWM has been a top priority for the Ministry of Health.

The project is aligned with the GEF Chemicals Focal Area which includes both POPs and Mercury. The project directly contributes to the execution of the National Implementation Plan on POPs by reducing the release of dioxins and furans. The project is in line with UNDP Strategic Plan for the priority area ‘Environment and Sustainable Development’. The relevant areas for the project are;

- Scalable initiatives on sustainable productive capacities
- Effective maintenance and protection of natural capital.
- Conservation and sustainable use of natural resources and biodiversity as well as creation of employment and livelihoods
- Assistance for integrated water resources management and efficient use of water, efforts to protect and restore the health, productivity and resilience of oceans and marine ecosystems, sustainable land management and restoration of degraded land, and management of chemicals and waste.

The relevance of the project has been rated as Relevant.

5.3 Effectiveness & Efficiency

The main questions for the TE were: (please see Annex B for the evaluation questions)

- To what extent the objectives have been achieved?
- To what extent the results have been delivered with the least costly resources possible?
- What are the positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention?

The project has been able to achieve most of its objectives, ‘Implement best environmental Practices (BEP) and Best Available Technologies (BAT) in the health-care sector to assist Kyrgyzstan in meeting its obligations under the Stockholm Convention to reduce UPOPs as well as Mercury releases’.

The project has lead to reduction in the emissions of UPOPs thereby helping Kyrgyzstan to meet its obligations under the Stockholm Convention. The project has also lead to reduction in the releases of mercury.

Although, the implementation of the project started in a timely manner, there were setbacks during its implementation as the project coordinator resigned and it took time to bring the new project coordinator on board. However, due to the proactive approach of the project implementation team and the able guidance of the Project Board the implementation of the project could be carried out in an effective and timely manner.

As the results of the project has been achieved in a cost effective way and in a timely manner the **Effectiveness and Efficiency of the project has been rated as ‘Satisfactory’.**

5.4 Country ownership

The main questions for TE were: (please see Annex B for the evaluation questions)

- Was the project concept in line with development priorities and plans of Kyrgyzstan?
- Were the relevant country representatives from government and civil society involved in project implementation, including as part of the project steering committee?
- Was an inter-governmental committee given responsibility to liaise with the project team, recognizing that more than one ministry should be involved?
- Have the government(s), enacted legislation, and/or developed policies and regulations in line with the project’s objectives?

Although, the government in Kyrgyzstan has limited resources, the amount of effort towards improving the management of healthcare wastes in the past few demonstrates its commitment towards improving the situation. The Ministry of Health has been actively lobbying for the integration of HCWM related activities in the sector-wide approach (SWAp) in the health sector.

For the implementation of the project, there was a high level of involvement of the relevant country representatives from government and civil society and they were members of the steering committee. Many important departments and ministries were the implementation partners for the project. The 'Steering Committee' had members from the relevant ministries and departments of the government.

Some of the partnerships established under the project includes the partnership with the Ministry of Emergency on trainings for safe handling of mercury waste (emergency preparedness); training integration into Centre for Training and Retraining of civil defense specialists; agreement with the Kyrgyz State Medical Institute of Retraining and Proficiency Enhancement to train medical personnel on techniques in the clean-up, storage and safe transport of mercury wastes in Bishkek; HACT agreement with Scientific Production Association Preventive Medicine under the Ministry of Health for development of legislation documents and conduction of training for HCFs; training materials have been integrated into the curriculum of the International University of Kyrgyzstan, Kyrgyz State Medical Institute of Retraining and Proficiency Enhancement, Kyrgyz-Russian Slavonic University, Kyrgyz State Medical Academy and Kyrgyz Medical College.

The 'Steering Committee' also acted as the inter-governmental committee with the responsibility to liaise with the project team.

5.5 Mainstreaming

The main questions for the TE were: (please see Annex B for the evaluation questions)

- How is the project successfully mainstreaming other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and women's empowerment?
- Whether it is possible to identify and define positive or negative effects of the project on local populations (e.g. income generation/job creation, improved natural resource management arrangements with local groups, improvement in policy frameworks for resource allocation and distribution, regeneration of natural resources for long term sustainability).
- Does the project objectives conform to agreed priorities in the UNDP country programme document (CPD) and country programme action plan (CPAP)?
- Whether there is evidence that the project outcomes have contributed to better preparations to cope with natural disasters.
- Whether gender issues have been taken into account in project design and implementation and in what way has the project contributed to greater consideration of gender aspects, (i.e. project team composition, gender-related aspects of pollution impacts, stakeholder outreach to women's groups, etc.)

UNDP has a long history of supporting the development initiatives in Kyrgyzstan. In Kyrgyzstan, UNDP has been working as a key development partner of choice to achieve sustainable human development in economic, social and environmental fronts. Working closely with the Government at the national, regional and local levels, and civil society and the private sector. UNDP aims at eradicating extreme poverty, and reducing inequalities and exclusion to protect both people and the planet. The project was fully compliant with UNDP's environmental and social safeguards defined by integration of precautionary principle into programme/project management cycles. The very design of this project correlates to the main objective of safeguarding to prevent and mitigate undue harm to the environment and people at the earliest possible planning stage, and to identify and realize opportunities to strengthen environmental and social sustainability.

The project design and its implementation has taken specific care to ensure women's participation. Considering that about 80% of the health workers in pilot health facilities are women, improving the HWM practice and phasing out mercury use will have a positive impact on women (reduced impact of POPs, mercury and infections). Overall, given the conditions or opportunities, the project provided

women with safety at the workplace through introduction of proper healthcare waste management in health organizations in the country.

5.6 Sustainability

The main questions for the TE were: (please see Annex B for the evaluation questions)

- Are there financial risks that may jeopardize the sustainability of project outcomes?
- What is the likelihood of financial and economic resources not being available once GEF grant assistance ends?
- Are there social or political risks that may threaten the sustainability of project outcomes?
- What is the risk for instance that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained?
- Do the various key stakeholders see that it is in their interest that project benefits continue to flow?
- Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?
- Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits?
- Are requisite systems for accountability and transparency, and required technical knowhow, in place?
- Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes?

