GLOBAL ENVIRONMENT FACILITY (GEF)
UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)

Empowered lives.
Resilient nations.

TERMINAL EVALUATION REPORT

for the Project –
"Complete HCFC Phase-Out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies"

GEF Project ID: 9712 | UNDP PMIS: 6030









Prepared by:

Mr. Alexandre Chaikine, Team Leader (International Consultant)
Mr. Shukhrat Igamberdyev, Team Member (National Consultant)

August 2022

Table of Contents

Acronyms and Abbreviations

CEIT	Countries with Economies in Transition
CIS	Commonwealth of Independent States
CFC	Chlorofluorocarbon
CoEP	Committee of Environmental Protection
ESMP	Environment & Social Management Plan
EU	European Union
FSP	Full Sized Project
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GoT	Government of Tajikistan
GWP	Global warming potential
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
M&E	Monitoring and Evaluation
MEA	Multilateral Environmental Agreement
MLF	Multilateral Fund for the Implementation of the Montreal Protocol
MP	Montreal Protocol
MSP	Medium Sized Project
NGO	Non-Government Organisation
NOU	National Ozone Unit
ODS	Ozone depleting substance
PIC	Prior Informed Consent
PIF	Project Identification Form
PIR	GEF Project Implementation Report
PMU	Project Management Unit
PPG	Project Preparation Grant
RAC	Refrigeration and air conditioning
RTA	Regional Technical Adviser
SDG	Sustainable Development Goals
SESP	Social and Environmental Screening Procedure
Tajikstandart	Agency for Standardization, Metrology, Certification and Trade Inspection under the Government of the Republic of Tajikistan
TE	Terminal Evaluation
ToR	Terms of Reference
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNDP-GEF	UNDP Global Environmental Finance Unit
UNDP-DIM	UNDP Direct Implementation Modality
UNDP POPP	UNDP Program & Operations Policies and Procedures
UNDP TRAC	UNDP targets for resource assignment from the core
UNEP	United Nations Environment Programme

Acknowledgement

The Terminal Evaluation (TE) team would like to acknowledge help and cooperation of the UNDP Project implementation team, including Muhiba Rabejonova, Khurshed Kholov, Akbar Rasulov, and Khurshed Khusaynov in Dushanbe, Tajikistan. They provided support, information and explanations as requested. The TE team would like to express special thanks to Maksim Surkov and Yeliz Oymen at the UNDP Istanbul Regional Hub for support of the evaluation activities.

1. Executive Summary

Project Information Table

Project Title	**PIMS 6030 (MSP): "Complete HCFC Phase-Out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies"**		
UNDP Project ID (PIMS #):	6030	**PIF approval date:**	July 05, 2017
GEF Project ID (PMIS #):	9712	**CEO endorsement date / approval date:**	October 01, 2018 / October 16,
ATLAS Business Unit, Atlas Project ID, Atlas Output ID:	TJK10, 00107571, 00107844	**(ProDoc) signature date:**	February 08, 2019
Country:	Tajikistan	**Date project manager hired:**	October 15, 2019
Region:	Central Asia / CIS	**Inception workshop date:**	March 06, 2019
Focal Area:	Chemicals	**Terminal review completion date:**	July 31, 2022
GEF Focal Area Strategic Objective:	GEF-6	**Planned closing date:**	August 08, 2022
Trust Fund [indicate GEF TF, LDCF, SCCF, NPIF]:	GEF TF	**If revised, proposed op. closing date:**	
Executing Agency/Implementing Partner:	UNDP Tajikistan in partnership with Committee of Environmental Protection under the Government of the Republic of Tajikistan		
NGOs/CBOs involvement:	RAC Association "Artificial Cold"		
Private sector involvement:	No private sector involvement as lead executing agency. Only in capacity of UNDP Contractors for goods & service delivery. Private sector involvement was envisioned under Demo-projects which were not materialized/ implemented due to time limits and project closure.		

Financial Information		
PDF/PPG	**At approval (US$)**	**At PDF/PPG completion (US$)**
GEF PDF/PPG grants for project preparation	$50,000	$49,990.56
Co-financing for project preparation		
Project	**at CEO Endorsement (US$)**	**At TE (US$)**
[1] UNDP contribution:	$0	$33,201
[2] Government:	$1,285,000	$1,285.000[1]
[3] Other multi-/ bi-laterals:	$0	$3,718,166[2]
[4] Private Sector:	$3,985,000	$1,125,000
[5] NGOs:	$495,000	$495,000
[6] Total co-financing [1 + 2 + 3 + 4 + 5]:	$5,765,000	$6,656,368[3]
[7] Total GEF funding:	$1,585,430	$1,242,267
[8] Total Project funding [6 + 7]	$7,383,631.86	$7,898,635

[1] Committee for Environmental Protection, State Customs Department, and Agency for Standardization, Metrology, Certification and Trade Inspection
[2] Ministry of Health and Social Protection, Engineering and Pedagogical College of Dushanbe
[3] Co-financing data indicates funds spent at TE.

Project Description

The "Complete HCFC Phase-Out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies" project (the Project) was built based on the experience and knowledge gained from the GEF-UNDP FSP regional project "Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region (the Regional project)" (2013-2018). The Regional project provided national capacity building and technical support to the adoption of hydrochlorofluorocarbon (HCFC) phase-out strategy in Belarus, Tajikistan, Ukraine, and Uzbekistan[4]. The Regional project, along with its national components, progressed participating countries towards effective implementation of the Montreal Protocol (MP) obligations.

The Project's overall objective is to ensure protection of human health and the environment through sound management of HCFCs and their zero-ODS and low GWP substitutes in Tajikistan. In particular, the project strives to achieve environmental sustainability through:

- Enhancing the national capacity to phase-out HCFCs through strengthening of associated regulatory frameworks, solid capacity building and re-tooling/infrastructure improvements in the country's relevant sectors.
- Introducing best available technologies (zero-ODS and low GWP) to substitute HCFCs.

The project aims at accelerating HCFC phase-out to achieve the 2020 compliance objectives and sustainably reduce the HCFC servicing tail. This includes:

- Understanding the implications of the Kigali Amendment to Montreal Protocol (MP) and conducting a comprehensive ozone depleting substance (ODS) alternatives survey.
- Implementation facilitation of updated national legislation on control of import/export and use of HCFCs, other ODS and ODS alternatives.
- Upgrade of storage capacity for mixed unusable ODS refrigerants; improvement of Customs capacity on import/export control and piloting of an electronic sealing/tracking project for ODS entering Tajikistan.
- Demonstration of zero-ODS and low-global warming potential (GWP) energy efficient cooling technologies in various sectors of the economy - both private and public.
- Completion of the upgrades and strengthening of the servicing sector capacity, including tools and advanced refrigerant identifiers of various refrigerants currently in use.

The Project has also been discussing resource mobilization from International Financial Institutions and Bilateral Agencies, as well as local stakeholders to increase financial investments to the Refrigeration and Air-Conditioning (RAC) sector. These comprehensive outreach activities also help to increase understanding of ozone related issues within a wide variety of stakeholders and end users. Gender mainstreaming strategies were also addressed across components of the Project to involve women in RAC business.

Evaluation Ratings Table

1. Monitoring & Evaluation (M&E)	**Rating[5]**
M&E design at entry	HS

[4] The regional project is a follow up to the medium-sized GEF-4 regional project "Preparing for HCFC Phase-out in CEITs" that was implemented by UNDP in 2008-2009 and helped to develop detailed survey data on HCFCs in CEITs and assisted with elaboration of outlines of HCFC phase-out strategies to meet the Montreal Protocol compliance targets.

[5] See Annex 7 for the rating details.

M&E Plan Implementation	S
Overall Quality of M&E	**S**
2. Implementing Agency (IA) Implementation & Executing Agency (EA) Execution	**Rating**
Quality of UNDP Implementation/Oversight	HS
Quality of Implementing Partner Execution	HS
Overall quality of Implementation/Execution	**HS**
3. Assessment of Outcomes	**Rating**
Relevance	HS
Effectiveness	S
Efficiency	S
Overall Project Outcome Rating	**S**
4. Sustainability	**Rating**
Financial sustainability	ML
Socio-political sustainability	L
Institutional framework and governance sustainability	L
Environmental sustainability	L
Overall Likelihood of Sustainability	**ML**

The rating scales used in the TE report are described in the below table.

Ratings for Outcomes, Effectiveness, Efficiency, M&E, Implementation/Oversight, Execution, Relevance	**Sustainability ratings**
6 = Highly Satisfactory (HS): exceeds expectations and/or no shortcomings 5 = Satisfactory (S): meets expectations and/or no or minor shortcomings 4 = Moderately Satisfactory (MS): more or less meets expectations and/or some shortcomings 3 = Moderately Unsatisfactory (MU): somewhat below expectations and/or significant shortcomings 2 = Unsatisfactory (U): substantially below expectations and/or major shortcomings 1 = Highly Unsatisfactory (HU): severe shortcomings Unable to Assess (U/A): available information does not allow an assessment	4 = Likely (L): negligible risks to sustainability 3 = Moderately Likely (ML): moderate risks to sustainability 2 = Moderately Unlikely (MU): significant risks to sustainability 1 = Unlikely (U): severe risks to sustainability Unable to Assess (U/A): Unable to assess the expected incidence and magnitude of risks to sustainability

Findings and Conclusions:

The review of project outcomes indicates that the Project has delivered most of its end-of-project targets. Two outcomes were not completed due to Covid-19 pandemic implications on the delivery schedule and arrangements made to ensure their implementation. Another outcome has been delayed but the equipment installation started and will be complete before the end of the Project. The Project management team used adaptive management to provide flexibility in the project's approach working with partners and related government institutions and adapting to changing conditions. Flexibility and adaptation were particularly critical for this Project since it had to adjust to government reorganizations and restrictions related to Covid-19 pandemic. The project is a clear

response to national needs and, with a significant engagement/participation of stakeholders in project activities, it demonstrated a positive national ownership strategy.

The demonstration of zero-ODS and low-GWP energy efficient refrigerant technologies including natural refrigerants in agricultural/processing and commercial sector of food storage, as well as implementation of RAC technology with zero ODS and low GWP in large server rooms, were not completed due to Covid-19 pandemic. The pandemic caused delay in timely implementation and completion of this activity since the procured equipment required 12 months Defect Liability Period, which had to be accommodated within the project timeline. Some zero-ODS and low-GWP energy efficient refrigerant equipment for health care facilities have been procured and installation will be carried out in July 2022.

As stated by UNDP, all technical specifications and estimation documents developed by the Project will be transferred to potential beneficiary organizations and RAC Association. RAC Association will further advocate and implement the demo pilot projects, as feasible. All other outcomes were completed or exceeded the expected results.

This is a successful project and at the time of TE it has reached most of its objectives, completed or exceeded most of its expected outcomes and has an optimistic perspective to sustain its impact on ODS management in Tajikistan in the foreseeable future.

1. **Relevance:** The Project is evaluated relevant to the main objectives of the GEF Focal area and to the environment and development priorities of Tajikistan at the local, regional, and national level. It provided necessary funding, guidance and staff support to the unit on ozone depletion of the CoEP to comply with the MP obligations. The Project is highly relevant to the Tajikistan's context and its aim to fulfill country's obligations under the MP.
2. **Project Design:** The Project has been designed and built using the experience and knowledge gained from the GEF-UNDP FSP regional project "***Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region***" (2013-2018) which enhanced national capacity and provided technical support to the adoption of the HCFC phase-out strategy. It strengthens Tajikistan's national capacity to control HCFC import and transit, improve licensing systems and introduce HCFC monitoring. It provided support in capacity development in the State Customs Service to allow effective monitoring of HCFC imports, transit and end-use.
3. **Project Implementation:** The Project implementation has been constrained by a range of challenges beyond Project's control, such as the change in the geo-political environment in Tajikistan and Covid-19 pandemic.
    - Covid-19 pandemic has impacted the overall project implementation and travel restrictions, which put limitations on organization and procurement of the RAC and special equipment. Covid-19 impacted key economy sectors resulting in a slowdown, which caused an uncertainty and delay in previously committed co-financing and investments from private industry to procure environmentally friendly and energy-efficient equipment.
    - The first Project Board meeting was held in March 2019, three months after Local Project Appraisal Committee (LPAC) meeting. This delay was related to the election of the Government of Tajikistan, appointment of a new GEF Operational and Political Focal Point (GEF OFP) for Tajikistan and membership changes in the Project Steering Committee.

The documentation of project performance, risks and challenges could have been improved using more advanced project controls such as **Earned Value** reporting and detailed schedule.

4. **Effectiveness.** The overall effectiveness of the Project was affected by Covid-19 pandemic, creating delays in the completion of the project objectives. Notwithstanding the challenges, there has been a significant level of completion of project activities and outputs. Most of the components were completed and the results have exceeded expectations with the exception of a pilot performance monitoring project for reduction of HCFC leakage at large facilities, which was cancelled due to the time limitation and delay caused by Covid-19 pandemic. The demonstration of energy efficient refrigerant technologies with zero ODS and low GWP has been partially completed, and the rest of equipment should be procured by the end of July 2022.

5. **Efficiency.** With most of the Project components completed and/or exceeding expectations, the implementation challenges mentioned above have adversely affected the overall efficiency of the Project. The Project team, however, managed the challenges adequately and proactively.

6. **Progress to Impact.** The Project has enabled Tajikistan to achieve most of its intended outputs. These included the adoption of a legal and regulatory acts on ODS management, the increase in supply of equipment for ODS detection and recycling, implementation of training and increased awareness among its stakeholders, RAC professionals and general public. The Project had contributed to progress toward reducing environmental stress and improving ecological status of Tajikistan.

7. **Sustainability:** Overall, the project had registered good results in sustainability, regarding financial, socio-political, institutional framework and governance, environmental aspects. The ODS management legislation, supported by the Project, has been implemented and enforced in Tajikistan by the Government. It appears to be sustainable and will likely last for a foreseeable future. The National Ozone Units was formed with assistance of this project and currently is established and funded from the state budget as the new structure of the Committee of Environmental Protection under the Government of the Republic of Tajikistan. The ODS reclamation centers received modern equipment and have been provided necessary training to use it. Sustainability of zero-ODS technology demonstration projects in the institutions of the public sector needs support since the demo projects were only partially completed. After the end of the project, if no further external funding available, the governmental financial resources allocated to the RAC sector are limited. There are several ongoing projects in Tajikistan related to ODS development and RAC sector, which may boost ODS management:

    - UNICEF – GAVI project – on cold-chain system enjoyed the UNDP HCFC II Project's elaborated technical specifications/ engineering elaborations (USD 3,6 million).
    - ADB financed project on establishment of Single Window for Custom Services of the Republic of Tajikistan (~ USD 3 million). The ADB's co-financing to enhance the Custom service is seen as supplementary to UNDP's HCFC Project activities on Establishment/Installation of Satellite Remote E-cargo tracking system (in line with: Outcome 1.3: Strengthening the capacity of specialists of the State Customs Department to control import/export of ODS/ODS alternatives and equipment containing the same.)
    - ADB financed project on improvement of state standards on Education in partnership with UNDP HCFC II Project, RAC and State Standard Agency – provided co-financing and complementary support in development/ elaboration of the State Standard on Education RAC Technicians.

With these and other potential opportunities in green energy development and climate change mitigation of the GEF focal area there may be sufficient opportunities to sustain and scale up the project achievements.

There is only a minor risk to sustainability of the Project from the environmental and political perspectives since Tajikistan has signed all amendments of MP and has expressed its strong commitment to the HCFC phase-out schedules. Tajikistan has actively participated in negotiations related to the recent Kigali Amendment to MP which has been ratified June 29, 2022 and will enter into force on 27 September 2022. This Amendment was developed to reduce environmental impacts from substitution of ODS by ODS-free substances to reduce global warming.

8. **Country ownership.** The Government of Tajikistan has demonstrated strong ownership of the Project. This could be seen from the progress in implementation at the TE stage, at which time most of the project activities were completed. The project has addressed key national needs to improve the management of HCFC. It was designed based on a thorough review of previous GEF projects and included a response to several barriers, which have obstructed an effective reform of the RAC sector. It has been implemented through a participative approach engaging stakeholders all the way from the design of project activities to their implementation. The project partnered with numerous organizations including government entities, academia, NGOs, public organizations, and private sector.
9. **Gender mainstreaming** has been specifically addressed in the project component (Indicator 4.1 Engagement of female students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business). The Project has strategically engaged the Committee on Women and Family Affairs and enhanced partnership between Engineering and Pedagogical College of Dushanbe and RAC Association to involve women into RAC activities such as managing small business, receive and record orders, maintain contact details and office management.

Lessons learned

The following **lessons** were **learned** from the Project:

- The **timely extension** of the project's completion dates could have improved its effectiveness. Justifications for such an extension were sufficiently solid and remaining actions implementable.
- Working with the **RAC Association was the key to success**, as it brought together the participants of the Project into an operational **stakeholder network** with strong **engagement mechanisms** and **inter-twined interests to perform designated roles**. The Committee of Environmental Protection, as a partner of the Project, ensured due **leadership and political will** directed towards completion of the Project objectives and outcomes.
- The project has successfully overcome the challenges of the Covid-19 pandemic through effective implementation of a designated **Business Continuity Plan (BCP)** and **proactive professionalism** on the part of the Project Team.
- The **Engineering and Pedagogical College** of Dushanbe has demonstrated great potential for the introduction and implementation of training programs (**sustaining knowledge base and applied practice**), **enthusing interests amongst young women** (gender mainstreaming), and can be recommended for other projects as a **key partner**.
- It is necessary to increase the budget for the purchase of equipment in comparison with other budget items of the Project (**more of hardware elements**).
- It is necessary to conduct training of personnel in the form of familiarization with **real work practices**.

Recommendations Summary Table provided as follows.

Rec #	TE Recommendations	Entity Responsible	Time Frame
1	**Development of a strategy to ensure compliance with requirements of Kigali Amendment to MP**		
1.1	Initiate the development of a strategy to ensure compliance with requirements of Kigali Amendment to MP.	UNDP Tajikistan, Committee for Environmental Protection under the Government of the Republic of Tajikistan	2022-2024
1.2	Explore partnerships on green finance and GEF climate change mitigation focal area	UNDP Tajikistan, Committee for Environmental Protection under the Government of the Republic of Tajikistan	2022-2025
2	**Presentation of the achievements of the project and the way forward**		
2.1	Participate in the UNDP regional workshop with presentation of the achievements of the project and the way forward	UNDP Tajikistan, UNDP Istanbul Regional Hub	2022-2025
3	**Develop and replicate zero ODS, low GWP, energy efficient technologies in Tajikistan**		
3.1	Provide a plan to develop and replicate zero ODS, low GWP, energy efficient technologies in Tajikistan	UNDP Tajikistan, RAC association	2022-2025
4	**Improvement of the methodology for operational monitoring of indicators of the provided co-financing**		
4.1	Improve the methodology for operational monitoring of indicators of the provided co-financing for the UNDP-GEF projects	UNDP Tajikistan	2022-2025
5	**Availability of the reports produced by the project**		
5.1	Ensure that all technical reports produced by the project be available to the public after the end of the project	UNDP Tajikistan	August 2022

2. Introduction

Purpose and objective of the TE

This report presents findings of the Terminal Evaluation (TE) of the UNDP-implemented (Direct Implementation Modality – DIM) and GEF- financed Project: "Complete HCFC Phase-Out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies". This TE was performed by an International Evaluator - Mr. Alexandre Chaikine and National Expert - Mr. Shukhrat Igamberdyev.