The infrastructure created by the project, for treatment and disposal of the HCW is unlikely to face any issue in terms of availability of funds for operation and maintenance. This is considering the fact that the plastic material in the HCW is recycled, wherein the recycling companies make payments for the plastic collected by them from the HCW management facilities. The revenues collected would be sufficient to support the operation of the entire network of collection, treatment and disposal of the medical waste. **The sustainability of the project from the view point of financial risks is Moderately Likely (ML).**

The actions which have been implemented on the ground, have created a positive impact in the health care workers, the government officials and the communities. There are no socio-economic issues associated with the project. **From the view point of Socio-political risk to the sustainability of the impacts, the sustainability has been rated as Likely.**

As such there is no institutional and governance risk to sustainability of the project results. **From the view point of institutional framework and governance risks, the sustainability of the project is Likely.**

There are no negative environmental impacts of the project. **From the view point of environmental risk, sustainability of the project is Likely.**

The overall sustainability of project results is rated as 'Moderately Likely'.

5.7 Impact

The main questions for the TE were: (please see Annex B for the evaluation questions)

- Whether, the project has demonstrated verifiable improvements in ecological status?
- Whether, the project has demonstrated verifiable reductions in stress on ecological systems through specified process indicators, that progress is being made towards achievement of stress reduction and/or ecological improvement?

Due to the implementation of the SRC project earlier and now with the implementation of the GEF project large parts of the overall health care facilities in the country have got covered for the management of health care waste. Thus, with the implementation of the GEF project the entire country now have proper non-incineration technologies based facilities for management of health care waste.

In case of the component of the project pertaining to management of Mercury, the project design considered that the ban /restriction on the import of Mercury containing medical thermometers will gradually cover public healthcare facilities across the country over a period of time.

The substitution of the incineration technology with the non-incineration (autoclaving) technology would apart from leading to reduction in the emissions of global pollutants (POPs), would lead to reduction in the emissions of local pollutants as well. The project would also lead to reduction in the risk to the health care workers.

6. CONCLUSIONS, RECOMMENDATIONS & LESSONS

The main questions for the TE were: (please see Annex B for the evaluation questions)

- Did the project provide cost-effective solutions in order to address barriers?
- Are these solutions provided in an efficient way?
- What are the best and worst practices in addressing issues relating to relevance, performance and success?
- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives

For addressing the emissions of UOPs and release of mercury, the project successfully carried out the interventions in one of the major sources of such emissions and releases. Incineration and open burning of health-care waste is one of the main sources of dioxins emissions and mercury release. Mercury spills due to breakage of mercury containing thermometers followed by inappropriate disposal is one of the main pathways through which mercury enters the environment.

The objective of the project was to demonstrate and promote best practices and techniques for health-care waste management which at the same time can reduce the emission of UOPs and mercury, and reduce waste borne diseases and risks to health workers in the health care facilities. The project has successfully achieved its objectives.

In order to achieve cooperation from the national counterparts in Kyrgyzstan, the global environmental objective of the project were linked with the quality and effectiveness of the delivery of health services in the country. The rationale of the project was that best practices for health-care waste management leads to improvement in infection control and occupational safety and reduce nosocomial infections.

By improving segregation of healthcare waste and by demonstrating use of non incineration technologies for treatment of HCW the project led to reduction in the emission of UOPs. Due to the project Kyrgyzstan now has new regulations for HCWM. The new regulations will ensure the implementation of environmentally safe waste management at hospital facilities and the disposal by means of BAT/BEP compliant technologies.

Training and capacity building was one of the major efforts of the project. In addition to people who were trained within the project timeframe, it is important to remember that under the project, curricula in the field of HCWM have been established in a couple of educational institutes, due to which the training will continue in the future after the project ends.

6.1 Corrective actions for design, implementation, monitoring and evaluation of project

Recommendation 1: For future project designs: In the results-framework of the project some of the indicators / targets are in percentage terms (please see indicators and targets for Outcome 2.3), with the figures not specified. Also the figures of total number / population on which these numbers are to be applied are not available. It is because of this reason that assessment regarding achievement of results against indicators / targets becomes difficult in quantitative terms and one has to go for qualitative aspects while assessing the achievement of results. It is recommended that in case targets are fixed in percentage terms, the method to determine the number on which these % are to be applied also be provided.

6.2 Actions to follow up or reinforce initial benefits from the project

Recommendation 2: A periodic inspection of the practices being followed regarding disposal of medical waste at HCFs and periodic training of the responsible staff would help to ensure that the sterilization is happening as per the requirements.

6.3 Proposals for future directions underlining main objectives

Recommendation 3: The project has very successfully addressed the issue of handling and disposal of the syringes. However, there is still the problem of disposal of the medical waste made out of PVC (transfusion kits, catheters, oxygen masks, IV fluid bags etc.). It is recommended that the government invite private sector partners to establish recycling facility for PVC containing medical waste. As the backbone for sterilization and collection of the medical waste is already there, there won't be any incremental cost for recycling PVC containing medical waste. On the other hand it is likely to provide some revenue to the Health Care Facilities.

Recommendation 4: The project has supported replacement of mercury containing thermometers with the electronic thermometers at the healthcare facilities. A proposal to replace the mercury containing thermometers at the household levels may also be considered.

6.4 Best and worst practices in addressing issues relating to relevance and performance

Recommendation 5: The syringes being used presently has a rubber component (in the plunger part of the syringe), at the end of the recycling facility these rubber component is manually removed from the plastic part before the recycling. This requires deployment of human resources (cost). It also exposes the workers to a potential health risk. It is recommended that the government may consider a proposal to allow the use of syringes without the rubber part. This may be made mandatory. This will reduce an additional step at the recycling facility and will also take care of any potential health risk to the workers.

Recommendation 6: The recycling facility currently make articles like flower pots etc. out of the plastic recovered out of the syringes. It is recommended that a proposal to produce the containers (using the recovered plastics) for collecting and sterilizing the syringes at hospitals. The container and the syringes after sterilization can then be taken directly to the recycling machine. Without the need to manually empty and transfer the waste syringes a number of times. This will reduce the efforts and will also take care of any potential exposure to the health risks.

ANNEX A. TERMS OF REFERENCES

INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for a Terminal Evaluation (TE) of Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan (PIMS#5155). The essentials of the project to be evaluated are as follows:

PROJECT SUMMARY TABLE

Project Title:	“Protect human health and the environment from unintentional releases of POPs and mercury from the unsound disposal of healthcare waste in Kyrgyzstan”			
GEF Project ID: UNDP	#5068		at endorsement	at completion
GEF Project ID (PIMS):	#5155		(Million US\$)	(Million US\$)
Atlas award ID: Atlas project ID:	00078201 00088593	GEF financing:	1,425,000	1,425,000
Country:	Kyrgyzstan	IA/EA own:		
Region:	ECIS	Government:	2,600,000	2,600,000
Focal Area:	POPs	Other:	4,432,148	4,432,148
FA Objectives, (OP/SP):	Objective CHEM-1 Objective CHEM-3 Objective CHEM-4	Total co-financing:	7,032,148	7,032,148
Executing Agency:	UNDP	Total Project Cost:	8,457,148	8,457,148
Other Partners involved:	The Ministry of Health of the Kyrgyz Republic, the State Agency on Environment Protection and Forestry of the Kyrgyz Republic	ProDoc Signature (date project began):	.03 July 2014	
..		(Operational) Closing Date:	Proposed: July 2017	Actual: July 2018

OBJECTIVE AND SCOPE

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the [UNDP Evaluation Guidance for GEF Financed Projects](#).

The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

The objective of the project is to implement and adopt Best Environmental Practices (BEP) and Best Available Technologies (BAT) in healthcare facilities throughout the City of Bishkek to improve the management, treatment, and disposal of healthcare waste, as well as support a number of rural health posts (~ 100) in Chui and Issyk-Kul Oblast.

The project will assist Kyrgyzstan in meeting its obligations under the Stockholm Convention on Persistent Organic Pollutants (POPs) by adopting environmentally friendly treatment options for healthcare waste, which will lead to a reducing in UPOPs emissions controlled under the Convention (currently unintentionally POPs (UPOPs) are produced when healthcare waste are incinerated or burned in the open).

Another project objective is to reduce mercury releases from the health sector (generally caused by the breakage of Mercury containing thermometers), by supporting the phase out of Mercury containing medical equipment and the introduction of Mercury-free alternatives. This activity will

assist Kyrgyzstan in meeting its obligations to the Minamata Convention on Mercury once it enters into force.

The project consists of four main components:

Component 1: Strengthening of the National Regulatory and Policy Framework for Health Care Waste Management

Component 2: Implementation of Best Available Technologies (BAT), Best Environmental Practices (BEP) for HCWM Systems.

Component 3: Implement Mercury Waste Management and Reduction Activities for the City of Bishkek.

Component 4: Monitoring, Adaptive Feedback, Outreach and Evaluation.

It can be safely assumed, that when the GEF project comes to an end, thanks to joint efforts of the Swiss Red Cross, the GEF and the Global Fund and 95% of HCW in Kyrgyzstan, will be treated by non-incineration. In combination with import restriction on certain PVC containing medical supplies and improved recycling of disinfected waste materials (plastics), the GEF project is expected to result in a reduction of UPOPs emissions of about 3 g-TEQ/yr. By putting import restrictions on Mercury containing thermometers and adopting the use of Mercury-free thermometers in healthcare facilities, the project could result in reducing Mercury emissions from the healthcare sector by 160 kg/yr.

The Project has primary results summarized below:

- the project has set up ten (10) modern autoclaving points in Bishkek;
- the project procured and distributed all necessary supplies as well as fourteen (14) high capacity autoclaves installed in eleven (11) Health Care Facilities (HCFs) in Bishkek;
- a structured network of service and recipient HCFs was elaborated on and established with the governmental support (cluster system with decentralized service points) in Bishkek;
- optimum transportation routes within the updated zoning plan have been determined, digitized and placed on ministerial web-site (<http://map.dgsen.kg/>). Whereas additional vehicle for the transportation of HCW has been procured;
- trainings on the use of non-incineration technologies for the treatment of HCW and plastic segregation for further recycling as well as other necessary training modules were held for 33 participants (2 men and 31 women) from 11 HCFs in Bishkek;
- training of 20 lecturers (3 men and 17 women) from medical universities and colleges were conducted during July 2016 in Bishkek. Training materials on HCWM developed with project support were integrated into the curriculum of four (4) universities and one (1) colleges;
- national HCWM strategy, which includes all the categories of waste generated in the health sector (i.e. general waste, infectious waste, anatomical waste, pharmaceutical waste, chemical waste and radioactive waste) and which includes a National Action Plan and budget on HCWM for 2017-2020 approved by the Ministry of Health on 20 July, 2017 by its #649 Order;
- project procured 100 mini-autoclaves (tested positively as compared to table-mounted pressure cookers proposed originally) and necessary supplies have been distributed among 100 FMSs and Standard Operation Procedures (SOPs) for these technologies approved on 10 May of 2017 by #377 Order of Ministry of Health of the Kyrgyz Republic (MoH). Trainings on the use of non-incineration technologies for the treatment of HCW and plastic segregation for further recycling as well as other necessary training modules were held for 100 participants (1 male and 99 female attendees) from 100 FMSs in Chui and Issyk-Oblasts;
- the project procured 3,000 mercury-free thermometers in line with the project plans for the eleven (11) HCFs and their needs. It also procured materials for the collection, transportation and temporary storage of 1,300 Hg-containing thermometers as well as de-mercurization kits in case of accidental leakages. Interim storage for collected Hg thermometers has been selected, refurbished, and the floor covered with ethoxyline resin to avoid mercury's penetration into the floor area. A special company has been hired to manage the collection and transportation of phased-out Hg-

thermometers to the temporary storage;

- a Memorandum of Understanding (MoU) with the Khaidarkan Mercury Mining Plant and the Ministry of Health for the treatment and disposal of phased out thermometers (1,300 items) was signed on 7 October 2016 for one year with a possibility of extension;
- with the aims to institutionalize the safety related trainings for further use, the Centre for Training and Retraining (CRT) of Civil Defense specialists under the Ministry of Emergency Situation conducted day-long three (3) trainings (6, 17, 24 March 2017) on the “Safe Handling of Mercury-containing waste (Emergency case)” for 100 employees (89 men and 11 women) from all regions of the country. The module has been integrated into the CTR's curriculum for further use;
- Kyrgyz State Medical Institute of Retraining and Proficiency Enhancement trained 400 medical personnel on techniques in the clean-up, storage and safe transport of mercury wastes in Bishkek followed by integration of the training module within the curriculum of the KSMIR&PE (distant learning options are being considered);
- the project procured a special gas-chromatograph for the Ministry of Health to analyze mercury presence in air, water, soil, blood and hair to enable better monitoring. Initial results will be available in the later stages;
- in 2016, during the elaboration of legislative documents for de-mercurization activities, it was revealed that authorized bodies (Ministry of Emergency Situation KR) lack equipment for determination of mercury emissions into the environment, chemical reagents and tools for de-mercurization of mercury releases, personal protective equipment (PPE) for working with mercury accidents (which constitute 1st class of hazard according to the national classification). Therefore, the project procured de-mercurization toolkits for the Bishkek Department of Ministry of Emergency Situation.