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

The TE is an independent review prepared in accordance with Guidance for Conducting Terminal Evaluations of UNDP-Supported GEF-Financed Projects (UNDP, 2020). It reviews the progress made in achieving of the expected Project outcomes; the relevance, effectiveness, efficiency, and timeliness of project implementation; the issues requiring decisions and actions; and lessons learned about the project design, implementation, and management. The Terms of Reference for the Terminal Evaluation is provided as Annex 1 to this report.

Scope of the Evaluation

This evaluation focuses on assessment of all Project components, determining the relevance, effectiveness, efficiency, sustainability, and impact of the results obtained by the Project, analyzing the components and the expected and achieved results as applicable to for design phase and implementation between February 08, 2019 until July 20, 2022, considering the approach in addressing cross-cutting issues such as gender and human rights, poverty, environment, disaster risk reduction, mitigation and adaptation to climate change.

The broad range of target stakeholders and beneficiaries were interviewed, including government officials, custom officers, technical specialists on project pilot sites, RAC practitioners, teachers, and students.

The project has a national scope for the Republic of Tajikistan and the project components have been carried out throughout all regions of Tajikistan, but the pilot projects were mostly carried out in Dushanbe area. However, this effort will have the national impact that may result from the replicability of the pilots carried out. This evaluation mostly included activities in Dushanbe area with one field trip to ODS waste storage facility located at Yavan Chemical Factory (Khatlon region, 30 km southeast of Dushanbe).

Methodology

The methodological approach adopted for the development of this evaluation is consistent with the Guide for Conducting Terminal Evaluations of GEF-Financed and UNDP-Supported Projects, which aims at a comprehensive analysis of the project based on evidence that supports the reported findings. This approach, employed within the constraints of time and money, yielded data that helped answer the evaluation questions and achieved the evaluation purposes.

The tools used to collect the relevant data are:

- **Documentary review**: Includes all the documents listed in the ToR as well as any additional project documents requested to supplement the missing information in the mentioned

documents. The full list of documents reviewed is contained in Annex 4.

- **Interviews with stakeholders**: Semi-structured interviews provided this evaluation team with the opportunity to speak frankly with key stakeholders. This method also ensured a participatory approach, giving equal voice to all stakeholders and ensuring that different perspectives were evaluated to reach conclusions about the different processes undertaken by the project. The interviews were structured according to the matrix of evaluation questions (Annex 6), so that the five criteria were addressed in the interviews, without necessarily asking a question per criteria or mentioning these criteria in the interviews.
- **Field Missions:** The evaluation field mission was conducted to perform face-to-face consultations with the stakeholders, using semi-structured interviews based on the discussion points in a conversational form. The preparation of the evaluation field mission was done in close coordination with the Project Manager and the UNDP Country Office.

These tools provided important, evidence-based information that was carefully analyzed to draw conclusions, lessons learned, and findings at all stages of the project. Furthermore, they allowed for cross references from different perspectives: each issue raised was addressed from the point of view of the project/document, from the perspective of the government and stakeholders in the private sector and civil society. As a result of both exercises, this evaluation team had information and evidence, which incorporates the vision of the different actors, to reach adequate conclusions on the management of the project.

Data Collection & Analysis

The evaluation includes quantitative and qualitative analyses of Project achievements as related to baseline conditions. It draws upon the conclusions and recommendations of the Project Implementation reports to provide advice on follow-up action needed to support project results.

The evaluation was conducted in phases as follows:

Preparatory phase: We conducted a desk review of documents presented by Project Management Unit (PMU) in UNDP Tajikistan addressing a wide variety of factors including project design, implementation progress, monitoring, and review, as well as policies/ legislation/ regulations. This review was followed by a preparation of assessment questionnaires with a set of discussion points aiming at gathering information from chosen respondents about attitudes, preferences, and actual information, linked to the performance indicators in the evaluation matrix.

The questionnaires were tailor made for key project stakeholders and beneficiaries that were selected for visits and face-to-face interviews during field visits or solicited via follow-up e-mail and/or internet communications.

Evaluation Criteria Matrix: An evaluation matrix (Annex 5) was constructed based on the evaluation scope presented in the TOR. The matrix is structured along the GEF evaluation criteria for TEs and included principal evaluation questions. The matrix provided overall direction for the evaluation and was used as a basis for interviewing stakeholders and reviewing the project implementation reports.

Evaluation Field Missions: The evaluation field mission was conducted to perform face-to-face consultations with the stakeholders, using semi-structured interviews based on the discussion points in a conversational form. The preparation of the evaluation field mission was done in close coordination with the Project Manager and the UNDP Country Office.

To the extent possible, visits of relevant project sites to make directs observations of selected project outputs were also conducted during these evaluation missions. The interviews were planned before the mission to obtain a critical sample of stakeholders' views.

The interviews were conducted to solicit responses to predetermined questions designed to obtain in-depth information about the key informants' impressions and experiences. Triangulation of results, i.e., comparing information from different sources, such as documentation and interviews, or interviews on the same subject with different stakeholders, were used to corroborate or check the reliability of evidence.

The itinerary of the evaluation missions and list of people interviewed during and after the evaluation missions are provided respectively in Annexes 2 and 3 of this report.

Assessment of Evidence: After the data collection phase, data analysis was conducted through review of documents that were made available to the TE team by the PMU and UNDP Tajikistan, as well as other documents obtained through web searches and contacts with relevant projects stakeholders and beneficiaries. The list of reviewed documents is provided as Annex 4.

Evaluation Report: Following the above interview and data collection and review phases, we performed data analysis as the final phase of the evaluation. Data analysis involved organizing and classifying collected information, tabulating, summarizing, and comparing the results with other appropriate information to extract useful information that answers evaluation questions and fulfils the purposes of the evaluation.

The evaluation tasks include:

- Data collection and compilation undertaken in cooperation with the management teams by completing background tables on project activities, outputs, and finances.
- Interviews with project beneficiaries and participants and project management and partners during field studies, to assess results, implementation challenges and lessons learned.
- Analyses of the project design and assumptions, implementation performance and measurable results in comparison to the project management plans and results indicators and targets, and identification of any gaps between design and delivery.
- Field review of five selected representative project sites, including Pharmaceutical and Medical Goods Service Centre" under the Ministry of Health and Social Protection of the Population of the Republic of Tajikistan, RAC Association, Centralized storage of ODS waste at Yovon Chemical Factory OJSC "TajikKhimProm", Dushanbe Regional Customs Administration for Unified Automated Information Systems under the Government of the Republic of Tajikistan, Engineering and Pedagogical College in Dushanbe, and comparative analysis of information reflecting the conditions before and after the Project implementation, as available and applicable, to verify reported results on the key project interventions at selected sites.

The evaluation makes recommendations for Project sustainability, replication and upgrading. These suggestions may be used by the Project partners to build on the gains made during the Project and assess the sustainability mechanism (exit-strategy) of the remaining/ on-going/ or recently completed Project activities including, but not limited to:

1. **Institutional capacity** of the state responsible organizations (i.e., Committee of Environmental Protection, Custom, Standard Agency, Ministry of Labor, Women Committee) on continuation and implementation of the state programs and national strategy on complete phase-out of

ODS and other hazardous chemicals (e.g., HCFC, HFC, etc.) that require support beyond the original project closure date.

2. **RAC Technicians Skills** enhancement, and development of a country's technical capacity. Sustainability and continuation of the implementation of technical education program for refrigeration and air conditioning (RAC) technicians by Engineering and Pedagogical College of Dushanbe city, where the Project provided technical support and established education center for strengthening and increasing of technical capacity and qualifications of RAC technicians of the country. This includes implementation of state program on preparation of the young students, with emphasis on young women and girls, and on RAC education and activities in the future after project closure.
3. **Scale-up/ Replication of RAC technology**: Mobilization and materialization of co-financing from the public and private sector to expand the scale of demonstration projects and improve cost effectiveness of GEF funds use., Increased/new potential and opportunity for scaling-up and replication of the best RAC technologies and equipment piloted through demonstration projects by the Project in partnership with private/ public organization beyond the project completion.
4. **Gender mainstreaming**: Awareness raising activities targeted specifically at women. The Project encouraged enrollment of women into RAC related technical and vocational education through introduction of scholarships for more than 30 women.

Ethics:

Evaluators are held to the highest ethical standards and have signed a code of conduct upon acceptance of the assignment. The evaluation was conducted in accordance with the principles outlined in the United Nations Evaluation Group (UNEG) 'Ethical Guidelines for Evaluations'[6].

Limitations:

In the case of this TE carried out during the global crisis due to the Covid-19 pandemic, the hiring of TE National consultant was delayed and respectively the mission to Dushanbe was delayed for the international consultant. At the time of this evaluation, some of the products are under development and, according to the information obtained, they are expected to be completed during July - August 2022. However, the evaluation team is not certain that they will be delivered in the required quality, therefore, the evaluation team does not consider these products as finished, which affects this evaluation.

[6] Access at: http://www.unevaluation.org/document/detail/100

3. Project Description

Project start and duration, including milestones in the project cycle:

Planned/Actual Start Date:	February 16, 2019 / February 08, 2019
Planned end date:	August 08, 2022 (42 months duration).
LPAC meeting date:	November 30, 2018.

The GEF CEO approved the project for implementation on October 01, 2018 with a grant of $1,585,430 (one million five hundred, eighty-five thousand and four hundred thirty U.S. dollars), a matching contribution of $5,565,000 (five million five hundred sixty-five thousand U.S. dollars). The Inception workshop conducted on March 06, 2019.

The Project's overall objective is to ensure protection of human health and the environment through sound management of HCFCs and their zero-ODS and low GWP substitutes in Tajikistan. In particular, the project strives to achieve environmental sustainability through:

- Enhancing the national capacity to manage the phase-out of HCFCs, through strengthening of associated regulatory frameworks, solid capacity building and re-tooling/infrastructure improvements in the country in these related sectors'
- Introducing best available technologies (zero-ODS and low GWP) as HCFCs substitutes.

The Project is designed with provisions to mainstream environmental sustainability by introducing alternative and energy efficient technologies in RAC sector of Tajikistan to phase out HCFC completely by 2020. The introduction of alternative zero-ODS, low-GWP and, where technically feasible, energy efficient technologies will support the country in smooth transition to environmentally sustainable economy. It will contribute to integrating the principles of sustainable natural resource use into policymaking, legislation, and institutions to ensure sustainable natural resource management for the benefit of current and future generations.

The project includes consideration of gender equality aspects of HCFCs management. This ensures the participation, representation and buy-in of vulnerable workers and community populations in the project's implementation component, as well as inclusion of both mainstream genders into related project activities.

Development context: environmental, socio-economic, institutional and policy factors relevant to the goal and scope of the project

The Covid-19 pandemic, an important socio-economic factor, affected the project scope and schedule. In this context, the project had to adapt and, with an adaptive management approach, redesign its implementation strategy, a situation that is reflected in the realization of some activities virtually or remotely. The economic effects of the pandemic limited access to companies to carry out pilot projects, and the resources available to both public and private actors limited the resources allocated to co-financing the project.

The start of the Project implementation was also delayed because of the election of the Government of Tajikistan, appointment of a new GEF Operational and Political Focal Point (GEF OFP) for Tajikistan and membership changes in the Project Steering Committee.

Problems that the project sought to address:

Hydrochlorofluorocarbons (HCFCs) are ozone-depleting chemicals, used in refrigerants, foam-blowing agents, solvents, fire extinguishers and aerosols. The use of HCFCs is controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol or MP). HCFC also have high global warming potential (GWM).

Tajikistan only uses HCFC-22 utilized for comfort cooling, and commercial and industrial cooling. Tajikistan imports their entire requirement of HCFC, as they do not manufacture this refrigerant. Use of other HCFCs was discontinued through support from earlier projects.

The "***Complete HCFC Phase-Out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies***" project (the Current project, or the Project) has been built on the experience and knowledge gained from the GEF-UNDP FSP regional project "***Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region***" (2013-2018) which provided national capacity building and technical support to the adoption of the hydrochlorofluorocarbon (HCFC) phase-out strategy in Belarus, Tajikistan, Ukraine and Uzbekistan[7]. The initial regional project with its national components strongly advanced the participating countries towards effective implementation of the MP obligations. This Project is the final project for achieving HCFC phase out.

The overarching objective of the GEF-6 Chemicals and Waste Results Framework for Ozone Depleting Substances (ODS) is to promote the sound management of chemicals throughout their lifecycle to minimize adverse effects on the global environment and health of women, children and men through the phase-out and reduction of ODS with a global indicator of 303.44 ODP tons of HCFC phased out.

With help of the Project, Tajikistan has been able to comply with its MP commitment of achieving 99.5% HCFC phase out by January 1, 2020, and further strengthen the capacity to phase out the HCFC service tail of 0.5% by 2030 or earlier. This includes:

- Understanding the implications of the Kigali Amendment to MP, conducting a comprehensive ozone depleting substance (ODS) alternatives survey.
- Implementation facilitation of updated national legislation on control of import/export and use of HCFCs, other ODS and ODS alternatives.
- Upgrading storage capacity for mixed unusable ODS refrigerants; improvement of Customs capacity on import/export control and piloting of an electronic sealing/tracking project for ODS entering Tajikistan.
- Demonstration of zero-ODS and low-global warming potential (GWP) energy efficient cooling technologies in private and public sectors of the economy.
- Completing the upgrading and strengthening of the servicing sector capacity including tools and advanced refrigerant identifiers of various refrigerants currently in use.

The project has also been discussing resource mobilization from International Financial Institutions and Bilateral Agencies and local stakeholders to increase the investment to the Refrigeration and Air-Conditioning (RAC) sector and conduct comprehensive outreach activities to increase understanding of ozone related issues with a wide cross section of stakeholders and end users. Gender mainstreaming has also been addressed across various components to involve women in RAC issues.

[7] The regional project is a follow up to the medium-sized GEF-4 regional project "Preparing for HCFC Phase-out in CEITs" that was implemented by UNDP in 2008-2009 and helped to develop detailed survey data on HCFCs in CEITs and assisted with elaboration of outlines of HCFC phase-out strategies to meet the MP targets.

The Project is well aligned with UNDP sustainable development goals: **SDG#5**. Gender equality, **SDG#8**. Good jobs and economic growth, **SDG#9**. Innovation and infrastructure, **SDG#12**. Responsible consumption, and **SDG#13**. Climate action.

The Project is well aligned with the obligations of Tajikistan to the MP. It will help the country to meet its commitments of phasing out HCFCs within the accelerated schedule of the MP. The following part of the Decision XIX/6 of the Meeting of the Parties, applies to Tajikistan as the Article 2 Party of MP:

For Parties operating under Article 2 of the Protocol (Article 2 Parties) to have completed the accelerated phase-out of production and consumption (of HCFCs) in 2020, based on the following reduction steps: **(a) by 2010 of 75%; (b) by 2015 of 90 %**.

The impact of the project on phase-out of HCFCs in Tajikistan is demonstrated in the tables below. The tables show the HCFC consumption during 2018-2021 reported to the Ozone Secretariat according to the Article 7 of MP.

It follows from the tables, that with the assistance of the Project, Tajikistan managed to phase-out of 0.78 ODP-tons of HCFC in 2014-2016 and has achieved the 90% reduction in 2015 as compared to baseline. Tajikistan's baseline was calculated to be 18.70 ODP tons or approximately 340 tons of HCFC-22 (2003). Tajikistan has been phasing out HCFCs from 2012 onwards due to continuous capacity building support from the GEF and UNDP which produced this cumulative effect.

Reported consumption of HCFC in Tajikistan in 2013-2021

HCFC	**Consumption (ODP tons)**				**Baseline**
	2013	**2014**	**2015**	**2016**	**(ODP tons)**
Total for group CI (HCFC)	2.28	2.01	1.66	1.50	18.70

HCFC	**Consumption (ODP tons)**[8]					**Baseline**
	2017	**2018**	**2019**	**2020**	**2021**[9]	**(ODP tons)**
Total for group CI (HCFC)	1.10	0.68	0.33	0.09	0.085	18.70
Control limits[10]	1.90	1.90	1.90	0.10	0.10	

Tajikistan is committed to promoting zero ODS low GWP energy efficient technologies to phase-out HCFC-22. Until recently, the main barrier to achieving this phase-out has been a lack of commercially available cost effective low GWP technologies alternative to HCFC-22. Hydrofluorocarbon (HFC) based technologies, which are zero ODS but high GWP, were introduced in Tajikistan since they have been commercially available in the global market.

Description of the project's Theory of Change:

The Project Document presents Theory of Change, which is composed of two main goals: i.) Meet Montreal Protocol commitments by phasing out HCFCs and ensure sustainability and, ii.) Introduce technologies using zero-ODS/low-GWP alternatives. The activities set out in the project document sought to generate, through the developed pilots, impacts beyond the implementation period of the project, the successful demonstration leads the other actors to consider and incorporate into their operations the changes observed in the pilots with confidence in obtaining better results.

[8] https://ozone.unep.org/countries/data?report_type=0&party%5B0%5D=221&period_start=2007&period_end=2021&output_type=odp-CO2e-tonnes&control_limits=1

[9] As reported by UNDP Tajikistan in June 2022.

[10] Control limits were set up as 12.2 tons in 2004-2009, 4.7 tons in 2010-2014, 1.9 tons in 2015-2019, and 0.1 tons in 2020.

The long-term impact of the project was indicated as follows:

- Promote policies and programs aimed at achieving 99.5% HCFC phase-out by 2020.
- Tajikistan contributes to Ozone Layer protection.
- Phase-out consumption of high GWP refrigerants and reduce impact on environment.

The project objectives were to reach the following results:

- Comprehensive national legislation implemented.
- Customs and enforcement officers' capacity strengthened.
- Reduction in consumption of HCFCs in assembly/manufacture of RAC equipment.
- Strengthened HCFC reuse system.
- Demonstration projects on HCFC replacement with zero-ODS/low-GWP alternatives implemented.
- Public Awareness activities continued with emphasis on gender.

The TE team discussed the Theory of Change with the Project team and found it adequate, relevant, and not requiring a refining or revision.