EVALUATION APPROACH AND METHOD

An overall approach and method for conducting project terminal evaluations of UNDP supported GEF financed projects have been developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance, effectiveness, efficiency, sustainability, and impact**, as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included with this TOR. The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders. Interviews will be held with the following organizations and individuals at a minimum:

Key stakeholders:

- UNDP Senior Management;
- The Ministry of Health of the Kyrgyz Republic and its departments (Department on Diseases Prevention and State Sanitary Epidemiological Control, Scientific Production Association “Preventive Medicine” and etc.);
- The State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic – GEF Operational Focal Point and Project Focal Point;
- The Ministry of Emergencies of the KR;
- Target HCFs;
- UNDP “Sustainable Development” Dimension and its projects;
- NGOs;

- MPU-Chemicals/RCU-Istanbul.

The evaluator will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in [Annex B](#) of this Terms of Reference.

EVALUATION CRITERIA & RATINGS

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework (see [Annex A](#)), which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: **relevance, effectiveness, efficiency, sustainability and impact**. Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in [Annex D](#).

Evaluation Ratings:			
1. Monitoring and Evaluation	<i>rating</i>	2. IA& EA Execution	<i>rating</i>
M&E design at entry		Quality of UNDP Implementation	
M&E Plan Implementation		Quality of Execution - Executing Agency	
Overall quality of M&E		Overall quality of Implementation / Execution	
3. Assessment of Outcomes	<i>rating</i>	4. Sustainability	<i>rating</i>
Relevance		Financial resources:	
Effectiveness		Socio-political:	
Efficiency		Institutional framework and governance:	
Overall Project Outcome Rating		Environmental :	
		Overall likelihood of sustainability:	

PROJECT FINANCE / COFINANCE

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill. US\$)		Government (mill. US\$)		Partner Agency (mill. US\$)		Total (mill. US\$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants								
Loans/Concessions								
• In-kind support								
• Other								
Totals								

MAINSTREAMING

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

IMPACT

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: a) verifiable improvements in ecological status, b) verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements.

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report ([Annex F](#)) must include a chapter providing a set of **conclusions**, **recommendations** and **lessons**. Conclusions should build on findings and be based in evidence. Recommendations should be prioritized, specific, relevant, and targeted, with suggested implementers of the recommendations. Lessons should have wider applicability to other initiatives across the region, the area of intervention, and for the future.

A useful tool for gauging progress to impact is the Review of Outcomes to Impacts (ROtI) method developed by the GEF Evaluation Office: [ROTI Handbook 2009](#)

IMPLEMENTATION ARRANGEMENTS

The principal responsibility for managing this evaluation resides with the UNDP CO in Kyrgyzstan. The UNDP CO will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the evaluation team. The Project Team will be responsible for liaising with the Evaluators team to set up stakeholder interviews, arrange field visits, coordinate with the Government etc.

EVALUATION TIMEFRAME

The total duration of the evaluation will be 20 days according to the following indicative plan:

Activity	Timing (indicative)	Completion Date (indicative)
Preparation (desk review)	3 days (May, 2018)	1 May, 2018
Evaluation Mission (in- country field visits, interviews and presentation of preliminary findings)	7 days (May, 2018)	20 May, 2018
Draft Evaluation Report	6 days (May, 2018)	30 May, 2018
Final Report	4 days (May-June, 2018)	8 June, 2018

EVALUATION DELIVERABLES

The evaluation team is expected to deliver the following:

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 1 week before the evaluation mission. (by 1 May 2018)	Evaluator submits to UNDP CO and Project
Presentation	Initial Findings	Last day of the field mission (Friday, by 18 May)	Project Team, UNDP CO and key stakeholders, members of

		2018)	Project Board
Draft Final Report	Draft evaluation report, (per annexed template) with annexes	Within two weeks time after the field mission (by 30 May 2018)	Project team, CO, reviewed by RTA, GEF OFP
Final Report*	Final report addressing and integrating feedback and comments	Within a week time after receiving comments on the draft (by 8 June 2018)	Sent to CO for uploading to UNDP ERC.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report. See Annex [Annex G and H](#) for an evaluation clearance form and an audit trail template.

TEAM COMPOSITION

The evaluation team will be composed of *1 international consultant. The consultant shall have prior experience in evaluating similar projects.* The international Consultant has responsibility over submission of a final report. The evaluator selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities. The project will provide an interpreter to accompany the international consultant during the mission to Kyrgyzstan.

The International Consultant must present the following qualifications:

- A Master's degree or higher in natural or chemical sciences or another closely related field;
- Minimum 4 years of work experience in the fields of environment protection or sound chemical management or healthcare waste management;
- Proven track record of evaluation of projects focusing on environment or chemical management or persistent organic pollutants management, confirmed with at least two project evaluations;
- At least one project evaluation with GEF M&E policies and procedures;
- Experience in working in Central Asian or CIS countries will be an asset;
- Fluency in English. Knowledge of Russian is an asset.

EVALUATOR ETHICS

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the [UNEG 'Ethical Guidelines for Evaluations'](#)

PAYMENT MODALITIES AND SPECIFICATIONS

The service provider will be responsible for all personal administrative and travel expenses associated with undertaking this assignment including office accommodation, printing, stationary, telephone and electronic communications, and report copies incurred in this assignment. For this reason, the contract is prepared as a lump sum contract.

The remuneration of work performed will be conducted as follows: lump sum payable in 1 installment, upon satisfactory completion and approval by UNDP of all deliverables, including the Final Evaluation Report.

%	Milestone
100%	Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report

APPLICATION PROCESS

Recommended Presentation of Proposal:

- Completed Letter of confirmation of interest and availability including financial proposal as per UNDP template;
- a P11 Personal History form, indicating all past experience from similar projects, as well as the contact details (email and telephone number) of the Candidate;
- Copy of ID card;
- Copy of diploma/certificate on higher education; [L]
[SEP]
- Brief description of approach to work/technical proposal of why the individual considers him/herself as the [L]
[SEP] most suitable for the assignment, and a proposed methodology on how they will approach and complete [L]
[SEP] the assignment; (max 1 page) [L]
[SEP]
- Financial Proposal that indicates the all-inclusive fixed total contract price, supported by a breakdown of [L]
[SEP] costs, as per template provided. If an applicant is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under Reimbursable Loan Agreement (RLA), the applicant must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP. Letter of confirmation of interest and availability including financial proposal as per UNDP template. [L]
[SEP]

SCOPE OF PRICE PROPOSAL

- Financial proposals must be “all inclusive” and expressed in a lump-sum for the total duration of the contract. The term “all inclusive” implies all cost (professional fees, travel costs, living allowances etc.);
- For duty travels, the UN’s Daily Subsistence Allowance (DSA) rates are Bishkek, which should provide indication of the cost of living in a duty station/destination (*Note: Individuals on this contract are not UN staff and are therefore not entitled to DSAs. All living allowances required to perform the demands of the ToR must be incorporated in the financial proposal, whether the fees are expressed as daily fees or lump sum amount.*)

ADDITIONAL REQUIREMENTS FOR THE RECOMMENDED CONTRACTOR

Statement of Medical Fitness for Work

Individual Consultants/Contractors whose assignments require travel and who are over 62 years of age are required, at their own costs, to undergo a full medical examination including x-rays and obtaining medical clearance from UN –approved doctor, prior to taking up their assignment. Where there is no UN office nor a UN Medical Doctor present in the location of the Individual Contractor prior to commencing the travel, either for repatriation or duty travel, the Individual Contractor may choose his/her own preferred physician to obtain the required medical clearance.

Inoculations/Vaccinations

Individual Contractors are required to have vaccinations/inoculations when travelling to certain countries, as designated by the UN Medical Director. The cost of required vaccinations/inoculations, when foreseeable, must be included in the financial proposal. Any unforeseeable vaccination/inoculation cost will be reimbursed by UNDP.

TRAVELS

Date	Place	No. of days
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May, 2018	Bishkek	7 days trip	6 overnights
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Field missions to (location), including the following project sites (list):

1. Bishkek (Country office, Project Management Unit UNDP, Project National Partners);
2. Feldsher midwife stations nearby of Bishkek

SECURITY CLEARANCE

The Consultant will be requested to undertake the Basic Security in the Field (BSIF) training and Advanced Security in the Field (ASIF). These requirements apply for all Consultants, attracted individually or through the Employer.

UNDP CONTRIBUTION The security charges are applicable.

UNDP will provide the Consultant with following:

- Project documents (see list of documents on page 15);
- Organize meetings with Project partners;
- Working place;
- Interpreter if needed.

ANNEX B. TERMINAL EVALUATION CRITERIA AND QUESTIONS

Contents	Main questions and Terminal Evaluation Scope
3. Findings: Project design and formulation 3.1 Analysis of LFA/Results Framework 3.2 Assumptions and Risks [SEP] 3.3 Lessons from other relevant projects [L] [SEP] 3.4 Planned stakeholder participation [L] [SEP] 3.5 Replication approach 3.6 UNDP comparative advantage [L] [SEP] 3.7 Linkages between project and other interventions within the sector [L] [SEP] 3.8 Management arrangements	- Were the project's objectives and components clear, practicable and feasible within its time frame? - Were the capacities of the executing institution(s) and its counterparts properly considered when the project was designed? - Were lessons from other relevant projects properly incorporated in the project design? - Were the partnership arrangements properly identified and roles and responsibilities negotiated prior to project approval? - Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry? - Were the project assumptions and risks well articulated in the PIF and project document? - Whether the planned outcomes were "SMART"?
4. Findings: Project Implementation 4.1 Adaptive management 4.2 Partnership arrangements 4.3 Feedback from M&E activities used for adaptive management 4.4 Project Finance 4.5 Monitoring and evaluation: design at entry 4.6 Monitoring and evaluation	<u>ADAPTIVE MANAGEMENT</u> - Did the project undergo significant changes as a result of recommendations from the mid-term review? Or as a result of other review procedures? Explain the process and implications. - If the changes were extensive, did they materially change the expected project outcomes? - Were the project changes articulated in writing and then considered and approved by the project steering committee? <u>PARTNERSHIP ARRANGEMENT</u> - Were there adequate provisions in the project design for consultation with stakeholder. - Whether effective partnerships arrangements were established for implementation of the project with relevant stakeholders involved in the country/region, including the formation of a Project Board? - Whether lessons from other relevant projects incorporated into project implementation? - Whether feedback from M&E activities was used for adaptive management? <u>PROJECT FINANCE / CO-FINANCE</u> - Whether there was sufficient clarity in the reported co-financing to substantiate in-kind and cash co-financing from all listed sources. - What are the reasons for differences in the level of expected and actual co-financing? - To what extent project components supported by external funders were well integrated into the overall project? - What is the effect on project outcomes and/or sustainability from the extent of materialization of co-financing? - Whether there is evidence of additional, leveraged resources that have been committed as a result of the project? <u>PROJECT MONITORING & EVALUATION (AT DESIGN AND AT IMPLEMENTATION)</u> - Is the M&E plan well conceived at the design stage? - Is M&E plan articulated sufficient to monitor results and track progress toward achieving objectives? - Was the M&E plan sufficiently budgeted and funded during project

Contents	Main questions and Terminal Evaluation Scope
implementation 4.7 UNDP and Implementing Partner implementation / execution coordination, and operational issues ^[11]	preparation and implementation? • How effective are the monitoring indicators from the project document for measuring progress and performance; • Whether the logical framework was used during implementation as a management and M&E tool? • What has been the level of compliance with the progress and financial reporting requirements/ schedule, including quality and timeliness of reports; • What has been effectiveness of the monitoring reports and evidence that these were discussed with stakeholders and project staff; • What is the extent to which follow-up actions, and/ or adaptive management, were taken in response to monitoring reports (APR/PIRs); • Whether APR/PIR self-evaluation ratings were consistent with the MTR and TE findings. If not, were these discrepancies identified by the project steering committee and addressed? • Whether changes were made to project implementation as a result of the MTR recommendations. <u>GEF IMPLEMENTING AGENCY EXECUTION - UNDP</u> • Whether there was an appropriate focus on results • Was there adequate UNDP support to the Implementing Partner and project team • Quality and timeliness of technical support to the Executing Agency and project team • Were the management inputs and processes, including budgeting and procurement adequate
5. Findings: Project Results 5.1 Overall results 5.2 Relevance 5.3 Effectiveness & Efficiency 5.4 Country ownership	<u>OVERALL RESULTS</u> • What if the Review the achievement of the objectives against the end of the project values of the log-frame indicators with \indicators for outcomes, indicating baseline situation and target levels, as well as position at the close of the project? <u>RELEVANCE</u> • To what extent the activity is suited to local and national development priorities and organizational policies, including changes over time.? • To what extent the project is in line with UNDP Operational Programs or the strategic priorities under which the project was funded? <u>EFFECTIVENESS</u> • To what extent the objectives has been achieved? <u>EFFICIENCY</u> • To what extent the results have been delivered with the least costly resources possible? • What are the positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention? <u>COUNTRY OWNERSHIP</u> • Was the project concept in line with development priorities and plans of the country? • Were the relevant country representatives from government and civil society involved in project implementation, including as part of the project steering committee? • Was an intergovernmental committee given responsibility to liaise with the project team, recognizing that more than one ministry should be involved? • Have the government(s), enacted legislation, and/or developed policies and regulations in line with the project's objectives?