Expected results:

The Project consists of four components. Component 1 facilitates an implementation of national legislation and strengthening capacity of customs and enforcement officers on control of HCFC/ODS alternative import/export. Component 2 completes the initial capacity building efforts aimed to strengthen the HCFC re-use system. Component 2 also implements demonstration projects that replace HCFCs with zero-ODS/low-GWP alternatives. Component 3 deals with the public awareness, and Component 4 addresses gender mainstreaming and project management, monitoring, and evaluation.

The high-level description of the expected results provided in the previous section of the report. The detailed description of the expected results, outcomes, and end of the project targets (indicators) provided in Section 4. Findings (Progress Towards Objective and Expected Outcomes).

Total resources:

At the time of the approval of this project, the total financing reached $7,898,635 US. The contribution provided by the GEF is $1,242,267 US, while the contribution committed by the main actors, as co-financing of the project, reaches the sum of $6,656,368 US. Section 4. Finding, Project Finance and Co-finance shows the breakdown of the counterpart committed by each of the sources.

Key partners involved in the project:

UNDP Tajikistan in partnership with Committee of Environmental Protection under the Government of the Republic of Tajikistan are the executing agency/implementing partner. The key project stakeholders and their functions are described below:

a. **Committee for Environmental Protection (CoEP)** under the Government of Tajikistan: Committee develops and implements policies for environmental protection, conservation of biological diversity and forest ecological systems, and sustainable development of mountain areas. It assures state's ecological security and rational use of natural resources. It organizes and implements government control over environmental protection and natural resources use; implements

multilateral environmental agreements (MEAs); and licenses uses, releases, transport, storage, and disposal of toxic materials, including radioactive waste.

b. **State Customs Department and Institute for Advanced Training of the Customs Officers** at the **Customs Agency** of Tajikistan: customs regulate exports and imports of chemical substances and toxic wastes. The department has been a traditional governmental partner in previous Chlorofluorocarbon (CFC) phase-out programs and is currently involved with HCFC phase-out. Its Training Institute has been participating in the capacity building programs for customs' personnel. This ensures continuous training for existing and new officers on a sustained basis.

c. **Committee on Women and Family Affairs** under the Government of Tajikistan is considered state executive entity. It undertakes and leads state policy on promoting and protecting women's rights and interests, creating equal conditions and opportunities for protection of their rights and interests and achieving gender equality at all levels. It aims to strengthen and enlarge areas for active involvement and participation of women in decision-making process for resolution of social-economic affairs, management of governance and society problems, as well as advocating legal and policy regulations, ensuring quality state services and management of state property.

d. **Ministry of Justice** of the Republic of Tajikistan: The Ministry carries out governmental registration of all normative-legal statements, and in this case, those related to sound chemicals management including ODS/HCFC controls.

e. **Agency for Standardization, Metrology, Certification and Trade Inspection** under the Government of the Republic of Tajikistan (Tajikstandart): The Agency issues standards and monitors their implementation. The importance of Tajikstandart for the project's activities is in the development and introduction of applications and safety standards for the use of HCFCs, HFCs and alternative technologies such as natural refrigerants. At the start of the Project only the old former Soviet Union's standards for CFCs, HCFC-22 and ammonia were available in Tajikistan.

f. **Ministry of Education and Science** of the Republic of Tajikistan: This Ministry supervises formulation and adoption of the occupational training and educational curricula for the purposes of capacity building and to achieve more effective HCFC control in Tajikistan. More specific work is also planned in cooperation with the Committee for Women and Family Affairs on placing more focus on teaching women about the basics of management of refrigeration business as explained in the related project sections. The Project enhanced partnership with **Engineering and Pedagogical College of Dushanbe** to involve women into RAC activities and provide education opportunities in RAC sector**.**

g. **The Agency on Statistics** under the President of the Republic of Tajikistan: All reporting on import/exports is implemented through this agency. The CoEP, customs, as well as importing/ exporting business entities submit reports to the agency with regards to imported/exported goods. Notably, a unified (single) type of reporting for business entities (regardless of type of ownership) was introduced as of 1 January 2017. Further work on improving reporting on import/export operations, specifically with respect to HCFCs and alternative refrigerant-based RAC equipment, will be planned with the Agency on Statistics and Customs.

h. **Refrigeration Association:** The RAC Association unites major actors in the equipment servicing sector to disseminate experiences and best practices. It serves representational, organizational and client interest protection functions. Members are involved in assembly, design, and delivery, maintenance of refrigeration and air conditioning equipment.

i. **Private sector (servicing, equipment assembly)**: These sectors are the principal consumer of HCFCs, which translates into overall country's dependence on these ODS-based chemicals. They are primarily impacted by HCFC phase-out, and their cooperation is essential for the project progress.

4. Findings

Project Design/Formulation

Analysis of Results Framework: project logic and strategy, indicators

From the point of view of the TE team, the Project was well designed, with clear, practicable and feasible objectives and components within its timeframe. The design of the Project addresses Tajikistan's priorities in chemicals management to expedite the phase-out of HCFCs and to introduce best available technologies (zero-ODS and low GWP) as HCFCs substitutes. The Results Framework was developed during the project initiation phase (2017-2018) and can be seen in the approved GEF Project Identification Form (PIF). The project preparation activities include:

- Technical review of the consumption level of HCFC and other ODS;
- Gender and stakeholder analysis;
- identification of specific sites for the intervention;
- Integration with the development plans, policies, budgets, and complementary projects;
- Completion of GEF focal area tracking tool: GEF-6 Chemicals and Waste tracking tool;
- Stakeholder consultations during technical review and partnership negotiation.

The project identification form and project preparation grant were approved in July 2017. The output of the technical review has been used for the formulation of the UNDP-GEF project document, financial planning, and co-financing arrangements.

The part VI of Project Document presents a comprehensive results framework that includes outcomes, description of baseline, verifiable indicators, and targets. The results framework contains four Components which include thirteen Outcomes.

Component 1 is composed of five Outcomes: three (Outcome 1.1, 1.2 and 1.4) on consumption surveys, legislation, and policy, as well as standards development. Two (Outcomes 1.3 and 1.5) on capacity building for enforcement of HCFC control, as well as introduction of good practices in maintenance and repair of equipment, including new and alternative technologies.

Component 2 consists of five Outcomes: two on strengthening the HCFC management equipment and training (Outcomes 2.1 and 2.4), two on pilot projects demonstration (Outcomes 2.2. and 2.3), and one (Outcome 2.5) on waste ODS storage facility.

Component 3 has one Outcome for implementing activities on raising public awareness about MP.

Component 4 has one Outcome on women engagement in RAC related business and one Outcome on Project monitoring and evaluation.

The Project components and outcomes are consistent with the Theory of Change, presented in the Project Document (see the Description of the project's Theory of Change in Section 3 above). The well developed and robust Theory of Change includes a clear definition of the problem to be addressed and desired outcomes. The developed Theory of Change does not provide details for an analysis of barriers to and enablers for achieving outcomes, consideration of how to address barriers, and a plan for a withdrawal of the project. However, the initially identified risks, implementation barriers, and proposed mitigations were described in the Project Document, which clearly defines the problems to be addressed and the root causes. The Project withdrawal strategy was discussed with the Project team and the discussion outcome is briefly presented in the Sustainability section of this report below.

The Project Outcomes cover broad areas including ODS legislation development, equipment procurement, training, demo projects of the new technologies, public awareness, and gender mainstreaming. The Outcomes appear coherent with the general objective of the project to achieve compliance with the accelerated MP HCFC phase-out. The Project activities established are consistent for the achievement of the results, these activities were well defined and formulated with a clear relationship to the expected outputs and results. The proposed indicators have proven to be SMART (Specific, Measurable, Attributable, Relevant, Time-bound) for all Components and Outcomes during the project implementation.

Through the implementation of pilots to show the success stories and the subsequent scaling up at the country level, the project would generate socio-economic and environmental improvements, improve employment, and improve the health impact of workers linked to the sectors of intervention of this project. Changes to the regulatory framework will allow the generation of jobs associated with the management of ODS. The Project Component 4 is specifically focused on gender equality and women's empowerment via engagement of women in RAC related business. It is defined with gender-responsive indicators and targets.

Assumptions and Risks

After analyzing the challenges that the project faced during its implementation phase, the TE team determined that the risks identified during the design phase were well analyzed in the context in which the project proposal was developed. During implementation, the project updated the risks as well as the mitigation measures in the prepared Project Implementation Reports.

At the project submission, the risk associated with the introduction of zero-ODP and low-GWP alternative was rated as **Moderate**. These substances are toxic, flammable, and/or with high pressure, and may potentially result in adverse emergency situations. Proper training in the handling of such refrigerants substantially mitigates the noted risks.

There is a risk of generation of HCFC waste from the demonstration projects on replacement of outdated equipment that use HCFC-22 with zero-ODP and low-GWP alternatives. This risk was rated as **Low**. To mitigate this risk, the unrecyclable ODS will be collected and stored at the equipped facility pending decision on ODS destruction.

Risk that female population may not show enough interest in RAC sector career and will not engage in RAC training and activities was rated as **Low**. The awareness program was intended to mitigate this risk and to change wrong perceptions of RAC sector among women.

At the Project submission the external factors appeared to be not particularly relevant to the Project risk identification, however the Covid-19 pandemic significantly affected the implementation of the Project (see the discussion in the Project implementation section below).

In conclusion, although the assumptions and risks identified in the Results Framework of the Project were consistent with the reality of application at the time of design, they were increased by unidentifiable factors at the design stage such as Covid-19.

Lessons from other relevant projects incorporated into project design

The Project was designed based on the experience and knowledge gained from the GEF-UNDP FSP regional project "Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region (the

Regional project)" (2013-2018). The Regional project is a follow up to the medium-sized GEF-4 regional project "Preparing for HCFC Phase-out in CEITs" that was implemented by UNDP in 2008-2009 and helped to develop detailed survey data on HCFCs in CEITs and assisted with elaboration of outlines of HCFC phase-out strategies to meet the Montreal Protocol compliance targets.

The Regional project provided national capacity building and technical support to the adoption of hydrochlorofluorocarbon (HCFC) phase-out strategy in Belarus, Tajikistan, Ukraine, and Uzbekistan. The regional project, along with its national components, progressed participating countries towards effective implementation of the Montreal Protocol (MP) obligations.

Several specific recommendations made in the TE of the Regional project have been accounted for in the development of the Project as it relates to:

- Development of ODS standards;
- Improving the project indicators scheduling, procurement procedures, on-going operational monitoring on provided co-financing for the projects;
- Promotion of ODS-related train-the-trainers programs;
- Supply of refillable refrigerant containers;
- Conducting an analysis of economic benefits of good practices in refrigeration servicing for inclusion in public outreach programs;
- Sharing experience with the use of CO_2 as refrigerant in the region.

The recommendation for improvement of the on-going operational monitoring of provided co-financing for the projects is still applicable to the Current project and could be considered as work in progress.

Planned stakeholder participation

Stakeholders were consulted in the Project design phase and their views and needs were incorporated into the project document. The main stakeholders and beneficiaries of the Project were Committee for Environmental Protection under the Government of Tajikistan and State Customs Department and Institute for Advanced Training of the Customs Officers at the Customs Agency of Tajikistan in terms of government institutions, Refrigeration Association as an association of private companies, and RAC equipment servicing companies that committed to implementation of the pilot projects.
The Stakeholder Engagement plan was presented in the Project Document and it properly identified interactions and roles and responsibilities of the stakeholders and partnership arrangements.

Linkages between project and other interventions within the sector

The project complements the Regional project "Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region" (2013-2018), which included HCFC management in Tajikistan.
During the implementation several projects started in Tajikistan related to ODS development and RAC sector:

- UNICEF – GAVI project – on cold-chain system enjoyed the UNDP HCFC II Project's elaborated technical specifications/ engineering elaborations.
- ADB financed project on establishment of Single Window for Custom Services of the Republic of Tajikistan. The ADB's co-financing to enhance the Custom service is seen as supplementary to UNDP's HCFC Project activities on Establishment/Installation of Satellite Remote E-cargo tracking system (in line with: Outcome 1.3: Strengthening the capacity of specialists of the State Customs Department to control import/export of ODS/ODS alternatives and equipment

containing the same.)

- ADB financed project on improvement of state standards on Education in partnership with UNDP HCFC II Project, RAC and State Standard Agency – provided co-financing and complementary support in development/ elaboration of the State Standard on Education RAC Technicians.

Gender responsiveness of project design

The project design aims to ensure women's participation in related training and capacity-building activities. For this, there will be three interventions: awareness-raising multi-stakeholder participation, and direct engagement of female students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business, which will contribute to ensuring integration from a gender-inclusive perspective.

The Project has strategically engaged the Committee on Women and Family Affairs and enhanced partnership between Engineering and Pedagogical College of Dushanbe and RAC Association to involve women into RAC activities such as managing small business, receive and record orders, maintain contact details and office management.

Social and Environmental Safeguard

The project's overall objective is to ensure protection of human health and the environment through sound management of HCFCs and their zero-ODS and low GWP substitutes in Tajikistan. At the project submission, the risk associated with the introduction of zero-ODP and low-GWP alternative was rated as **Moderate**. These substances are toxic, flammable, and/or with high pressure, and may potentially result in adverse emergency situations. Proper training in the handling of such refrigerants substantially mitigates the noted risks.

There is a risk of generation of HCFC waste from the demonstration projects on replacement of outdated equipment that use HCFC-22 with zero-ODP and low-GWP alternatives. This risk was rated as **Low**. To mitigate this risk, the unrecyclable ODS will be collected and stored at the equipped facility pending decision on ODS destruction.

Project Implementation

Adaptive Management

The Results Framework did not change substantially during the Project implementation. The adopted management structure was setup and implemented according to the arrangements presented in the Project Document, together with description of responsibilities and reporting lines. The decision-making process was conducted according to the arrangements.

There have been delays in conducting the first Project Board meeting which was held in March 2019, three months after Local Project Appraisal Committee (LPAC) meeting. The delay related to the election of the Government of Tajikistan, appointment of a new GEF Operational and Political Focal Point (GEF OFP) for Tajikistan and membership changes in the Project Steering Committee.

There also has been a delay in implementation of some project components due to Covid-19 pandemic. A pilot performance monitoring project for reduction of HCFC leakage at large facilities has been cancelled due to the time limitation caused by Covid-19 pandemic. The demonstration of energy efficient refrigerant technologies with zero ODS and low GWP had also been delayed. The original

recipients of the equipment were changed, and the implementation and co-financing arrangements were re-negotiated with the new partners. Currently the delivery of the demo project expected to be completed by the end of July 2022.

Adjustments and corrective actions during the project implementation were based on the feedback that was provided by the regular monitoring activities conducted by the project team and recorded in the respective Annual Project Reviews. Most corrective actions included modifications of annual work plans for subsequent periods that were approved by the Project Board (also referred to as *Project Steering Committee or PSC*). Major variances between planned and actual activities occurred only due to the cancellation of the pilot performance monitoring project for reduction of HCFC leakage at large facilities and new arrangements for demonstration of energy efficient refrigerant technologies with zero ODS and low GWP.

Actual stakeholder participation and partnership arrangements

Key stakeholders identified at the inception of the Project components were involved in the project implementation according to their expected roles. These included the National Ozone Unit established at the CoEP, the national customs authority, academy, the RAC Association, as well as relevant private sector companies from the RAC manufacturing and servicing sectors.

The Project Steering Committee included UNDP Deputy Resident Representative as a Chairperson, Deputy Head of the Department of State control over the protection and use of atmospheric air, Committee of Environmental Protection under the Government of the Republic of Tajikistan as a Co-chairperson, and the following members:

- Head of the Department for Standardization and Registration of normative technical documents, Agency on Standardization, metrology, certification, trade inspection under the Government of the Republic of Tajikistan.
- Chief Specialist of Economics and Planning Department on Education and Science, Ministry of Education and Science of the Republic of Tajikistan.
- Head of Regional Customs Control, Customs Service under the Government of the Republic of Tajikistan.
- Chairman of the Association of Regional Public Organization “Center of Artificial Cold” (RAC Association) of the Republic of Tajikistan.

CoEP is the implementing partner of the project and played a very important role in coordinating activities with state entities and other institutions. With the incorporation of these actors in the PSC, the integration of actors in decision-making and approval of strategies for ODS management issues was achieved.

The Government agencies and RAC Association participated through coordination with the PSC in the planning of consultancies, procurement of equipment, public awareness campaign, and in the development of pilot projects.

The communication plan and the leadership of CoEP in the communication processes managed to raise awareness about the importance of environmentally sound management of ODS and the possible impacts on the health of the population.

The actual participation of the stakeholders was in accordance with what the Prodoc defined as their main roles. The project document has a Stakeholder Engagement Plan and the identification of

stakeholders, and their roles was correctly defined as it was demonstrated during the Project implementation.

Regarding gender, the project developed the Gender Analysis and Action Plan, which includes a methodology and an intervention plan for the inclusion of gender in the project components (Component 4. Gender mainstreaming).

Gender mainstreaming has been specifically addressed in the project component (Indicator 4.1 Engagement of women-students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business). The Project has strategically engaged the Committee on Women and Family Affairs and enhanced partnership between Engineering and Pedagogical College of Dushanbe and RAC Association to involve women into RAC activities, such as managing small business, consult clients, receive and record orders, maintain contact details and office management.

Project Finance and Co-finance

The Project's planned expenditures were not completely achieved primarily due to Covid-19 implications. In particular, the originally approved GEF grant of $1.585 million was underspent by approximately $300,000 at the time of TE because, as stated by the Project management team in their proposed request for the project extension in November 2021, "*the overall project implementation in Tajikistan slowed down and travel restrictions put additional checks in timely organization and procurement of the RAC and special equipment and tools to the country. International procurement, delivery of project activities, mainly linked with the meetings, round-tables, trainings, and in-country travelling, have required extra time and efforts from Project team due to Covid-19 restrictions, including less footprint and social distancing*". The Project management team proposed a project extension until March 2023 to ensure delivery of the RAC equipment, but the decision was made not to proceed with this option.

The expected co-financing also did not completely materialise because of Covid-19 implications. This primarily relates to the fact that "*The private companies have … postponed all previously planned investments required to replace equipment with zero ozone depleting potential (ODP) and low global warming potential (GWP) alternatives in bigger premises. Therefore, the mobilization of national resources and involvement of bigger companies in demonstration of innovative conversion projects for the implementation of energy-efficient technologies with zero ODP and low GWP for RAC in terms of the implementation of new technologies for the cooling system of larger premises, turn be challenging and forced the UNDP Project to re-programme activities in 2022*". Reprogramming included new arrangements with the Ministry of Health and Social Protection to assist in procurement of refrigeration chambers with Mono-blocks (10 sets) and AC-operating on R290 (propane; 65 sets) for health care facilities. These arrangements resulted in exceeding the originally expected co-financing by almost $0.9 million. The comparison of the committed vs realised co-financing presented in the tables below.