Contents	Main questions and Terminal Evaluation Scope
5.5 Mainstreaming	<u>MAINSTREAMING</u> • How the project is successfully mainstreaming other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and women's empowerment. • Whether it is possible to identify and define positive or negative effects of the project on local populations (e.g. income generation/job creation, improved natural resource management arrangements with local groups, improvement in policy frameworks for resource allocation and distribution, regeneration of natural resources for long term sustainability). • Does the project objectives conform to agreed priorities in the UNDP country programme document (CPD) and country programme action plan (CPAP)? • Whether there is evidence that the project outcomes have contributed to better preparations to cope with natural disasters. • Whether gender issues had been taken into account in project design and implementation and in what way has the project contributed to greater consideration of gender aspects, (i.e. project team composition, gender-related aspects of pollution impacts, stakeholder outreach to women's groups, etc.)
5.6 Sustainability	<u>SUSTAINABILITY</u> <u>Financial risks:</u> • Are there financial risks that may jeopardize the sustainability of project outcomes? • What is the likelihood of financial and economic resources not being available once GEF grant assistance ends? <u>Socio-economic risks:</u> • Are there social or political risks that may threaten the sustainability of project outcomes? • What is the risk for instance that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? • Do the various key stakeholders see that it is in their interest that project benefits continue to flow? • Is there sufficient public/stakeholder awareness in support of the project's long-term objectives? <u>Institutional framework and governance risks:</u> • Do the legal frameworks, policies, and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? • Are requisite systems for accountability and transparency, and required technical knowhow, in place? <u>Environmental risks:</u> • Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes?
5.7 Impact	<u>IMPACT</u> • Whether, the project has demonstrated verifiable improvements in ecological status? • Whether, the project has demonstrated verifiable reductions in stress on ecological systems through specified process indicators, that progress is being made towards achievement of stress reduction and/or ecological improvement?
6. Conclusions, Recommendations & Lessons	<u>CONCLUSIONS</u> • Did the project provide cost-effective solutions in order to address barriers?

Contents	Main questions and Terminal Evaluation Scope
6.1 Corrective actions for the design, implementation, monitoring and evaluation of the project 6.2 Actions to follow up or reinforce initial benefits from the project 6.3 Proposals for future directions underlining main objectives 6.4 Best and worst practices in addressing issues relating to relevance, performance and success	• Are these solutions provided in an efficient way? • What are the best and worst practices in addressing issues relating to relevance, performance and success? <u>RECOMENDATIONS</u> • Corrective actions for the design, implementation, monitoring and evaluation of the project • Actions to follow up or reinforce initial benefits from the project • Proposals for future directions underlining main objectives

ANNEX C. DOCUMENTS REVIEWED

Project Document	
Project PIF	
MTR Report	
Management Response to MTR	
Project Board Resolutions	
	PB resolution 17 Oct 2017
	PB resolution 20 April
	PB resolution 1 Nov 2017
Annual Work Plans	
	2014 AWP
	2015 AWP
	2016 AWP HCWM
	2017 AWP
	2017 AWP REVISION
	2018 AWP
Annual Project Reports	
	2014 Годовой отчет ПРООН
	2015 Годовой отчет ПРООН
	2016 Годовой отчет ПРООН
	2017 Годовой отчет ПРООН
PIRs	
	PIR-2016
	PIR 2017
	PIR 2018
Budget and financial data	
Inception seminar and report	
	HCWM Inception agenda eng
	KGZ HCWM Inception report 22012015
	LoP Inception Seminar
	LoP Inception HCWM 22082014Eng
Project Board Minutes	
	PB resolution 17 Oct 2017
	PB resolution 20 April
	PB resolution 1 Nov 2017
	1 LoP 1 Nov'16
	1 Resolution of PSC 1 Nov'16
	2 LoP2 17Oct'17
	2 Signed minutes on PSC 17Oct'17
	3 approved minutes of PSC 20'Apr 18
	3 signed LoP 20'Apr 2018
Knowledge and legislation products	
	Approved Government Decree from 15 February # 94
	Draft of law
	M&E Reports
	Report on Sustainability Results
	Report on Gender Impact

ANNEX D: PERSONS INTERVIEWED, MISSION AGENDA

Date	Activity	Participants	Venue
9 July, Monday			
9.00 – 10.30	Meeting to discuss project issues and mission schedule ahead	Kumar Kylychev, SD Dimension Chief Zhyldyz Uzakbaeva, Project Coordinator	PMU office, 109/2 Turusbekova str.
11.00-11.30	Interview meeting with UNDP CO Programme Team	Daniyar Ibragimov, EDRM Team Leader Sherbet Nuzhanova, Programme Associate Aidai Arstanbekova, Monitoring and Evaluation Officer	UNDP CO, 160 Chui ave.
11.30-12.00	Interview meeting with UNDP CO Senior Management	Aliona Niculita, Deputy Resident Representative Daniyar Ibragimov, EDRM Team Leader Sherbet Nurzhanova, Programme Associate Aidai Arstanbekova, Monitoring and Evaluation Officer	UNDP CO, 160 Chui ave.
12.00 – 13.30	Lunch		
14.00 – 14.45	Interview meeting with project partners	Mr. Nurjan Toktobaev, member of the Project Board, Swiss Red Cross Project Coordinator	Str. Umetalieva (Sverdlova/Sydykova 187 (office 1))
15.30 – 16.00	Security briefing at CO UNDSS		UNDP PMU, BC Maximum
10 July, Tuesday			
09.30 – 10.30	Interview meeting with the Ministry of Health of the KR	Mr. E. Checheibaev, Chair of the Project Board, Deputy Minister of the Ministry of Health of the KR Mr. Baktygul Ismailova, Project's OFP, Head of Public Health Department	The Ministry of Health, 140 Moskovskaya str.
11.00 – 12.00	Interview meeting with the State Agency on Environment Protection and Forestry under the Government of the KR	Mr. A. Rustamov, GEF OFP, Deputy chair of the Project Board, Director. Mr. Baigabyl Tolongutov, Director of Environmental Safety Center, Project FP Mr. Baglan Salykmambetova, Head of the International Department, Project FP	Office of the SAEFP, 142 Gorkogo str.
12.00 – 13.00	Lunch		
13.00 – 14.00	Interview meeting with project partners (SPA Preventive Medicine Experts)	Mr. Kravcov A.A, UOPs component;	Office of the National hospital
14.30 – 15.00	Interview meeting with project partners (SPA Preventive Medicine Experts)	Mr. Kasymov O.T., Director Mrs. Sharshenova A.A., Mercury component	Office of Preventive Medicine, 3 Scrabina str., 307 room
16.00 – 16.30	Meeting with project partner	Mrs. Nurila Altymysheva , Representative of Kyrgyz State Medical Institute of Retraining and Proficiency Enhancement	Kyrgyz State Medical Institute of Retraining and Proficiency Enhancement,