Based on the review of available documents and interview with the project team and stakeholders it appears that the established financial controls allowed the project management to make informed decisions regarding the budget and allow for the timely flow of funds and for the payment of satisfactory project deliverables. The TE Team found the current financial controls for the project generally sufficient but recommends that the timely collection of co-financing data collection receives attention and effective remedial actions by the implementing partners for the future UNDP projects. There were some challenges in collecting consistent information for budget revisions, suitability, and relevance of such revisions.

There were no audits conducted for this Project.

The materialised co-financing both in grants and in kind provided for delivery of the project outcomes and improved its sustainability. Sustainability of the zero-ODS technology demonstration sub-projects in the institutions of public sector needs further support. The demo projects were only partially completed, especially in the health sector in Tajikistan. After the project end and with no external funding available, the governmental financial resources allocated to the RAC sector are limited.

The funds committed for the project (as of the project inception) and actual implementation of the GEF grant are summarized in the tables below. Those summarize information on the co-financing acquired until the terminal evaluation of the project. It follows from the tables that the total co-financing originally pledged by the project beneficiaries was achieved and exceeded at the end of the project.

Co-Financing Table

Co-financing (type/source)	UNDP financing (US$)		Government (US$)		NGO- Public Sector		Academy Institution		Private Sector (US$)		**Total (US$)**	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants		33,202	500,000	3,386,533	155,000	155,000		14,500	1,942,000	58,000	2,597,000	3,647,235
Loans/Concessions												
In-kind support			785,000	1,506,633	340,000	340,000		95,500	2,043,000	1,067,000	3,168,000	3,009,133
Other												
Totals		33,202	1,285,000	4,893,166	495,000	495,000		110,000	3,985,000	1,125,000	**5,765,000**	**$6,656,368**

Confirmed Sources of Co-Financing at TE Stage

Sources of Co- Financing	Name of Co- financier	Type of Co- financing	Investment Mobilized	Amount (US$)
GEF Agency	GEF	Grant	Investment mobilized	1,242,267
Donor Agency	UNDP	Grant	Recurrent expenditure**	33,201
Government	Committee for Environmental Protection	In-Kind	Investment mobilized	485,000
Government	State Customs Department	In-Kind Grant	Investment mobilized Recurrent expenditure	100,000 500,000
Government	Agency for Standardization, Metrology, Certification and Trade Inspection	In-Kind	Recurrent expenditure	200,000
Government	Ministry of Health and Social Protection	In-Kind Grant	Recurrent expenditure Investment mobilized	721,633 2,886,533
Government	Engineering and Pedagogical College of Dushanbe, Ministry of Labor and Employment	In-Kind Grant	Recurrent expenditure	95,500 14,500
Civil Society Organization	Refrigeration Association	In-Kind Grant	Recurrent expenditure	340,000 155,000
Private Sector	EKAUD Ltd	In-Kind Grant	Recurrent expenditure	362,500 22,500
Private Sector	VOSTOK VOLNA Ltd	In-Kind Grant	Recurrent expenditure	330,000 20,000
Private Sector	TAMIRY YAHDON Ltd	In-Kind Grant	Recurrent expenditure	374,500 15,500
Total Co-Financing				6,623,166

**Recurrent expenditures can generally be understood as routine budgetary expenditures that fund the year-to-year core operations of the entity (they are often referred to as 'running costs' – they do not result in the creation or acquisition of fixed assets). They would include wages, salaries, and supplements for core staff; purchases of goods and services required for core operations; and/or depreciation expenses. Some of the typical government co-financing we have previously included (such as routine budgetary expenses for Ministry of Environment operations) will no longer meet this new definition of investment mobilized for these specific countries.

Monitoring and Evaluation

M&E design at entry:

Monitoring and evaluation (M&E) plan with corresponding budget were developed during the design phase of the project. The plans list M&E activities and the designated parties with their responsibilities and corresponding timeframes. All M&E plans have the standard components typical to the projects of this size and complexity. Budget was provided in the Project Documents only for the Inception workshop, Audit[11], and Terminal Evaluation. The costs of a regular monitoring (i.e., the project teams' staff time and UNDP staff and travel expenses) were not included as per the GEF rules for project implementation.

The M&E plan include a baseline, SMART indicators and data analysis systems, and regular monitoring to assess results. The baseline conditions, methodology, logistics, time frames, and roles and responsibilities were well-articulated. The GEF OFP was not involved in the TE process, however the TE team was assured that GEF OFP has been kept informed about the TE.

The M&E Plan at the project entry is rated **Highly Satisfactory (HS)**.

M&E implementation:

Data on specified indicators, relevant GEF Tracking Tools/Core Indicators were gathered in a systematic manner by the PMU. The Project Board (Project Steering Committee or PSC) was established, and the first meeting was conducted in March 2019 at the project Inception workshop. Other Project Board meetings were conducted in January 2020, December 2020, January 2022 and July 2022. Numerous meetings with stakeholders, partners and beneficiaries were held to monitor the performance of the project implementation and to track progress of individual components.

The Inception workshop was held in March 2019. Project Implementation Reports were issued in June 2020 and June 2021. The Annual work plans for 2019, 2020, 2021 and 2022 were developed and agreed to by UNDP Tajikistan.

The TE team was assured that GEF OFP has been kept informed about the M&E activities. The Project activities were described in the respective results frameworks and related workplans and budgets. The TE team reviewed the available Annual work plans and Project Implementation Reports and evaluated the identification of implementation challenges and follow-up actions undertaken by the project implementing team.

The implementation of the Monitoring and Evaluation Plan generally appears adequate for the project performance. However, the TE Team experienced challenges in obtaining comprehensive information about project performance. As the work progressed, most of requested information has become duly available via direct communication with the project management team and at the meetings during the TE mission.

The TE Team was not made aware about inclusion in the M&E system training for parties responsible for M&E activities to ensure that data will continue to be collected and used after project closure. However, the proper government authorities, who's training was part of the project scope, are dealing with the

[11] The audit was not conducted as it didn't meet the criteria for selection of DIM projects for the audit.

collection of technical data such as HCFC phasing out, import and transit of ODS, HCFC recycling and disposition. These data will be collected and processed after the project closure.

Gender mainstreaming has been specifically addressed in the project component (Indicator 4.1 Engagement of women-students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business). The component outcome was monitored and evaluated as the other Project outcomes.

The adequate monitoring of environmental and social risks were identified in line with the UNDP SESP. The TE Team understands that the projects' Theory of Change was reviewed but left unchanged during implementation.

In accordance with the recent project implementation review report (PIR 2021) completed in 2021 the overall project implementation is rated as "**Satisfactory**". There were **no MTR** conducted and the TE findings confirms the conclusion of PIR.

The TE Team found the current financial controls for the project generally sufficient but recommends that the timely collection of co-financing data collection receives attention and effective remedial actions by the implementing partners. There were some challenges in collecting consistent information for budget revisions, suitability and relevance of such revisions.

The project management team planned to request an extension of the project to allow for completion of the Component 2 activities, but the decision was made not to proceed with such request. Extension of the project could have improved its performance and bring more benefits to stakeholders.

Monitoring and Evaluation implementation is rated **Satisfactory (S).**

The overall quality of the Monitoring & Evaluation system for the entire project is rated **Satisfactory (S)**.

Monitoring & Evaluation (M&E)	**Rating**
M&E design at entry	HS
M&E Plan Implementation	S
Overall Quality of M&E	S

UNDP implementation/oversight and Implementing Partner execution and overall assessment of implementation/oversight and execution

UNDP (Implementing Agency) implementation/oversight:

The Project is implemented following UNDP's Direct Implementation Modality (DIM). The Implementing Partner for this project is UNDP Tajikistan. The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.

TE Team found effective delivery of the Project management activities by UNDP, including project identification, concept preparation, appraisal, preparation of detailed proposal, approval and start-up,

oversight, supervision, completion, and evaluation. The Project annual reports and Project implementation reviews appear to be fair and realistic. UNDP provided an adequate oversight of the management of environmental and social risks as identified through the UNDP SESP.

The Project has successfully overcome the challenges of the Covid-19 pandemic through effective implementation of a designated Business Continuity Plan (BCP) and proactive professionalism of the Project Team. This demonstrates high quality of risk management and responsiveness to significant implementation problems, and adequate oversight of the management of environmental and social risks.

Based on the abovementioned the UNDP implementation/oversight is rated as **Highly Satisfactory (HS).**

UNDP Implementing Partner Execution

UNDP Tajikistan in partnership with the Committee of Environmental Protection under the Government of the Republic of Tajikistan (CoEP) are the Executing Agency/Implementing Partner of the Project. There were no substantial shortcomings in the UNDP and CoEP quality of implementation/execution. There was an adequate oversight of management of environmental and social risks, as identified through the Project documents.

The Quality of Implementing Partner Execution was assessed primarily during the evaluation mission and via communication with the project management team. The partnership with Committee of Environmental Protection under the Government of the Republic of Tajikistan was a key factor of the Project success. Not only the CoEP provided regulatory support and endorsement to the Project, but they also took a leading role in public outreach, education, implementation of Kigali amendment to MP, development of relevant by-laws, and other Project activities on a regular basis. The CoEP chaired the Board meetings, reviewed, and approved project implementation reports, provided advice and guidance as required.

Based on the abovementioned the UNDP implementing Partner execution is rated as **Highly Satisfactory (HS).**

The Overall quality of Implementation/Oversight and Execution is rated **Highly Satisfactory (HS)**.

UNDP Implementation/Oversight & Implementing Partner Execution	**Rating**
Quality of UNDP Implementation/Oversight	HS
Quality of Implementing Partner Execution	HS
Overall quality of Implementation/Oversight and Execution	HS

Risk Management, including Social and Environmental Safeguards

As stated in the Project Document, the project is explicitly designed to mainstream environmental sustainability objectives by introducing alternative and energy efficient technologies in RAC sector of Tajikistan and completing HCFC phase out by 2020. The introduction of alternative zero-ODS, low-GWP and, where technically feasible, energy efficient technologies will support the country in smooth transition to environmentally sustainable economy. It will contribute to integrating the principles of sustainable natural resource use into policymaking, legislation, and institutions to ensure sustainable natural resource management for the benefit of current and future generations.

The Covid-19 pandemic was an important factor during the second half of the project's implementation period. This factor, which was not identifiable at the time of project design, greatly increased the level of probability and significance of previously identified risks. The state and federal governments had to focus their resources on responding to the pandemic, while private companies had their activities restricted by the sanitary measures established by the health authorities. Finally, the project team had limited the possibilities of travel and the carrying out of face-to-face activities.

The change of government represented a change in the high-level authorities of the partner institutions of the project, this was addressed by the project management working with middle management, to maintain the commitment of the institutions to the activities established within the framework of the project.

No new risks or changes to existing risks were reported on in the annual PIRs. The project's risk register was maintained during implementation. It appears that new risks associated with Covid-19 pandemic were not added to the risk registry and were not reported on in the annual PIRs. The safeguards management measures appear to be effective in risk mitigation.

Project Results and Impacts / Progress Towards Objective and Expected Outcomes

Relevance

Alignment with national priorities:

Tajikistan acceded to the Vienna Convention in 1996, to the MP and its London Amendment in 1998, and to the Copenhagen, Montreal and Beijing Amendments in 2009, assumed all relevant obligations of the MP. Implementation of the targets began in 1998 with the development of the Country Program, which was completed and adopted in 2002. As a part of fulfilling commitments undertaken by the Republic of Tajikistan in connection with ratification of the Vienna Convention and the MP and its respective amendments, the Government of the Republic of Tajikistan has adopted several specific regulations aimed at ensuring the institutional process of reducing ODS (CFCs/chlorofluorocarbons/ and HCFCs /hydro chlorofluorocarbons). The most recent resolution specifically addresses HCFCs. The Project objectives are fully in line with the national development priorities and commitments as it relates to ODS management and addressing climate change risks.

As stated in the National Development Strategy of the Republic of Tajikistan for the period up to 2030[12], the goal of the further economic development is to achieve sustainable, high and regionally balanced and equitable growth. Tajikistan is especially vulnerable to the environmental shocks. It is one of the most disaster-prone countries in the world associated with climate change. Therefore, the National Development Strategy, along with the principles of industrialism and innovation, highlights the principle of prevention or reduction of vulnerability of future sustainable development as a first step. The Project contribution to global reduction of ODS and GHG emission, input to the overall socioeconomic development and implementation of innovations in Tajikistan clearly demonstrates the high extent to which the Project is appropriately responsive to political, legal, socioeconomic, and institutional changes in the country.

[12] https://www.undp.org/tajikistan/publications/national-report-implementation-strategic-documents-country-context-sustainable-development-goals

The National Development Strategy emphasizes the need for enhanced human development capital that was set in the NDS-2030 as a complex, cross-sectoral priority that addresses the issues of education, public health, social protection and gender equality. The specific gender mainstreaming component of the Project is fully aligned with the national strategy to enhance gender equality via education and professional development of women in RAC sector.

Alignment with GEF strategic priorities:

This project will positively contribute to the following **Sustainable Development Goals (SDGs)**, as indicated in the Project's Theory of Change:

- **SDG#5. Gender Equality** – Target: Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.

- **SDG#8.** Good Jobs and Economic Growth – Target: Achieve higher levels of economic productivity through diversification, technological upgrading, and innovation, including through a focus on high-value added and labor-intensive sectors.

- **SDG#9. Innovation and Infrastructure** – Target: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.

- **SDG#12. Responsible consumption and production -** Target: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil to minimize their adverse impacts on human health and the environment.

- **SDG#13. Climate Action** – Target: Integrate climate change measures into national policies, strategies and planning.

The project is well aligned with UNDP priorities in Tajikistan. This project contributed to the country outcome included in the UNDAF/Country Programme Document: UNDAF OUTCOME #6: People in Tajikistan are more resilient to natural and human-made disasters resulting from improved policy and operational frameworks for environmental protection and sustainable management of natural resources. In particular UNDAF Output 6.1: Effective legislative, policy and institutional frameworks in place for conservation, sustainable use, access and benefit sharing of natural resources management, biodiversity, ecosystems; UNDAF Indicator 6.1.1: Institutionalized coordinated environmental information management and monitoring system in place.

This project will be linked to the following output of the UNDP Strategic Plan: SP Outcome 5: Countries are able to reduce the likelihood of conflict and lower the risk of natural disasters, including from climate change.

Stakeholder engagement:

The Project design and implementation benefited from a good engagement of stakeholders, which was translated into good partnerships with numerous organizations in Tajikistan, bringing skills, knowledge,

and value in the implementation of specific activities funded by the project. TE team observed that by following good practices and outcomes from previous ODS management projects, the PMU and its partners formulated the project scope according to the needs and interests of relevant stakeholder groups. The Project design and implementation was informed by needs and interests of relevant groups of stakeholders through continuous consultation program.

Relevance to and complementarity with other initiatives

The Project was designed based on a thorough review of lessons learned from previous projects related to the reform of the RAC sector. It has been implemented through a participative approach that engaged stakeholders all the way from the design of project activities to their implementation. Several recommendations made in the TE of the Regional project have been accounted for in the development of the Project as it relates to:

a. ODS standards;
b. Improving the project indicators scheduling, procurement procedures, on-going operational monitoring on provided co-financing for the projects;
c. Promotion of ODS-related train-the-trainer programs;
d. Supply of refillable refrigerant containers;
e. Conducting an analysis of economic benefits of good practices in refrigeration servicing for inclusion in public outreach programs;
f. Sharing experience with the use of CO_2 as refrigerant in the region.

In conclusion, the project is highly relevant for Tajikistan. It experienced excellent collaborations with stakeholders and partners, and it contributed to a good national ownership of the project, which, in turn, will contribute to the long-term sustainability of project achievements.

Based on the above, the relevance of the project is rated **"Highly Satisfactory" (HS)** both for the recipient country, as well as for the implementation and donor agencies.

Effectiveness

The Project results framework includes outcomes, description of baseline, verifiable indicators, and targets. The results framework contains four Components which include thirteen Outcomes.

- Component 1 is composed of five Outcomes: three (Outcome 1.1, 1.2 and 1.4) on consumption survey, legislation and policy, and standards development. Two (Outcomes 1.3 and 1.5) on capacity building for enforcement of HCFC control and for introduction of good practices in maintenance and repair of equipment, including new and alternative technologies.

- Component 2 consisted of five Outcomes: two on strengthening the HCFC management equipment and training (Outcomes 2.1 and 2.4), two on pilot projects demonstration (Outcomes 2.2. and 2.3), and Outcome 2.5 on waste ODS storage facility.

- Component 3 has one Outcome for implementing activities on raising public awareness on MP.

- Component 4 has one Outcome on women engagement in RAC related business and one Outcome on Project monitoring and evaluation.

This section of the TE report individually assesses the achievement of outcomes against indicators by reporting on the level of progress for each objective and outcome indicator at the time of the TE and noting final achievements. The factors that affected delivery of outputs are also identified.

Component 1: Facilitating implementation of national legislation; strengthening capacity of customs and enforcement officers on control of HCFC import/export; facilitating development of standards for natural refrigerants; and capacity building for the RAC sector through hands-on training of senior technicians followed by training/upgrading of technicians, including those in remote areas.

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
1.1: ODS Alternative survey to determine their consumption	National survey of consumption of HFCs and other alternative cooling agents (natural cooling agents) and their uses undertaken for government to consider the impact of the Kigali Amendment on phase out of HFCs.	**Completed** The national survey of consumption was conducted in 2021 (detailed inventory was conducted in 2019). There was a national report generated in Russian language, which data/ findings subsequently used to determine the consumption baseline, to contribute to iPiC and Form 1 Reporting. The report is available with Committee of Environmental Protection (CoEP).
1.2: National legislation on HCFC and ODS alternatives phase out and import/export control upgraded, through adaptation of advanced legislation experience from EU and other countries.	At least 2-3 Regulatory acts on HFC phase-out and ODS waste disposal drafted and presented to the Government consideration	**Completed and exceeded** Developed policy documents and government resolutions, including “On the limitation and approval of quotas for the import of HCFCs in the period 2020-2030" (2020), “Single window for the registration of export, import and transit procedures” (01.09.2020), "On approval of the Regulation on the specifics of licensing certain types of activities" (No. 172 dated from 03.04.2007), development of amendments to the new Environmental Code of the Republic of Tajikistan, and a package of legislative and regulatory acts and documents that has further accelerate the process of ratification of Kigali Amendment in Tajikistan. The project continuously assists the national partner (Committee for Environmental Protection) in reporting data for the Article 7 of the MP.
1.3: Strengthening the capacity of specialists of the State Customs Department to control import/export of ODS/ODS alternatives and equipment	State Customs Department gradually improves information exchange and interaction with counterparts in other countries in the region, and Customs Department’s laboratory, Environmental inspection office, Tajikstandart and training centers equipped with new instruments and tools. Training program with support of the Customs Training Institute resumed and intensified with at least 100 new	**Completed and exceeded.** Supported and updated training programme for Customs officers, and during 2019 and 2020, UNDP in close partnership with the Institute for Advanced Training of Custom Officers, has organized and conducted 5 trainings for 103 new employees of Customs Service and for 12 environmental inspectors, including 22 women throughout all regions of Tajikistan (Soughd, Khatlon, Dushanbe, DRS). Also, the project provided trainings to 20

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
containing the same.	Customs officials (50% of personnel) trained and equipped to use up-to-date resources with respect to HCFC control legislation including iPIC procedures. Twenty (20) importers/ clearing agents trained in the use of new HCFC importation declaration system. E-cargo tracking system is in place, with number of cases of illegal trade minimized	importers / clearing agents (including 4 women) and 20 custom officers on the use of the newly introduced national system of electronic declaration of import / export of ODS and HFCs. Procured 11 sets of ODS identification devices and handed over to state partners, particularly to Customs Service (mobile laboratories and other units) – for inspection of ODS cargo at the border and check-points and handed to CoEP to use during monitoring and joint inspections to the enterprises and private companies dealing with ODS (HCFCs) and ODS containing products and technologies (HCFCs). Moreover, to expand the capabilities of the Customs Service for electronic declaration / tracking of imported refrigerants, the UNDP project arranged procurement and installation of 11 sets of tracking (e-cargo) equipment / integrated system with Satellite Tracking and Remote-Control System (Electronic Seal).
1.4: Standards for HFC and natural refrigerants.	Capacity building, study tours and exchange programs among state employees of Tajikstandart supported in consultation with key stakeholders and private sector to elaborate adequate standards which subsequently applied / implemented in standardization of ODS	**Completed** Developed, approved, and implemented standards CT PT 1116–2021 on labeling HFC and fluoride containing products and equipment with high GWP (Order №02-CT/2, 05.04.2021. Agency for Standardization, Metrology, Certification and Trade Inspection.
1.5: Strengthening the capacity and capability of refrigeration and air- conditioning technicians in maintenance and repair of equipment including those with new and alternative technologies.	Suitable training institutes with possibility to have practical internship programs identified and selected for provision of special trainings for at least three (3) trainers from Tajikistan who will then continue national level capacity building on usage of low-GWP natural refrigerants-based technologies for other country technicians. Training program on low-GWP alternative technologies designed in cooperation with Output 1.5.1 and training modules are updated to reflect new HCFC controlling regulations as proposed in Output 1.2.1. In conjunction with mobile training facility described in Outcome 2.4, 520 technicians trained by the end of the project with available modern knowledge on low GWP technologies. CAP networking meetings and technology related conferences related	**Completed and exceeded** In 2020, four trainers / RAC technicians participated in the special trainings-for-trainers courses on refrigerants with zero ODS and low GWP, in the training institute of the Belarussian Refrigeration and Air Conditioning Association. Training facilities in Tajikistan have been equipped with necessary equipment and tools to deliver quality education services to the RAC technicians. As a result of these interventions, 597 RAC technicians were provided with advanced knowledge on newest technologies with low global warming potential (GWP) and safe use of natural refrigerants. Due to Covid-19 restrictions, UNDP project has also ensured that nine (9) technicians and experts participated in 6 ECA network meetings and a conference on energy efficient technologies with zero ODP and low GWP through online platform.

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
	to zero ODS, low GWP and energy efficiency identified, and participation plan developed and initiated; with at least 5 conferences attended with technical level participation.	Organized and conducted short term 2 months training for RAC beginners (75 young students, including 39 young women). Two RAC technicians participated in advanced RAC training and experience exchange in Turkey

Component 2: Strengthening the HCFC re-use system; implementation of demonstration projects on HCFC replacement; upgrading training institutions; and improving facility for storage of waste ODS.

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
2.1: Strengthening the HCFC re-use system.	All 4 reclaim centers (2 set up during CFC phase out project and 2 set up during initial HCFC phase out project) in the country fully operative. Finalized list of necessary equipment discussed and agreed with target recipients and Refrigeration Association's experts have been procured and distributed to all large and medium service companies for good refrigerant management practices.	**Completed** The capacity of all three reclaim centers in the country has been enhanced and these are fully operational. The project has purchased 15 sets of necessary HCFC re-use equipment and tools (multi-use cylinders, recovery machines, etc) for targeted recipients in order to ensure good refrigerant management. Within the period of 2019-2021, a total of 21 metric tons of HCFCs were recycled, cleaned/reclaimed and re-used in the country.
2.2: Demonstration of zero- ODS and low-GWP energy efficient refrigerant technologies including natural refrigerants[13][14].	Procurement of new RAC technologies completed, and all demonstration projects identified, implemented, and finalized (6-8 low to medium temperature larger equipment, and 50-60 units of smaller equipment). Awareness raising campaign on benefits of new technologies, supported to broaden project's positive impacts and exploration of scale-up opportunities in partnership with other-than GEF funding sources organized;	**Ongoing** **Not completed** for demo projects for agricultural / processing and commercial sector of food storage, and large server rooms. Instead, a procurement of RAC equipment for health care facilities **initiated, completed, and installation and testing** are currently **ongoing.** Procurement of Refrigeration chambers with Monoblocks (10 sets) and AC-operating on R290 (propane; 65 sets) for health care facilities are procured and installation will be carried out June-July 2022. Completion of all installation work and hand-over process is expected by end of July 2022. Covid-19 pandemic delayed implementation and completion of this Activity. The replacement of existing equipment and installation of new RAC equipment operating on alternative/ natural refrigerants with zero-ODS and low-GHG, require 12 months Defect Liability Period. All technical specifications and estimation documents developed by UNDP Project will be transferred to potential

[13] Included one - two large facilities in three geographic centers for storage and processing of agricultural products and food. RAC demo projects on technologies of zero ODS with low GWP, in agricultural / processing and commercial sector of food storage.
[14] Included two equipment sets for demo energy-efficient project for implementation of RAC technology with zero ODS and low GWP in large server rooms.

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
		beneficiary companies and RAC Association. RAC Association will further advocate and pilot the new Refrigeration equipment in storage and agriculture food processing facilities, large server rooms beyond project completion, whenever feasible.
2.3: Pilot performance monitoring project for reduction of HCFC leakage at large facilities.	Number of suitable participants identified, and monitoring equipment procured and installed, and being used with regular reporting on results established for further awareness raising and scale-up of this initiative. New approach generates replication interest in the industry	**Not completed** The Outcome was not undertaken due to the project closure and time limitation. Covid-19 pandemic caused the delay in timely implementation and completion of this Activity. In addition, due to the project closure and since the installation and operation of remote monitoring system of leakages required 12 months Defect Liability Period, this activity was not implemented. Regardless, all technical specifications and estimation documents developed by UNDP Project will be transferred to potential beneficiary organizations and RAC Association. RAC Association will further advocate and pilot the remote monitoring system of leakages beyond project completion, whenever feasible.
2.4: Upgrade and add to training equipment of Technical Institutions and Refrigeration Association and provide mobile training and recovery/recycling for remote areas.	Cooperation agreements with Training Institutions (centers) concluded, training stands, heat pumps and RAC equipment for natural refrigerants identified and procured, and at least 2-3 senior technicians trained in operation of new low GWP technologies. Training stands, heat pumps and RAC equipment for natural refrigerants identified and procured. Mobile training facility (minivan with equipment) organized to initiate regular training of RAC technicians, recovery/recycling and monitoring of same in rural areas.	**Completed, ongoing** 4 senior technicians from Tajikistan passed through training (enhance capacity) in Belarus and obtained certificates of successful completion. Purchased tools and equipped a Mobile Training Centre, a minivan with special equipment with a purpose to teach technicians located in remote areas of the country. Until 2021, fifteen (15) RAC technicians in rural and remote areas have received essential trainings on HCFC re-use. The mobile training center has also conducted monitoring of HCFC recovery/reuse system and managed the collection of 900kg of used HCFCs throughout all regions of Tajikistan for safe storage and disposal onwards. Training stands, heat pumps and RAC equipment for natural refrigerants procurement is underway; contract with suppliers signed in May 2022 (on-going)
2.5: Waste ODS storage	Government identifies suitable waste storage facility; and upgrade requirements.	**Completed** Upgrades completed and ODS waste storage is in operation. Storage capacity is 32 tons. Currently 9.5 tons of ODS waste refrigerant

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
	Upgrades completed and storage in operation. – 8.5 tons of ODS waste refrigerant in various locations moved to facility for safeguarded storage, and record keeping enabled.	collected and transferred to the facility for safeguarded storage, and record keeping (at the chemical plant Tajikkhimprom, Yavan). Work completed: 19.05.2021.

Component 3: Public awareness.

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
3.1: Implement activities on raising public awareness.	Awareness materials and activities designed on the HCFC phase-out process with material made available in Russian and Tajik languages, covering 15,000 people. Organization of an information tour for 10 – 12 journalists within the country to highlight achievements of the project will be integrated into this campaign.	**Completed and exceeded** 14 articles were published on various websites, newspapers and magazines and information materials were distributed to over 28,000 people. From February 21 to 25, the UNDP-GEF project in Tajikistan, together with Auto-Radio of Tajikistan, organized a “Radio quiz” dedicated to raising awareness of the people of Tajikistan about the need to preserve the ozone layer. According to Auto-Radio's estimates, more than 10,000 calls were recorded during the five days of the radio quiz. Completed re-editing, prepared and distributed 4 videos (technical video tutorial) in Russian and English for RAC technicians. On February 28, 2022, due to the Covid-19 pandemic, an online press tour was held on the Google Meet platform for 10-12 media representatives. Online publications from coverage of at least 10,000 views. Together with the CEP under the Government of the Republic of Tajikistan, conduct a baseline survey of the level of awareness in three large cities (Boktar, Khujand, Dushanbe) to assess the level of knowledge and campaign to raise awareness. (Covered 5000 people). Together with the CEP under the Government of the Republic of Tajikistan, conducting public announcements and 2-3-minute animated videos on ozone layer protection and climate change, created and broadcast on electronic billboards of target districts and cities. Together with the CEP under the Government of the Republic of Tajikistan, public information and awareness campaigns are being held on the International Day for the Preservation of the Ozone Layer:

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
		▪ Round tables and seminars held in the regions of Tajikistan with the participation of scientists, representatives of industry, government and NGOs. ▪ Competition among schoolchildren for the best photo and drawing on the protection of the ozone layer and the environment. ▪ Develop and distribute brochures on ozone depletion and climate change for refrigeration and air conditioning users. • Development and distribution of posters, calendars, labels and stickers about protecting the ozone layer and combating climate change (in public places such as schools, bus stops, hospitals).

Component 4: Gender mainstreaming in refrigeration and air conditioning sector and Monitoring and Evaluation.

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
4.1. Engagement of women-students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business.	Policy and technical level consultations ensured with Ministry of Labor and the Committee of Women and Family Affairs and at least 2 RAC service companies participate in the process on women's role activation in RAC business. 30 women receive stipend to study and to graduate RAC sector, and eventually out of total number of women- students at least, 15 women are self-employed or employed in RAC sector by the end of the project. - At least 5 publications developed on the women's role in RAC technology, and at least 10 public events conducted on engaging schoolgirls in opportunities offered by technical specializations including RAC, energy efficiency, etc.	**Completed and exceeded** Political and technical consultations held with the Ministry of Labor and the Women's Affairs Committee, and 3 service companies and RAC Association participate in the process of activating the role of women in RAC business. An information session was held to raise awareness of girls and young women about the prospects for the professional development of women in the refrigeration and air conditioning (RAC) sector as part of the project, where 28 young women and girls took part (16.12.2020). Roundtable on "The role of women in the refrigeration sector. Current practice, obstacles, and opportunities", where 25 representatives of state institutions and NGOs, including 12 women industry leaders and activists from various sectors, participated (25.02.2021). The "ROADMAP on starting points for gender mainstreaming in the RAC sector for the Republic of Tajikistan" was developed and approved (25.02.2021). Produced 1 documentary on engaging women in RAC-related technical and vocational education through the introduction of scholarship schemes for women and girls graduating from secondary

OUTCOME	END OF PROJECT TARGETS	ACHIEVEMENT
		schools, as well as on close cooperation between the Engineering and Education College of Dushanbe and the service centers of the Association RAC "Artificial Cold" by referring women and girls to such service centers working with the RAC sector for internships and further potential employment. Curriculum for a 2-month training course for refrigeration technicians at vocational schools has been developed and approved to attract women in the RAC sector. 39 women were trained and received certificates about graduation, including 17 of them are employed in service companies and in the RAC Association.
4.2: Project monitoring and evaluation implemented	Regular monitoring and evaluation of the project activities and results conducted and presented during Project Board meetings, which organized twice in a year and serve as guidance to project's implementation plan. By the end of the project, a TE to be conducted, and its results and lessons learned to be made available to all relevant parties. Knowledge management products prepared throughout the project implementation on its achievements to inform wider audience in Tajikistan and in regional and international meetings.	**Ongoing** Project Board Meetings conducted on a regular basis. Numerous site visits and monitoring activities conducted. TE completed.

The Project objectives are fully in line with the national development priorities and commitments as it relates to ODS management and addressing climate change risks. The Project contribution to global reduction of ODS and GHG emission, input to the overall socioeconomic development and implementation of innovations in Tajikistan clearly demonstrates the high extent to which the Project is appropriately responsive to political, legal, socioeconomic, and institutional changes in the country. This project will positively contribute to the Sustainable Development Goals (SDGs), as indicated in the Project's Theory of Change.

The project is well aligned with UNDP priorities in Tajikistan. This project contributed to the country outcome included in the UNDAF/Country Programme Document: UNDAF OUTCOME #6: People in Tajikistan are more resilient to natural and human-made disasters resulting from improved policy and operational frameworks for environmental protection and sustainable management of natural resources. In particular UNDAF Output 6.1: Effective legislative, policy and institutional frameworks in place for conservation, sustainable use, access and benefit sharing of natural resources management, biodiversity, ecosystems; UNDAF Indicator 6.1.1: Institutionalized coordinated environmental information management and monitoring system in place.

This project will be linked to the following output of the UNDP Strategic Plan: SP Outcome 5: Countries are able to reduce the likelihood of conflict and lower the risk of natural disasters, including from climate change.

The main factor contributing the achieving intended outcomes were positive working relationships between stakeholders and partners, strategic involvement of RAC Association as a common denominator for various stakeholders' group and partnership with the CoEP that acts as enforcement authority. The key factor for not achieving some outcomes is the Covid-19 pandemic that delayed implementation and completion of pilot projects.

The greatest and fewest achievements indicated in the tables above. Most of the outcomes were completer and acceded. Several outcomes related to pilot projects were not completed or ongoing during the TE. The main factor contributing the achieving intended outcomes were positive working relationships between stakeholders and partners, strategic involvement of RAC Association as a common denominator for various stakeholders' group and partnership with the CoEP that acts as enforcement authority. The key factor for not achieving some outcomes is the Covid-19 pandemic that delayed implementation and completion of pilot projects.

TE Team did not find any constraining factors such as socio-economic, political and environmental risks; cultural and religious festivals, that substantially affected the Project performance. The Project would have benefited from extension of its term, which was considered but eventually rejected by UNDP Tajikistan.

Gender mainstreaming has been specifically addressed in the project component (Indicator 4.1 Engagement of women-students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business). The Project has strategically engaged the Committee on Women and Family Affairs and enhanced partnership between Engineering and Pedagogical College of Dushanbe and RAC Association to involve women into RAC activities, such as managing small business, consult clients, receive and record orders, maintain contact details and office management.

The Project was largely able to achieve what it was intended to deliver. The review of project outcomes indicates that the Project has delivered most of its end-of-project targets, with two outcomes not completed due to Covid-19 pandemic implications on the delivery schedule, and another outcome delayed but still achievable before the end of the Project. The Project management team used adaptive management extensively to provide flexibility in the project's approach by working with partners and related government institutions and adapting to changing conditions. Flexibility and adaptation were particularly critical for this project. The Project had to adapt to government reorganizations and restrictions related to Covid-19 pandemic. As discussed in other parts of this report, the project is a clear response to national needs and, with a significant engagement/participation of stakeholders in project activities, the Project demonstrated good national ownership.

The summary table for the Project effectiveness is presented as follows. The overall rating of the Project effectiveness is **Satisfactory (S)**.

COMPONENT	STATUS	RATING
Component 1: Facilitating the implementation of national legislation; strengthening capacity of customs and enforcement officers on control of HCFC import/export; facilitating development of standards for natural refrigerants; and capacity building for the RAC sector through hands on training of senior technicians followed by training/upgrading of technicians, including those in remote areas.	Completed and exceeded for most Outcomes, no shortcomings	HS
Component 2: Strengthening the HCFC re-use system; implementation of demonstration projects on HCFC replacement; upgrading training institutions; and improving facility for storage of waste ODS.	Completed for three outcomes, two outcomes not completed. Activities ongoing.	S
Component 3: Public awareness.	Completed and exceeded	HS
Component 4: Gender mainstreaming in refrigeration and air conditioning sector	Completed and exceeded	HS
Overall Project effectiveness		**S**

Efficiency

Resource allocation and cost effectiveness:

The Project's cost and time can be loosely compared with those of the Tajikistan's national component of the previously completed Regional project "Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region" (2013-2018). The Regional project originally planned for 3 years (later extended for another 2 years) and included the GEF grant for Tajikistan's national component of approximately $1.1 million US and realised co-financing of approximately $3.8 million US. The scope of the Regional project was similar to the Project in terms of the variety of its outcomes, but smaller in scale of the equipment procurement, training and regulatory support. It appears that the Project's cost is comparable to the Tajikistan's national component of the previously completed Regional project, considering that the Regional project did not have an awareness program and gender mainstreaming components.

The Project has provided resources for integrating gender equality and human rights. Gender mainstreaming has been specifically addressed in the project component (Indicator 4.1 Engagement of women-students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business). Cost of this component accounts for approximately $ 65 thousand US as GEF grant and $140 thousand US as co-financing in-grant and in-kind.

TE Team considers providing the resources for integrating gender equality and human rights in the Project as an investment both in short-term and medium-term. The immediate result is that 39 women were trained and received certificates about graduation, including 17 of them were eventually employed in service companies and in the RAC Association. The medium-term benefits relate to development and implementation of Curriculum for a 2-month training course for refrigeration technicians at vocational schools to attract women in the RAC sector. The long-term benefits may be expected if the Engineering and Education College of Dushanbe or other education institutions expand the scope of education programs to attract women in other professional areas since RAC industry is a relatively small component of Tajikistan's economy and has a limited amount of employment opportunities.