Date	Activity	Participants	Venue
11 July, Wednesday,			
9.00 – 9.30	Meeting with lawyers regarding the legislation (approved by Government)	Mr. Nurgazy Jokunov, Head of Quadro Group	PMU Office, Turusbekova str.
10.00 – 10.30	Meeting with vice-speaker of Jogorku Kenesh regarding the promotion of legislation on import restriction of Hg containing goods	Mr. Mirlan Bakirov, Vice -speaker of Jogorku Kenesh	Jogorku Kenesh,
11.00 – 16.00	Site visit to 4 healthcare facilities (autoclave points) in Bishkek: • HCF №1 • HCF under President • Maternity House 1 • Blood Center	Project Team • HCF №1 (Galina Dmitrievna) • HCF under President (Ilima Beishenovna) • Blood Center (Jibek Mukashevna) • Maternity House 1 (Olga Alekseevna)	• HCF №1 (Fuchika str.), • HCF under President (Kievskaya str.), • Blood Center (Chui str.) • Maternity House 1 (Moskovskaya str.)
16.30 – 17.00	Meeting with awareness raising company	Mr. Vecheslav Goncharov, Awareness raising company	Office of the PMU
12 July, Thursday			
8.30 – 14.00	Site visit to 3 rural health posts (FMSs) in Chui	• Republican centre of infection control (Uulke and Asel) • Mrs. Simura Abdrahmanova, FMS Gornaya Maevka, Alamedin rayon • Mrs. Saikal Shermatova, FMS Kyrman, Alamedin rayon • Mrs. Kulzeinep Nazarkulova, FMS Lesnoe, Sokuluk rayon	3 rural health posts (FMSs) in Chui
14:00 – 14:30	Interview meeting with project partners on HCWM strategy	Mrs. Gulnara Saryeva, DGSEN under MoH	Frunze str. 535, DGSEN
15.00 – 15.30	Interview meeting with project partners	Mr. Mirlan Djooshebekovich Director of Autobasa and Mr. Janybek Kasykenov project consultant on transportation system	Autobasa MoH
16.00 – 16.30	Interview meeting with project partners	Mrs. Chekistrova Cholpon, Ministry of Emergency Situations of the KR	MES, Toktonalieva
13 July, Friday			
09.00 – 12.00	Working on the PPT		
12.00 – 13.00	Lunch		
13.30 – 16.00	Preliminary findings presentation	All relevant stakeholders	Office of the PMU

Date	Activity	Participants	Venue
16.15 – 17.00	Debriefing meeting with UNDP SM	Aliona Niculita, DRR Daniyar Ibragimov, EDRM Team Leader Kumar Kylychev, SD Dimension Chief Zhyldyz Uzakbaeva, Project Coordinator Sherbet Nuzhanova, Programme Associate Aidai Arstanbekova, Monitoring and Evaluation Officer	UNDP CO, 160 Chui ave.

ANNEX E: PROJECT RISKS AND RISK MITIGATION

Risk	Mitigation Measures
1. Un-clarity of the roles and responsibilities of the two key ministries (Ministry of Health and the State Agency for Environmental Protection and Forestry) in aspects of HCWM resulting in no leadership, conflicting decisions, duplication, or slow implementation of project components.	All project stakeholders will be involved in the project's proposal planning phase during which their roles and responsibilities will be clarified and agreed upon.
2. Slow or no enhancement, adoption and implementation of national policies, plans and strategies (including guidelines and standards) on HCWM which are key in creating an enabling environment for replication of BAT/BEP across the country. Experiences from the UNDP/GEF project on PCB management showed that due to constant restructuring of the government, legislation was challenges to get approved in a timely fashion.	The project will support project stakeholders in reviewing and strengthening the national policy and regulatory framework with respect to HCWM, and as such influence and facilitate the creation of an enabling environment. "Den Sooluk" includes HCWM components, which implies that upon approval State funding will be allocated to address HCWM. In addition, this project, in close collaboration with the MoH, is bringing together different donors (SRC, CDC, GEF, WHO) to provide incremental funding to allow the government to implement HCWM activities envisaged for Bishkek, which will ensure approval of strategies and plans. The approach will be to develop a HCWM strategy and accompanying Action Plan which are fully based on activities that will certainly receive funding (as it is a tendency in Kyrgyzstan, not to approve any plan/strategy, if there is not funding to actually implement it).
3. Slow or poor implementation of BAT/BEP practices in healthcare facilities, related infrastructures, technologies, mercury phase-out, and/or training programs.	MoUs with HCFs will outline responsibilities and timelines. The Component 4 evaluation will identify problems and recommend improvements (e.g. the midterm review will evaluate implementation of the "first phase", and make recommendation for implementation of the "second phase"). The evaluation and technology allocation formula will also incentivize healthcare facilities to implement project activities successfully and efficiently considering HCFs that have best and fastest institutionalized best practices will be prioritized.
4. Technology procurement beset by delays, inadequate equipment, wrong specifications, lack of transparency, or non-compliance with UN bidding requirements and procedures.	The competitive bidding process will be centralized for all Bishkek facilities (to ensure economies of scale), will be transparent and adhere strictly to UN requirements and procedures. The project will ensure that technologies meet BAT/BEP and other standards. Considering UNDP is the principal recipient for the Global Fund in Kyrgyzstan, it has previously assumed procurement for HCWM related supplies and technologies for GF activities in Kyrgyzstan. To ensure that procurement practices are transparent, speedy and most cost effective, the project will ensure that procurement of technologies and HCWM supplies is undertaken by UNDP Copenhagen, based on technical specifications drawn up by the project and the national working group on injection safety and management of HCW lead by the Ministry of Health. Technology and HCWM supply specifications will be drawn up in a manner consistent with technologies and supplies procured as part of the previous Swiss Red Cross and Global Fund funded programmes. By relying on non-incineration technologies (VK- 75 Russian