While the education gap between males and females is not significant in Tajikistan, it exists, and rigid notions of men's and women's roles in society and in the home remain. Women lack access to productive resources and technical training that would enable them to increase productivity above subsistence levels and increase wealth. Allocation of Project resources to gender mainstreaming in RAC sector appears feasible and actually provided the results: 39 women were trained and received certificates about graduation, including 17 of them were eventually employed in service companies and in the RAC Association. This is a good example of how future projects could approach addressing the need to ensure inclusiveness and take into account the needs to prioritise marginalized groups.

Project management and timeliness:

Even though it is always difficult to analyze the cost-benefit of projects that bring innovations and regulatory changes, the review of all management elements of the project confirm that the implementation of the project was an efficient operation that created a good value for the money spent. The prudent approach to engage project funds was translated into good value for money and the use of adaptive management allowed for the identification and implementation of activities that were responsive to immediate needs of stakeholders, and the need to achieve expected results.

The Project has been efficiently implemented. The review of the management and partnership arrangements revealed that the project demonstrated significant collaboration with all key stakeholders with a highly involved participative approach through the Project Board meetings, as well as informal communications among partners. The project implementation team allocated project resources proactively and cautiously.

Due to the changes in the Project scope caused by Covid-19 pandemic, certain activities of Component 2 were cancelled, and different arrangements made for delivery of the demo project equipment, including parallel financing from UNICEF – GAVI project on cold-chain system. These changes resulted in approximately USD 300 thousand saving that will have to be returned to GEF. The new arrangements increased co-financing by approximately USD 900 thousand, provided by the Ministry of Health and Social Protection in-kind and as grant.

The review revealed that the project management team used adaptive management to secure project deliverables while maintaining adherence to the overall project design. Adaptive management have been used regularly to adapt to a constantly changing environment; particularly to adapt to several key changes/events including working with the new Government of Tajikistan, implementing activities throughout the Covid-19 pandemic and its recent implications. The project implementation team demonstrated its ability to adapt to changing environment.

The efficiency of the project was also a result of a well-managed day-to-day activities. Using a participative approach and a transparent communication, project activities were implemented with a significant engagement of stakeholders and clear management procedures. The positive relationship between UNDP, the implementation team and stakeholders also contributed to an efficient implementation.

External expertise and contractors were hired as needed to ensure the implementation of activities. An emphasis was on hiring national experts and contractors and, when needed, additional expertise had been sourced internationally. This approach allowed Tajikistan to develop greater technical in-country expertise. This was the case for undertaking a capacity training of senior technicians from Tajikistan in Belarus, Ukraine, and Turkey.

The overall rating of the Project efficiency is **Satisfactory (S)**.
The overall rating of the Project outcome is **Satisfactory (S).**

Overall Project Outcome

Assessment of Outcomes	**Ratings**
Relevance	HS
Effectiveness	S
Efficiency	S
Overall Project Outcome Rating	**S**

Sustainability: Financial, socio-political, institutional framework and governance, environmental, overall likelihood of sustainability

Institutional framework and governance:

The TE Team did not find any threats from legal frameworks, policies, governance structures and processes to the continuation of project benefits. The ODS management legislation, supported by the Project, has been implemented and enforced in Tajikistan by the Government. It appears to be sustainable and will likely last for a foreseeable future. The National Ozone Unit was established with assistance of this project and, currently, in accordance with the Government Decree, under #357, from 2021, is established and funded from the state budget as the new structure of the Committee of Environmental Protection (CoEP) under the Government of the Republic of Tajikistan.

A number of enthusiastic persons from government and civil society, who can promote sustainability of project outcomes, have been identified during the project planning phase and involved in the project implementation. These individuals were taking part in the previously completed Regional project and were also attracted from personal and professional network of the Project manager and Technical coordinator.

The project achieved stakeholders' consensus regarding courses of action on project activities after the project's closure date. This was confirmed at the PSC meeting conducted at the last day of the TE mission in Dushanbe. The PSC members discussed the project recommendations, made constructive suggestions and agreed om the course of actions. The informal interviews with the stakeholders during the TE mission confirmed the same.

The Tajikistan's National Development Strategy, along with the principles of industrialism and innovation, highlights the principle of prevention or reduction of vulnerability of future sustainable development as a first step. The Project contribution to global reduction of ODS and GHG emission, input to the overall socioeconomic development and implementation of innovations in Tajikistan clearly demonstrates the high extent to which the Project is appropriately responsive to political, legal, socioeconomic, and institutional changes in the country. The project strategies can be effectively incorporated into future planning.

The institutional changes introduced by the Project are generally gender neutral, except for the women's education and professional training in RAC sector. Gender equality has been specifically addressed in the project component (Indicator 4.1 Engagement of women-students to study RAC in the technical and

vocational education institutions and partnerships with organizations to involve women in RAC related small business).

Rating of institutional framework and governance sustainability: **Likely (L)**.

Financial sustainability:

Sustainability of the activities and practices of HCFC management in the RAC sector appears to be high in Tajikistan. The HCFC reclamation centers received modern equipment and have been provided with the necessary training to use it. Sustainability of the zero-ODS technology demonstration sub-projects in the institutions of public sector needs further support. The demo projects were only partially completed, especially in the health sector in Tajikistan. After the project end and with no external funding available, the governmental financial resources allocated to the RAC sector are limited.

The Project documents and interviews with the key stakeholders and beneficiaries demonstrate to a certain degree ability to sustain the progress in implementation of zero ODS, low GWP, energy efficient technologies in Tajikistan without external financing. The TE team received an additional assurance from the Project partners that ODS management in Tajikistan is currently moving towards implementing zero ODS, low GWP, energy efficient technologies and have technical capacity to continue performing MP obligations.

There are several ongoing projects in Tajikistan related to ODS development and RAC sector, which may boost ODS management.

- UNICEF – GAVI project – on cold-chain system used the UNDP HCFC II Project's elaborated technical specifications/ engineering elaborations (USD 3,6 million).
- ADB financed project on establishment of Single Window for Custom Services of the Republic of Tajikistan (~ USD 3 million). The ADB's co-financing to enhance the Custom service is seen as supplementary to UNDP's HCFC Project activities on Establishment/Installation of Satellite Remote E-cargo tracking system (in line with: Outcome 1.3: Strengthening the capacity of specialists of the State Customs Department to control import/export of ODS/ODS alternatives and equipment containing the same.)
- ADB financed project on improvement of state standards on Education in partnership with UNDP HCFC II Project, RAC and State Standard Agency – provided co-financing and complementary support in development/ elaboration of the State Standard on Education RAC Technicians.

With these and other potential opportunities in green energy development and climate change mitigation of the GEF focal area there may be opportunities to sustain and scale up the project achievements.

The financial sustainability is rated as **Moderately Likely (ML)**.

Socio-Political sustainability:

There is only a minor risk to sustainability from the socio-political perspectives. Tajikistan has signed all amendments of the Montreal Protocol and has expressed its strong commitment to the HCFC phase-out schedules. Tajikistan has actively participated in negotiations related to the recent Kigali Amendment to MP that was developed in order to reduce environmental impacts from substitution of ODS by ODS-free substances with high impact on global warming.

Component 3 of the Project specifically addresses public awareness activities. Numerous activities conducted (see Section on effectiveness) to ensure public support of the Ozone layer protection.

TE Team did not find any records proving that the Project Team documents lessons learned on a continual basis. The Project Implementation Reports however, include discussion on lessons learned.

The National Ozone Units was formed with assistance of this project and currently is established and funded from the state budget as the new structure of the Committee of Environmental Protection under the Government of the Republic of Tajikistan. The ODS reclamation centers received modern equipment and have been provided necessary training to use it. All technical specifications and estimation documents developed by the Project will be transferred to potential beneficiary organizations and RAC Association. RAC Association will further advocate and implement the demo pilot projects, as feasible.

TE Team considers the gender results as both short-term and medium-term. The immediate result is that 39 women were trained and received certificates about graduation, including 17 of them were eventually employed in service companies and in the RAC Association. The medium-term benefits relate to development and implementation of Curriculum for a 2-month training course for refrigeration technicians at vocational schools to attract women in the RAC sector. The long-term benefits may be expected if the Engineering and Education College of Dushanbe or other education institutions expand the scope of education programs to attract women in other professional areas since RAC industry is a relatively small component of Tajikistan's economy and has a limited amount of employment opportunities.

There is only a minor risk to sustainability from the socio-political perspectives. Tajikistan has signed all amendments of the Montreal Protocol and has expressed its strong commitment to the HCFC phase-out schedules. Tajikistan has actively participated in negotiations related to the recent Kigali Amendment to MP that was developed in order to reduce environmental impacts from substitution of ODS by ODS-free substances with high impact on global warming.

Rating of socio-political sustainability is **Likely (L).**

Environmental sustainability:

The TE team did not find any environmental factors that could substantially undermine the future flow of project environmental benefits. There is a minor risk to sustainability of the Project from the environmental and political perspectives since Tajikistan has signed all amendments of MP and has expressed its strong commitment to the HCFC phase-out schedules. There still is a moderate risk of environmental hazard associated with the disposition of obsolete ODS and management of toxic, flammable or high-pressure substances that may potentially result in adverse emergency situations. Proper training in the handling of such refrigerants substantially mitigates the noted risks.

The TE team did not find any current routine activities in the project area that pose a threat to the sustainability of project outcomes.

Rating of environmental sustainability is **Likely (L)**

The overall Project sustainability is rated as **Moderately Likely (ML)**.

Sustainability	Rating
Financial resources	ML
Socio-political	L
Institutional framework and governance	L
Environmental	L
Overall Likelihood of Sustainability	**ML**

Country ownership

The Tajikistan's National Development Strategy, along with the principles of industrialism and innovation, highlights the principle of prevention or reduction of vulnerability of future sustainable development as a first step. The Project contribution to global reduction of ODS and GHG emission, input to the overall socioeconomic development and implementation of innovations in Tajikistan clearly demonstrates the high extent to which the Project is appropriately responsive to political, legal, socioeconomic, and institutional changes in the country. The TE team did not find any direct evidence of incorporating project outcomes into the national sectoral and development plans.

CoEP is the implementing partner of the project and played a very important role in coordinating activities with state entities and other institutions. With the incorporation of these actors in the PSC, the integration of actors in decision-making and approval of strategies for ODS management issues was achieved.

The Government agencies and RAC Association participated through coordination with the PSC in the planning of consultancies, procurement of equipment, public awareness campaign, and in the development of pilot projects.

The PSC was composed of a broad representation of stakeholders involved in HCFC management, including government representatives, development partners, NGOs and academia, and private sector. The Board provided a broad platform for key stakeholders to meet, debate, adjust and decide the way forward on technical aspects of the implementation. This involved participation of stakeholders has been critical and is a positive sign of good ownership despite challenges occurring during the implementation stage.

The Government of Tajikistan maintained their financial commitments to the Project by providing co-financing in grants and in kind as planned. The CoEP provided regulatory support and endorsement to the Project. They also took a leading role in public outreach, education, implementation of Kigali amendment to MP, development of relevant by-laws, and other Project activities on a regular basis.

The Government of Tajikistan has demonstrated strong ownership of the project that could be seen from the progress in implementation at the TE stage. Most project activities were completed at this stage. The project has addressed key national needs to improve the management of HCFC. It was designed based on a thorough review of lessons learned from previous projects related to the reform of the RAC sector. It has been implemented through a participative approach that engaged stakeholders all the way from the design of project activities to their implementation.

Gender equality and women's empowerment

Gender mainstreaming has been specifically addressed in the project component (Indicator 4.1 Engagement of women-students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business). The Project has strategically engaged the Committee on Women and Family Affairs and enhanced partnership between Engineering and Pedagogical College of Dushanbe and RAC Association to involve women into RAC activities, such as managing small business, consult clients, receive and record orders, maintain contact details and office management. Cost of this component accounts for approximately $ 65 thousand US as GEF grant and $140 thousand US as co-financing in-grant and in-kind. TE Team does not have any comparable data to further discuss the effectiveness of the outcome, though it appears delivering short-term and medium-term results. Professional involvement of women in the RAC sector generally contributed to the project climate risk related outcomes.

TE Team considers the gender results as both short-term and medium-term. The immediate result is that 39 women were trained and received certificates about graduation, including 17 of them were eventually employed in service companies and in the RAC Association. The medium-term benefits relate to development and implementation of Curriculum for a 2-month training course for refrigeration technicians at vocational schools to attract women in the RAC sector. The long-term benefits may be expected if the Engineering and Education College of Dushanbe or other education institutions expand the scope of education programs to attract women in other professional areas since RAC industry is a relatively small component of Tajikistan's economy and has a limited amount of employment opportunities.

TE Team has not identified any potential negative impact on gender equality and women's empowerment. The project contributed to the following results areas:

- Contributing to closing gender gaps in access to and control over educational resources;
- Targeting socio-economic benefits and services for women.

Cross-cutting Issues

The Project is well aligned with UNDP sustainable development goals: **SDG#5.** Gender equality, **SDG#8.** Good jobs and economic growth, **SDG#9.** Innovation and infrastructure, **SDG#12.** Responsible consumption, and **SDG#13**. Climate action. Reducing GHG emission by introducing best available technologies (zero-ODS and low GWP) to substitute HCFCs, directly addresses climate change mitigation.

The Project has provided resources for integrating gender equality and human rights. Gender mainstreaming has been specifically addressed in the project component (Indicator 4.1 Engagement of women-students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business).

The Project positively affects income generation and job creation, improves general natural resource management arrangements, improves policy frameworks for resource allocation and distribution, and promotes regeneration of natural resources for long term sustainability.

The Project's overall objective is to ensure protection of human health and the environment through sound management of HCFCs and their zero-ODS and low GWP substitutes in Tajikistan. In particular, the project strives to achieve environmental sustainability through:

- Enhancing the national capacity to phase-out HCFCs through strengthening of associated regulatory frameworks, solid capacity building and re-tooling/infrastructure improvements in the country's relevant sectors.
- Introducing best available technologies (zero-ODS and low GWP) to substitute HCFCs.

GEF Additionality

With help of the Project, Tajikistan has been able to comply with its MP commitment of achieving 99.5% HCFC phase out by January 1, 2020, and further strengthen the capacity to phase out the HCFC service tail of 0.5% by 2030 or earlier. This is the most direct, quantitative and verifiable data demonstrating the incremental environmental benefits associated with this Project.

Demonstration of the incremental environmental benefits – sequential reduction of the HCFC emissions to the prescribed level and complete phase out. The outcome has been achieved in creating a more supportive environment as envisioned at the endorsement stage.

The monitoring and evaluation documents provide evidence of the causality between the rationale for GEF involvement and the incremental environmental and other benefits directly associated with the GEF-supported project since the ultimate objective of the Project to ensure protection of human health and the environment through sound management of HCFCs and their zero-ODS and low GWP substitutes in Tajikistan has been achieved.

The outcomes appear sustainable and will last beyond the project end. Please see the Sustainability section for the discussion on evidence tat the Project outcomes will sustain beyond the project end. The broader impact of the Project has not been anticipated. The table below describes how the Project fits within the areas of GEF's additionality.

GEF's Additionality	Description	Project Features
Specific Environmental Additionality	The GEF provides a wide range of value-added interventions/services to achieve the Global Environmental Benefits (e.g. CO2 reduction, Reduction/avoidance of emission of POPs).	The Project had contributed to progress toward reducing environmental stress and improving ecological status of Tajikistan. Reducing GHG emission and phasing out ODS contributes to global efforts to project the ozone layer of our planet and mitigate climate change risk.
Legal/Regulatory Additionality	The GEF helps stakeholders transformational change to environment sustainable legal /regulatory forms.	The Project facilitates an implementation of national legislation and strengthening capacity of customs and enforcement officers on control of HCFC/ODS alternative import/export.
Institutional Additionality/Governance additionality	The GEF provides support to the existing institution to transform into efficient/ sustainable environment manner.	The Project provides support to the existing Governmental institutions to transform into efficient/ sustainable environment manner via access to training and knowledge dissemination.
Financial Additionality	The GEF provides an incremental cost which is associated with transforming a project with national/local benefits into one	Reducing GHG emission and phasing out ODS contributes to global efforts to project the ozone layer of our planet and mitigate climate change risk.

GEF's Additionality	Description	Project Features
	with global environmental benefits.	
Socio-Economic Additionality	The GEF helps society improve their livelihood and social benefits thorough GEF activities.	Through the implementation of pilots to show the success stories and the subsequent scaling up at the country level the project would generate socio-economic and environmental improvements, improve employment, and improve the health impact of workers linked to the sectors of intervention of this project. Changes to the regulatory framework will allow the generation of jobs associated with the management of ODS.
Innovation Additionality	The GEF provides efficient/sustainable technology and knowledge to overcome the existing social norm/barrier/practice for making a bankable project.	Demonstration of new technology including zero-ODS and low-global warming potential (GWP) energy efficient cooling technologies in various sectors of the economy.

Catalytic/Replication Effect

The Initial and Current Projects contributed substantially to the capacity development of ODS management in Tajikistan. Training, awareness, new equipment, and demo projects were co-financed by various stakeholders, government organizations and private sector. The co-financing acceded direct contribution from GEF which served as a catalyst in ODS management progress. Consultations on Kigali Amendment to MP were launched with the governmental stakeholders and allowed the amendment to pass to a lower chamber of the parliament to ensure its ratification. The progress in updating the ODS management regulation and ratification of Kigali Amendment by Tajikistan proves that the project outcome contributes to regulatory development that become **widely accepted and legally required**.

The catalytic role of the Project may also be associated with promotion of zero ODS, low GWP, Energy Efficient Technologies and development and implementation of this innovation in Tajikistan and neighbour countries. The Project had helped with a study on ODS alternatives including natural refrigerants and HFCs. Implementation of the natural cooling demonstration projects can be replicated, as its results are useful in convincing other countries to follow such approaches. Example is a recent interest in these technologies from Kyrgyzstan and Georgia. This proves that the project outcomes also catalyze the public goods through **successful demonstration of new technologies and approaches, information dissemination and training.**

The Project lessons learned, exit strategy, as well as scalability or replication of project outcomes are discussed in the next section. The assessment of knowledge management, lessons, best practices and sharing to inform new GEF project/programme design and scale up/replication are briefly discussed in the next section. The Projects lessons and experience, as recommended by the TE team, will be shared with UNDP staff at the UNDP regional workshop with presentation of the achievements of the Project and the way forward in 2022-2025.

The TE team did not find any project achievements that are contingent on specific local context or enabling environment factors.