Risk	Mitigation Measures
	made autoclaves) that have a proven track record, and for which national maintenance teams are in place and spare parts are widely available, maintenance costs can be kept low and continued operation of these technologies can be ensured beyond the duration of the project. Regular maintenance and capacity for repair, in combination with budget allocation for HCWM, are the single most important aspects for the sustainability of these type of projects.
5. Insufficient number of technology suppliers involved in the bidding and/or high purchase costs.	Ensuring sufficient outreach to vendors, also conducted within the scope of other UNDP/GEF/HCWM projects, will ensure sufficient vendors. Centralized high-volume procurement will help lower prices. Procurement facilitated by UNDP Copenhagen will ensure that long- term agreements with various international suppliers can be relied upon.
6. Little confidence of healthcare facilities and providers in non-incineration and mercury-free technologies, resulting in continued use of inadequate incinerators and mercury devices.	The project will share technical specifications, standards, test results, and experiences from the current UNDP GEF project. “Recipients facilities” will provide decision-makers at HCFs, national and regional level with information on non-incineration and mercury-free technologies. Finally, the MoH, SDC and in particular the Republic Infection Control Center are currently strong advocates for non- incineration technologies.
7. Environmental risks, such as earthquakes as well as risks posed by landslides (exacerbated by deforestation and the conversion of flatlands to marshes in the southern region of the country) are of particular concern. These risks might impact the project itself as well as replication of project results, in the situation that non- incineration technologies are installed in areas prone to such risks.	As part of an I-RAT and facility baseline assessment, environmental/health risks posed by the management of healthcare waste at facility level will be assessed. These risks (in combination with a multitude of other aspects) will be considered as part of the allocation formula to ensure that non-incineration technologies are placed in secure locations.
8. The open burning of HCW at landfills or hospital sites creates greenhouse gas (GHG) emissions in the form of CO ₂ , CH ₄ , etc. In addition, the transportation of large amounts of HCW waste to landfill and dump sites, due to insufficient segregation practices, results in additional unnecessary GHG emissions. Finally, certain hospitals sell PVC containing medical plastics to recyclers, however inadequate thermal processes, both practiced at healthcare facilities and by recyclers, are sources of GHGs releases. All these aspects contribute to climate change risks.	The implementation of HCWM plans, training and BEP at HCFs will include components related to improved recycling rates and practices, based on a the results of a feasibility report on the recycling of medical wastes. Improved waste segregation and minimization practices, as well as improved recycling rates and practices will result in a significant reduction of waste volumes, and indirectly in GHG and dioxin emissions. Clusters will be served by treatment technologies installed on the premises of the most suitable facility within that cluster. In this manner, the most efficient set-up (minimum transportation requirements and optimum operation of centralized technologies) will enable to keep GHGs emission as a result of transportation and operation of technologies at a minimum and minimize costs. Non- incineration technologies to be installed, will be energy efficient and depending on the type of equipment selected, the use of renewable energy sources will be explored (in connection with climate change mitigation programmes implemented by municipalities in the project areas). Unrecyclable disinfected health-care waste, will be transported to the municipal landfill site, where two decentralized shredders will further reduce waste volumes and waste will be disposed of in a dedicate landfill space/cell to ensure that it’s not burned in the open, further eliminating UPOPs and GHG emissions.

ANNEX E. CONSULTANTS CODE OF CONDUCT FORM

Evaluators/reviewers:

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 limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation/reviewer Consultant Agreement Form

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

Name of Consultant: Dinesh Aggarwal

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

Signed at Noida, India



Signature:

24th September 2018

ANNEX F: AUDIT TRAIL

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
RTA	1		It needs some final proof-reading to remove redundancies/repetition of text/proper numbering of tables – in some cases, sequence is wrong	Corrective action taken, Table numbers corrected
RTA	2		In Table 8, there is a mention of Kazakhstan – needs to be removed	This was an error in the project document. This was mention as a footnote in the draft report. However, mention of the Kazakhstan has now been changed to Kirgizstan
RTA	3		I think the project has exceeded U-POPs targets, so it was reflected – Table 16 (Table 17) needs an update in that regard (the latest PIR can be taken as submitted), and there is a section that describes these achievements on Page 36	Additional information included in the Table
RTA	4		Some contradiction on M&E quality I've seen in the text: in part 4.1 it is mentioned that it was not super strong, and later in the report in part 4.4 which it is rated as good. Same goes for part 4.5	In the text “not” was a type mistake which has now been corrected.
RTA	5		Co-finance calculations have to be completed in the related tables	Agreed Co-financing Table in the required format provided (Table 12)
RTA	6		For recommendations: #1 – I think that % type of measurement is possible, but has to be tied to GEBs in a way to show to the GEF how they area achieved in the GEF tracking tool.	Indicator in the project log-frame (for outcome 2.3) are not for GEBs. Hence, they don't relate to the GEF tracking tool.
UNDP CO	7	Table 1	Total co-financing is 7,032,109 USD according to CEO End request, and prodoc Annex III	In the present case, figures has been taken from the top signed page of the project document. There is a slight difference of USD 39 in the figures of co-financing by the Global Fund mentioned in Annex III and that provided in the signature page of project document. I think signature page is more important, however, I leave it to UNDP and the project team to decide which figure they would like to take. This correction has no also been done in Table 10 For the time being no change is being made.
UNDP CO	8	Table 1 On Project Objectives	Only CHEM 1and CHEM 3 according PIF and CEO End Request. Pease remove CHEM-4	Agreed, correction done
UNDP CO	9	Recommendation 1 On the statement In the results-framework of the project some of the indicators / targets are in percentage terms	Better make the indication, where it was in log-frame	Additional text provided to clarify this
UNDP CO	10	Table 10	Provide Totals	Corrective action done

Terminal Evaluation Report Reviewed and Cleared By:

Commissioning Unit

Name: _____

Signature: _____ Date: _____

UNDP-GEF Regional Technical Advisor

Name: _____

Signature: _____ Date: _____

(to be completed by the Commissioning Unit and UNDP-G