Progress to Impact

The Project has enabled Tajikistan to achieve most of its intended outputs in ODS management. The compliance with MP in phasing out the HCFC is directly linked to Project outcomes. The Project facilitated an adoption of a legal and regulatory acts on ODS management, the improved supply of equipment for ODS detection and recycling, as well as training and increased awareness among its stakeholders, RAC professionals and general public. All of this contributed to progress toward reducing environmental stress and improving ecological status of Tajikistan. The project has demonstrated the following results, which have direct casual links to the Project outcomes:

2. Promoted policies and programs aimed at achieving 99.5% HCFC phase-out by 2020 and remaining servicing tail by 2030 or earlier.
3. Accelerated Tajikistan's contribution to the global efforts for the Ozone Layer protection.
4. Demonstrated new approaches to reduce introduction of high-GWP technologies in process of HCFC phase-out and reduce negative impacts on the global environment.
5. Solidified national capacity to introduce and safely manage HCFC-free and more energy efficient RAC technologies, and further strengthen RAC business operations in various economic sectors, with promotion of women participation in such economic activities.

The direct impact of the project is that Tajikistan complies with the MP obligations related to HCFC for 2018 - 2021 and eventually accelerate the phase-out earlier than MP requirements.

The direct changes, introduced by the Project in ODS management in Tajikistan are taking place immediately on the country level. The medium-term impacts related to capacity development and introduction of new technologies will have long lasting effects in the professional circles of RAC industry, will improve of Customs capacity on import/export control and piloting of an electronic sealing/tracking project for ODS entering Tajikistan. The compliance with MP obligations will likely be permanent for Tajikistan since the HCFC phase out process demonstrated good results and scaling up of the pilot projects appears feasible condition to financial resources availability.

The TE team did not find any substantial unintended impacts of the Project. Financial sustainability of the implementation of the new technologies in the RAC sector is the main barrier that may prevent further progress towards long-term impact. The Project encouraged enrollment of women into RAC related technical and vocational education through introduction of scholarships for more than 30 women.

5. Main Findings, Conclusions, Recommendations & Lessons Learned

Main Findings

The review of project outcomes indicates that the Project has delivered most of its end-of-project targets. The risks identified at the project design phase did not adversely affect the project implementation. However, the Covid-19 Pandemic, an unexpected risk, led to delay of some of the activities, due to the impossibility of carrying out face-to-face workshops. This situation limited the development of the pilot projects due to the restriction measures established by the Government, affecting the achievement of the established objectives.

The Project carried out a specific, complete and comprehensive Gender Analysis and Action Plan, which focused on access to education in RAC management. The specific Component included activities raising awareness, targeted specifically at women. The Project encouraged enrollment of women into RAC related technical and vocational education through introduction of scholarships for more than 30 women.

In a cross-cutting manner, activities related to strengthening national policies and institutional capacities for the sound management of ODS were addressed by Components 1-3. By bringing investments in RAC sector, the project has generated positive effects on the economy, has reduced the risk of ODS emission to atmosphere, as well as generating capacity through pilot projects. All this represents an improvement in the living conditions of populations, including vulnerable groups, such as the underprivileged, women and marginalized groups, major workers in the formal industry and the informal RAC sector, surrounding communities and globally.

Two outcomes were not completed due to Covid-19 pandemic implications on the delivery schedule and arrangements made to ensure their implementation. Another outcome has been delayed but the equipment installation started and will be complete before the end of the Project. The Project management team used adaptive management to provide flexibility in the project's approach working with partners and related government institutions and adapting to changing conditions. Flexibility and adaptation were particularly critical for this Project since it had to adjust to government reorganizations and restrictions related to Covid-19 pandemic. The project is a clear response to national needs and, with a significant engagement/participation of stakeholders in project activities, it demonstrated a positive national ownership strategy.

The demonstration of zero-ODS and low-GWP energy efficient refrigerant technologies including natural refrigerants in agricultural/processing and commercial sector of food storage, as well as implementation of RAC technology with zero ODS and low GWP in large server rooms, were not completed due to Covid-19 pandemic. The pandemic caused delay in timely implementation and completion of this activity since the procured equipment required 12 months Defect Liability Period, which had to be accommodated within the project timeline. Some zero-ODS and low-GWP energy efficient refrigerant equipment for health care facilities have been procured and installation will be carried out in July 2022.

As stated by UNDP, all technical specifications and estimation documents developed by the Project will be transferred to potential beneficiary organizations and RAC Association. RAC Association will further advocate and implement the demo pilot projects, as feasible. All other outcomes were completed or exceeded the expected results.

Conclusions

This is a successful project and at the time of TE it has reached most of its objectives, completed or exceeded most of its expected outcomes and has an optimistic perspective to sustain its impact on ODS management in Tajikistan in the foreseeable future.

1. **Relevance:** The Project is evaluated relevant to the main objectives of the GEF Focal area and to the environment and development priorities of Tajikistan at the local, regional, and national level. It provided necessary funding, guidance and staff support to the unit on ozone depletion of the CoEP to comply with the MP obligations. The Project is highly relevant to the Tajikistan's context and its aim to fulfill country's obligations under the MP.
2. **Project Design:** The Project has been designed and built using the experience and knowledge gained from the GEF-UNDP FSP regional project "***Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region***" (2013-2018) which enhanced national capacity and provided technical support to the adoption of the HCFC phase-out strategy. It strengthens Tajikistan's national capacity to control HCFC import and transit, improve licensing systems and introduce HCFC monitoring. It provided support in capacity development in the State Customs Service to allow effective monitoring of HCFC imports, transit and end-use.
3. **Project Implementation:** The Project implementation has been constrained by a range of challenges beyond Project's control, such as the change in the geo-political environment in Tajikistan and Covid-19 pandemic.
    - Covid-19 pandemic has impacted the overall project implementation and travel restrictions, which put limitations on organization and procurement of the RAC and special equipment. Covid-19 impacted key economy sectors resulting in a slowdown, which caused an uncertainty and delay in previously committed co-financing and investments from private industry to procure environmentally friendly and energy-efficient equipment.
    - The first Project Board meeting was held in March 2019, three months after Local Project Appraisal Committee (LPAC) meeting. This delay was related to the election of the Government of Tajikistan, appointment of a new GEF Operational and Political Focal Point (GEF OFP) for Tajikistan and membership changes in the Project Steering Committee.

The documentation of project performance, risks and challenges could have been improved using more advanced project controls such as **Earned Value** reporting and detailed schedule.

4. **Effectiveness.** The overall effectiveness of the Project was affected by Covid-19 pandemic, creating delays in the completion of the project objectives. Notwithstanding the challenges, there has been a significant level of completion of project activities and outputs. Most of the components were completed and the results have exceeded expectations with the exception of a pilot performance monitoring project for reduction of HCFC leakage at large facilities, which was cancelled due to the time limitation and delay caused by Covid-19 pandemic. The demonstration of energy efficient refrigerant technologies with zero ODS and low GWP has been partially completed, and the rest of equipment should be procured by the end of July 2022.
5. **Efficiency.** With most of the Project components completed and/or exceeding expectations, the implementation challenges mentioned above have adversely affected the overall efficiency of the Project. The Project team, however, managed the challenges adequately and proactively.
6. **Progress to Impact.** The Project has enabled Tajikistan to achieve most of its intended outputs.

These included the adoption of a legal and regulatory acts on ODS management, the increase in supply of equipment for ODS detection and recycling, implementation of training and increased awareness among its stakeholders, RAC professionals and general public. The Project had contributed to progress toward reducing environmental stress and improving ecological status of Tajikistan.

7. **Sustainability:** Overall, the project had registered good results in sustainability, regarding financial, socio-political, institutional framework and governance, environmental aspects. The ODS management legislation, supported by the Project, has been implemented and enforced in Tajikistan by the Government. It appears to be sustainable and will likely last for a foreseeable future. The National Ozone Units was formed with assistance of this project and currently is established and funded from the state budget as the new structure of the Committee of Environmental Protection under the Government of the Republic of Tajikistan. The ODS reclamation centers received modern equipment and have been provided necessary training to use it. Sustainability of zero-ODS technology demonstration projects in the institutions of the public sector needs support since the demo projects were only partially completed. After the end of the project, if no further external funding available, the governmental financial resources allocated to the RAC sector are limited. There are several ongoing projects in Tajikistan related to ODS development and RAC sector, which may boost ODS management:

    - UNICEF – GAVI project – on cold-chain system enjoyed the UNDP HCFC II Project's elaborated technical specifications/ engineering elaborations (USD 3,6 million).
    - ADB financed project on establishment of Single Window for Custom Services of the Republic of Tajikistan (~ USD 3 million). The ADB's co-financing to enhance the Custom service is seen as supplementary to UNDP's HCFC Project activities on Establishment/Installation of Satellite Remote E-cargo tracking system (in line with: Outcome 1.3: Strengthening the capacity of specialists of the State Customs Department to control import/export of ODS/ODS alternatives and equipment containing the same.)
    - ADB financed project on improvement of state standards on Education in partnership with UNDP HCFC II Project, RAC and State Standard Agency – provided co-financing and complementary support in development/ elaboration of the State Standard on Education RAC Technicians.

With these and other potential opportunities in green energy development and climate change mitigation of the GEF focal area there may be sufficient opportunities to sustain and scale up the project achievements.

There is only a minor risk to sustainability of the Project from the environmental and political perspectives since Tajikistan has signed all amendments of MP and has expressed its strong commitment to the HCFC phase-out schedules. Tajikistan has actively participated in negotiations related to the recent Kigali Amendment to MP which has been ratified June 29, 2022, and will enter into force on 27 September 2022. This Amendment was developed to reduce environmental impacts from substitution of ODS by ODS-free substances to reduce global warming.

8. **Country ownership.** The Government of Tajikistan has demonstrated strong ownership of the Project. This could be seen from the progress in implementation at the TE stage, at which time most of the project activities were completed. The project has addressed key national needs to improve the management of HCFC. It was designed based on a thorough review of previous GEF projects and included a response to several barriers, which have obstructed an effective reform

of the RAC sector. It has been implemented through a participative approach engaging stakeholders all the way from the design of project activities to their implementation. The project partnered with numerous organizations including government entities, academia, NGOs, public organizations, and private sector.

9. **Gender mainstreaming** has been specifically addressed in the project component (Indicator 4.1 Engagement of female students to study RAC in the technical and vocational education institutions and partnerships with organizations to involve women in RAC related small business). The Project has strategically engaged the Committee on Women and Family Affairs and enhanced partnership between Engineering and Pedagogical College of Dushanbe and RAC Association to involve women into RAC activities such as managing small business, receive and record orders, maintain contact details and office management.

Recommendations and Lessons Learned

Several recommendations made in the TE of the Regional project have been accounted for in the development of the Project as it relates to:

a. ODS standards;
b. Improving the project indicators scheduling, procurement procedures, on-going operational monitoring on provided co-financing for the projects;
c. Promotion of ODS-related train-the-trainers programs;
d. Supply of refillable refrigerant containers;
e. Conducting an analysis of economic benefits of good practices in refrigeration servicing for inclusion in public outreach programs;
f. Sharing experience with the use of CO_2 as refrigerant in the region.

The recommendation for improvement of the on-going operational monitoring of provided co-financing for the projects is still applicable to the Current project and could be considered as work in progress. New recommendations are based on the review of project documents, interviews with key informants and analysis of the information collected for this evaluation and are related to:

- Initiation of a strategy to meet the requirements of Kigali Amendment to MP;
- Exploring a potential partnership on green finance and GEF climate change mitigation focal area;
- Presentation of the Project achievements at the regional UNDP workshop;
- Plan to develop and replicate zero ODS, low GWP, energy efficient technologies in Tajikistan;
- Availability of the Project documents and improvement of project controls.

Recommendations: Summary Table

Rec #	TE Recommendations	Entity Responsible	Time Frame
1	**Development of a strategy to ensure compliance with requirements of Kigali Amendment to MP**		
1.1	Initiate the development of a strategy to ensure compliance with requirements of Kigali Amendment to MP.	UNDP Tajikistan, Committee for Environmental Protection under the Government of the Republic	2022-2024

		of Tajikistan	
1.2	Explore partnerships on green finance and GEF climate change mitigation focal area	UNDP Tajikistan, Committee for Environmental Protection under the Government of the Republic of Tajikistan	2022-2025
2	**Presentation of the achievements of the project and the way forward**		
2.1	Participate in the UNDP regional workshop with presentation of the achievements of the project and the way forward	UNDP Tajikistan, UNDP Istanbul Regional Hub	2022-2025
3	**Develop and replicate zero ODS, low GWP, energy efficient technologies in Tajikistan**		
3.1	Provide a plan to develop and replicate zero ODS, low GWP, energy efficient technologies in Tajikistan	UNDP Tajikistan, RAC association	2022-2025
4	**Improvement of the methodology for operational monitoring of indicators of the provided co-financing**		
4.1	Improve the methodology for operational monitoring of indicators of the provided co-financing for the UNDP-GEF projects	UNDP Tajikistan	2022-2025
5	**Availability of the reports produced by the project**		
5.1	Ensure that all technical reports produced by the project be available to the public after the end of the project	UNDP Tajikistan	August 2022

The following **lessons** were **learned** from the Project:

- The **timely extension** of the project's completion dates could have improved its effectiveness. Justifications for such an extension were sufficiently solid and remaining actions implementable.
- Working with the **RAC Association was the key to success**, as it brought together the participants of the Project into an operational **stakeholder network** with strong **engagement mechanisms** and **inter-twined interests to perform designated roles**. The Committee of Environmental Protection, as a partner of the Project, ensured due **leadership and political will** directed towards completion of the Project objectives and outcomes.
- The project has successfully overcome the challenges of the Covid-19 pandemic through effective implementation of a designated **Business Continuity Plan (BCP)** and **proactive professionalism** on the part of the Project Team.
- The **Engineering and Pedagogical College** of Dushanbe has demonstrated great potential for the introduction and implementation of training programs (**sustaining knowledge base and applied practice**), **enthusing interests amongst young women** (gender mainstreaming), and can be recommended for other projects as a **key partner**.
- It is necessary to increase the budget for the purchase of equipment in comparison with other budget items of the Project (**more of hardware elements**).
- It is necessary to conduct training of personnel in the form of familiarization with **real work practices**.

ANNEXES

Annex 1. TE Terms of reference

Annex 2. Mission Itinerary including field visits (approved at TE Inception Phase)

Annex 3. List of persons interviewed

Annex 4. List of documents reviewed

Annex 5. Evaluation question matrix (evaluation criteria with key questions, indicators, sources of data, and methodology)

Annex 6. Questionnaire

Annex 7. TE Rating scales

Annex 8. Signed evaluation consultant Agreement and UNEG Code of Conduct form

Annex 9. Signed TE Report clearance form

Annex 10. Annexed in a separate file: TE Audit Trail

Annex 11. Annexed in a separate file: relevant terminal GEF Core Indicators and Tracking Tools

Annex 12. Annexed in a separate file: Confirmed Sources of Co-financing table

Annex 13. Annexed in a separate file: Management Response Table

Annex 1. Terminal Evaluation: Terms of Reference

Annexed in a separate file.

Annex 2. Mission Itinerary including field visits (approved at TE Inception Phase)

DATE	KEY PERSON / STAKEHOLDER	ORGANISATION
June 27, 2022	UNDP RR/ DRR (optional) Mrs. Muhiba Rabejonova, Cluster Team Leader, UNDP Tajikistan Mrs. Zarina Mavlyanova, M&E Analyst, UNDP CO zarina.mavlyanova@undp.org Mr. Khurshed Kholov, Project Manager Mr. Khurshed Khusaynov -Technical Coordinator Mr. Akbar Rasulov, AFA	Briefing Meeting with UNDP CO and UNDP-GEF Ozone Project Team 39 Ayni Street/ UNDP CO +992 94 9999 184
June 28, 2022	Mr. Saidusmon Sudurov	Meeting with Committee of Environmental Protection
June 28, 2022	Mr. Jamshed Abdulqodirzoda	Meeting with Custom Service of the RT
June 28, 2022	Mr. Yunus Mirzoaliev Beneficiary organization of demo-projects.	Meeting with Ministry of Health and Social Protection +992 93 9999 026
June 28, 2022	Mrs. Adiba Abdualieva Chief Specialist	Meeting with State Agency of Standard Tajikstandart
June 28, 2022	TE mission team Project team	Wrap-up of the day. Meeting with UNDP Project team.
June 29, 2022	TBD	Meeting with Engineering and Pedagogical College
June 29, 2022	Mr. Bakhtiyor Djaborrov Chairman of RAC Association	Meeting with RAC Association “Artificial Cold”
June 30, 2022	TBD	Visit to the project site (tbc) in Dushanbe
June 30, 2022	TE Mission team Project Team UNDP CO Monitoring and Evaluation Team	De-Briefing Meeting with UNDP CO and Project Teams (UNDP Management)

Annex 3. List of Persons Interviewed (Implemented)

Note: Semi-structured interviews, focus-group discussions, field visits, conducted by the Evaluation Team Members – *Mr. Alexandre Chaikine*, Team Leader/International Consultant, and *Mr. Shukhrat Igamberdyev*, Team Member/National Consultant.

#	DATE/TIME	INTERVIEWEE / STAKEHOLDER	TE TEAM MEMBERS
1	16 May 2022 Communication Mode: **E-mail** Communication	**United Nations Development Programme** (UNDP), Istanbul Regional Hub Mr. Maksim Surkov, Regional Technical Advisor, UNDP Istanbul Regional Hub	Mr. Alexandre Chaikine, Team Leader/ International Consultant
2	15 June 2022 / 10:00 – 12:00 Meeting Mode: **In-Person** at UNDP Project Office 39 Aini Avenue, Dushanbe Meeting Structure: **Semi-Structured** Interview	**United Nations Development Programme** (UNDP) Project Team. UNDP/GEF "*Complete HCFC Phase-out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies*" Mr. Khurshed Kholov, Project Manager Mr. Khurshed Khusainov, Project Technical Coordinator	Mr. Shukhrat Igamberdyev, Team Member/ National Consultant
3	17 June 2022 / 15:00 – 16:00 Meeting Mode: **In-Person** at UNDP Project Office 39 Aini Avenue, Dushanbe Meeting Structure: **Semi-Structured** Interview	**Committee for Environmental Protection** under the Government of the Republic of Tajikistan (CoEP) Mr. Saidusmon Sudurov, Head of Department for Water Resources Management / Previously Head of Department for Protection of Atmospheric Air (Focal Coordinator on behalf of the CoEP)	Mr. Shukhrat Igamberdyev, Team Member/ National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
4	17 June 2022 / 16:00 – 17:00 Meeting Mode: **In-Person** at UNDP Project Office 39 Aini Avenue, Dushanbe Meeting Structure: **Semi-Structured** Interview	**Agency of Standardization, Metrology, Certification, and Trade Inspection** under the Government of the Republic of Tajikistan (TajikStandard) Mrs. Adiba Abduvalieva, Lead Specialist, Department for Standardization, Direction of Technological Normalization and Standardization	Mr. Shukhrat Igamberdyev, Team Member/ National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)

5	18 June 2022 / 10:00 – 11:30 Meeting Mode: **In-Person** at College premises, 48 Borbad Street, Dushanbe Meeting Structure: **Focus Group Discussions (FGD)** with young female technicians	**Engineering and Pedagogical College** in Dushanbe Focus Group Discussion Participants: Ms. Gulnoza Sayfulloeva – LLC "Vostok" Ms. Gulbahori Nasim – LLC "Vostok" Ms. Idoma Mamadatoeva – LLC "Vostok" Ms. Anisa Alieva – LLC "Vostok" Ms. Ganjinai Rahmonali – LLC "Artel" Ms. Dilnoza Mirzoalieva – LLC "Sultoni Kabir" Ms. Omina Halimova – LLC "Sultoni Kabir" Ms. Shabnam Mardonova – LLC "Sultoni Kabir"	Mr. Shukhrat Igamberdyev, Team Member/ National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
6	18 June 2022 / 11:30 – 12:30 Meeting Mode: **In-Person** at College premises, 48 Borbad Street, Dushanbe Meeting Structure: **Semi-Structured** Interview	**Engineering and Pedagogical College** in Dushanbe Involved Members of Staff: Ms. Mahina Ibrohimi – Lead Specialist, Department for International Relations (College) Ms. Shahlo Gulova, Head of Department for International Relations (College) Mr. Sharaf Roziqov, Deputy Director (College) on Science and International Relations Mr. Umarkhon Himmatullo, Specialist, Department for Science / Coordinator and Director of Centre for Short-Term Courses (College) Ms. Farishta Safarova – Teacher (College)	Mr. Shukhrat Igamberdyev, Team Member/ National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
7	21 June 2022 / 10:00 – 11:30 Meeting Mode: **In-Person** at the office of the RAC Association, Dushanbe Meeting Structure: **Semi-Structured** Interview / Site Visit	**Refrigeration and Air-Conditioning Association** (RAC Association) Members of the Association: Mr. Abduqahor Asadov, Member of the Association / Trade Representative of LLC "Volna" Mr. Bakhtiyor Jabborov, Chairman of RAC Association Mr. Sharofiddin Khuseinzoda, Member of the Association / Chief Engineer of LLC "ECAUD" (ООО «ЭКАУД) Mr. Abdurahim Kalonov, Member of the Association, LLC ECAUD Mr. Radzhabali Avazov, Member of the Association, LLC "ECAUD" Mr. Qosim Ibrohimov, Member of the Association, LLC ECAUD	Mr. Shukhrat Igamberdyev, Team Member/ National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
8	22 June 2022 / 09:30 – 10:30 Meeting Mode: **In-Person** at the Yovon Chemical Factory site, Yovon district	**Yovon Chemical Factory** for centralized (temporary) storage of ODS waste (with storage capacity of 32MT) Sub-Project: "*Upgrading of the warehouse for temporary storage of ODS waste*"	Mr. Shukhrat Igamberdyev, Team Member/ National Consultant Accompanied by: Mr. Khurshed Khusainov, Project

	Meeting Structure: **Semi-Structured** Interview / Site Visit	Mr. Nematullo Iskandarov, Chief Engineer, OJSC "TajikKhimProm" (ОАО «Таджикхимпром») / Site Manager	Technical Coordinator (UNDP)
9	22 June 2022 / 15:00 – 16:00 Meeting Mode: **In-Person**, 42 Nemat Karabaeva Street, Dushanbe Meeting Structure: **Semi-Structured** Interview	**Dushanbe Regional Customs Administration / Customs Service** under the Government of the Republic of Tajikistan Mr. Jamshed Abduqodirzoda, Head of Department for Organization of Customs Control.	Mr. Shukhrat Igamberdyev, Team Member/ National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
10	27 June 2022 / 17:00 – 19:00 Meeting Mode: **In-Person** Meeting Structure: **Semi-Structured** Interview	**United Nations Development Programme** (UNDP) Project Team. UNDP/GEF "*Complete HCFC Phase-out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies*" Mr. Khurshed Kholov, Project Manager Mr. Khurshed Khusainov, Project Technical Coordinator	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant
11	28 June 2022 / 10:20 – 11:20 Meeting Mode: **In-Person** at the Office of the Customs Service Agency in Dushanbe Meeting Structure: **Semi-Structured** Interview	**Customs Service** under the Government of the Republic of Tajikistan Mr. Qurbonmurod Sultonov, Head of Administration for Unified Automated Information Systems (UAIS) Mr. Musavvi Pirov, Chief Inspector, Department for International Customs Cooperation Mr. Ismoil Safarov, Specialist on Technical Control Measaures Mr. Shahzod Davlatmirov, Chief Inspector, Department for Organization of Customs Control	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
12	28 June 2022 / 11:30 – 12:30 Meeting Mode: **In-Person** at the Office of Ministry in Dushanbe Meeting Structure: **Semi-Structured** Interview	**Ministry of Health and Social Protection of the Population (MoHSP)** of the Republic of Tajikistan: Mr. Abdukholiq Amirzoda Amir, Deputy Minister/ Chief State Sanitary Doctor of the Republic of Tajikistan Mr. Navruz Djafarov, Head of Department for Epidemiological Safety, Emergencies and Emergency Aid	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant Accompanied by: Mr. Khurshed Khusainov, Project

			Technical Coordinator (UNDP)
13	28 June 2022 / 15:00 – 16:00 Meeting Mode: **In-Person** at the UNDP Country Office in Dushanbe Meeting Structure: **Briefing / Presentation** of preliminary TE findings to UNDP Senior Management	**United Nations Development Programme (UNDP)**, Country Office, Senior Management Team Ms. Muhiba Rabejonova, Cluster Team Leader a.i. (Environment, Energy and Disaster Risk Reduction), UNDP CO Ms. Zebo Jalilova, Team Leader on Sustainable and Inclusive Economic Development and SDGs, UNDP CO Ms. Zarina Mavlyanova, Monitoring and Evaluation Analyst, UNDP CO	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
14	29 June 2022 / 08:00 – 09:20 Meeting Mode: **In-Person** at the office of the RAC Association, Dushanbe Meeting Structure: **Semi-Structured** Interviews and Focus Group Discussions / Site Visit	**Refrigeration and Air-Conditioning Association** (RAC Association) Members of the Association: Mr. Abduqahor Asadov, Member of the Association / Lead RAC Technician of LLC "Vostok" Mr. Bakhtiyor Jabborov, Chairman of RAC Association / Republic Public Organization "Centre for Artificial Cooling" Mr. Nasreddin Bobobekov, Engineer / Climate Technician, LLC Atlant Mr. Saidali Sharipov, Individual Entrepreneur Mr. Radzhabali Avazov, Member of the Association, Head of Site Installations, LLC "ECAUD" Mr. Nizom Karimov, Business Centre "ASHAN", Engineer / Climate Technician Mr. Tohir Shermatov, LLC "Babilon", Manager of Climate Technology Services Department Mr. Alexander Dmitrichenko, LLC "BOSCH", Master / Climate Technician Mr. Pavel Ovchinnikov, LLC "BOSCH", Engineer / Climate Technician Mr. Sharofiddin Khuseinzoda, Member of the Association / Chief Engineer of LLC "ECAUD" (ООО «ЭКАУД)	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
15	29 June 2022 / 09:30 – 10:15 Meeting Mode: **In-Person** at the office of the Committee, Dushanbe Meeting Structure:	**Committee for Environmental Protection** under the Government of the Republic of Tajikistan (CoEP) Mr. Ibodullo Mahmadullo, Head of Department for Protection of Atmospheric Air (Focal Coordinator on behalf of the CoEP) Mr. Saidusmon Sudurov, Head of Department for Water Resources Management / Previously Head of	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant Accompanied by:

	Semi-Structured Interviews	Department for Protection of Atmospheric Air (Focal Coordinator on behalf of the CoEP)	Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
16	29 June 2022 / 10:30 – 12:00 Meeting Mode: **In-Person** at the College, Dushanbe Meeting Structure: **Semi-Structured** Interviews and Focus Group Discussions / Site Visit	**Engineering and Pedagogical College** in Dushanbe Involved Members of College Staff: Ms. Mahina Ibrohimi – Lead Specialist, Department for International Relations (College) Ms. Shahlo Gulova, Head of Department for International Relations (College) Mr. Sharaf Roziqov, Deputy Director (College) on Science and International Relations Mr. Umarkhon Himmatullo, Specialist, Department for Science / Coordinator and Director of Centre for Short-Term Courses (College) Focus Group Discussion Participants *(Young Female RAC Technicians and Women's Group Representatives)*: Ms. Anisa Alieva – LLC "Vostok" Ms. Maftuna Nazarova – LLC "Vostok" Ms. Sadbarg Shirinova – Representative of the Committee of Women and Family Affairs under the Government of the Republic of Tajikistan Ms. Zulhiya Dostieva – Representative of the Committee of Women and Family Affairs under the Government of the Republic of Tajikistan	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
17	29 June 2022 / 14:00 – 15:30 Meeting Mode: **In-Person** at the office of the Agency, Dushanbe Meeting Structure: **Semi-Structured** Interview	**Agency of Standardization, Metrology, Certification, and Trade Inspection** under the Government of the Republic of Tajikistan (TajikStandard) Mr. Ulughbek Akhmedov, Chief Specialist, Department for International Relations Mr. Mirzosharif Samiev, Head of Testing Laboratory for Petrochemicals Mr. Qodirkhon Yusupov, Chief Specialist, Testing Laboratory for Petrochemicals Mrs. Adiba Abduvalieva, Lead Specialist, Department for Standardization, Direction of Technological Normalization and Standardization	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
18	01 July 2022 / 08:00 – 09:30 Meeting Mode: **In-Person** at the storage facility/site of the Ministry of Health and Social	**Ministry of Health and Social Protection** of the Population of the Republic of Tajikistan (MoHSP) Mr. Kholmurod Khudoiev, Director, State Organization "Pharmaceutical and Medical Goods Service Centre" under the Ministry of Health and Social Protection of the Population of the Republic of Tajikistan (MoHSP)	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant

	Protection in Dushanbe. Meeting Structure: **Semi-Structured** Interviews, Site Visit.	Mr. Boir Shomudinov, Medical Officer/ Epidemiologist, Ministry of Health and Social Protection of the Population of the Republic of Tajikistan (MoHSP)	Accompanied by: Mr. Khurshed Khusainov, Project Technical Coordinator (UNDP)
19	01 July 2022 / 14:00 – 16:00 Meeting Mode: **In-Person** at the Conference Hall of the Atlas Hotel, Dushanbe Meeting Structure: **Project Steering Committee** Meeting	**Project Steering Committee (PSC) / Board –** UNDP/GEF "*Complete HCFC Phase-out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies*" Participants: Ms. Robiya Mirzoeva, Chief Specialist, Department of Economics and Planning in the Field of Education and Science, Ministry of Education and Science of the Republic of Tajikistan Mr. Saidusmon Sudurov, Head of Department for State Control Over the Protection and Use of Atmospheric Air, Committee for Environmental Protection under the Government of the Republic of Tajikistan Ms. Adiba Abduvalieva, Head of Department for Standardization, Metrology, Certification and Trade Inspection under the Government of the Republic of Tajikistan Mr. Bakhtiyor Jabborov, Chairman, Association of the Regional Public Organization "Center for Artificial Cold" (RAC Association) of the Republic of Tajikistan Mr. Vladimir Lekarkin, Programme Associate a.i., UNDP Tajikistan Country Office Mr. Khurshed Kholov, Project Manager, HCFC II, UNDP Tajikistan Mr. Khurshed Khusainov, Project Technical Coordinator, HCFC II, UNDP Tajikistan Mr. Akbar Rasulov, Project Administrative and Finance Assistant, HCFC II Project, UNDP Tajikistan Mr. Toir Shermatov, JSP "Babilon-Mobile" Mr. Shahlo Gulova, Head of Department for International Relations (College) Mr. Nematullo Kurbonov, LLC "Vostok" (Volna), Tajikistan	Mr. Alexandre Chaikine, Team Leader/ International Consultant, and Mr. Shukhrat Igamberdyev, Team Member/National Consultant

Annex 4. List of Documents Reviewed

	ITEM
1	Project Identification Form (PIF)
2	UNDP Initiation Plan
3	Final UNDP-GEF Project Document with all annexes
4	CEO Endorsement Request
5	UNDP Social and Environmental Screening Procedure (SESP) and associated management plans (if any)
6	Inception Workshop Report
7	All Project Implementation Reports (PIRs)
8	Progress reports (quarterly, semi-annual or annual, with associated workplans and financial reports)
9	Oversight mission reports
10	Minutes of Project Board Meetings and of other meetings (i.e., Project Appraisal Committee meetings)
11	GEF Tracking Tools
12	GEF/LDCF/SCCF Core Indicators (from PIF, CEO Endorsement) for GEF-6 and GEF-7 projects only
13	Financial data, including actual expenditures by project outcome, including management costs, and including documentation of any significant budget revisions
14	Co-financing data with expected and actual contributions broken down by type of co- financing, source, and whether the contribution is considered as investment mobilized or recurring expenditures
15	Electronic copies of project outputs (booklets, manuals, technical reports, articles, etc.)
16	Sample of project communications materials
17	Summary list of formal meetings, workshops, etc. held, with date, location, topic, and number of participants
18	List of contracts and procurement items over ~US$5,000 (i.e. organizations or companies contracted for project outputs, etc.)
19	List of related projects/initiatives contributing to project objectives approved/started after GEF project approval (i.e., any leveraged or “catalytic” results)
20	UNDP Country Programme Document (CPD)
21	List/map of project sites, highlighting suggested visits
22	Project deliverables that provide documentary evidence of achievement
23	Terminal Evaluation of UNDP -GEF Project: "Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region" 2018
24	Mid Term Review of UNDP -GEF Project: “Initial Implementation of Accelerated HCFC Phase Out in the CEIT Region” 2016

Annex 5. Evaluation Question Matrix

Evaluation Questions	Indicators	Sources	Data Collection Method
Evaluation Criteria: Relevance ***How does the project relate to main objectives of the GEF Focal area, and to the environment and development priorities at the local, regional and national level?***			
Does the project's objective align with the priorities of the local government and local communities?	Level of coherence between project objective and stated priorities of local stakeholders	Local stakeholders Document review of development strategies, policies, etc.	Local level field visit interviews Desk review
Does the project's objective fit within the national environment and development priorities? Who are the main beneficiaries of the project and how does the project address their development needs?	Level of coherence between project objective and national policy priorities and strategies, as stated in official documents	National policy documents.	Desk review National level interviews
Did the project concept originate from local or national stakeholders, and/or were relevant stakeholders sufficiently involved in project development?	Level of involvement of local and national stakeholders in project origination and development (number of meetings held, project development processes incorporating stakeholder input, etc.)	Project staff Local and national stakeholders Project documents	Field visit interviews Desk review
Does the project objective fit GEF strategic priorities?	Level of coherence between project objective and GEF strategic priorities (including alignment of relevant focal area indicators)	GEF strategic priority documents for period when project was approved Current GEF strategic priority documents	Desk review
Was the project linked with and in-line with UNDP priorities and strategies for the country?	Level of coherence between project objective and design with UNDAF, UNDP	UNDP strategic priority documents	Desk review
Does the project's objective support implementation of the MP?	Linkages between project objective and elements of the MP, such as key articles and programs of work	National ODC management Strategy and Action Plan	Desk review
Evaluation Criteria: Efficiency ***Was the project implemented efficiently, in line with international and national norms and standards?***			
Is the project cost- effective? Has the project or programme been implemented within the original timeframe and budget? Have there been any outside factors (e.g. political instability) affecting on implementation effectiveness?	Quality and adequacy of financial management procedures (in line with UNDP, UNOPS, and national policies, legislation, and procedures) Financial delivery rate vs. expected rate Management costs as a percentage of total costs	Project documents Project staff	Desk review Interviews with project staff
Are expenditures in line with international standards and norms? Has there been over-expenditure or under-expenditure on the project?	Cost of project inputs and outputs relative to norms and standards for donor projects in the country or region	Project documents Project staff	Desk review Interviews with project staff
Is the project implementation approach efficient for delivering the planned project results?	Adequacy of implementation structure and mechanisms for coordination and communication Planned and actual level of human	Project documents National and local stakeholders Project staff	Desk review Interviews with project staff Interviews with

Evaluation Questions	Indicators	Sources	Data Collection Method
	resources available Extent and quality of engagement with relevant partners / partnerships Quality and adequacy of project monitoring mechanisms (oversight bodies' input, quality and timeliness of reporting, etc.)		national and local stakeholders
Is the project implementation delayed? If so, has that affected cost- effectiveness? Have UNDP and its partners taken prompt actions to solve implementation issues, if any?	Project milestones in time Planned results affected by delays Required project adaptive management measures related to delays	Project documents Project staff	Desk review Interviews with project staff
What is the contribution of cash and in-kind co-financing to project implementation?	Level of cash and in- kind co-financing relative to expected level	Project documents Project staff	Desk review Interviews with project staff
To what extent is the project leveraging additional resources?	Amount of resources leveraged relative to project budget	Project documents Project staff	Desk review Interviews with project staff
Evaluation Criteria: Effectiveness - To what extent have the expected outcomes and objectives of the project been achieved?			
Are the project objectives likely to be met? To what extent are they likely to be met?	Level of progress toward project indicator targets relative to expected level at current point of implementation	Project documents Project staff Project stakeholders	Field visit interviews Desk review
What are the key factors contributing to project success or underachievement?	Level of documentation of and preparation for project risks, assumptions and impact drivers	Project documents Project staff Project stakeholders	Field visit interviews Desk review
What are the key risks and barriers that remain to achieve the project objective?	Presence, assessment of, and preparation for expected risks, assumptions and impact drivers	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Are the key assumptions and impact drivers relevant to the achievement of global environmental benefits likely to be met?	Actions undertaken to address key assumptions and target impact drivers	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Evaluation Criteria: Results ***To what extent are the project results achieved?***			
Have the planned outputs been produced? Have they contributed to the project outcomes and objectives? What were the unintended results (+ or -) of the project?	Level of project implementation progress relative to expected level at current stage of implementation Existence of logical linkages between project outputs and outcomes / impacts	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Are the anticipated outcomes likely to be achieved? Are the outcomes likely to contribute to the achievement of the project objective?	Existence of logical linkages between project outcomes and impacts	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Are impact level results likely to be achieved? Are the likely to be at the scale sufficient to be considered global environmental benefits?	Environmental indicators Level of progress through the project's Theory of Change	Project documents Project staff Project stakeholders	Field visit interviews Desk review

Evaluation Questions	Indicators	Sources	Data Collection Method
Evaluation Criteria: Sustainability ***To what extent are there financial, institutional, socio-political, and/or environmental risks to sustaining long-term project results?***			
To what extent are project results likely to be dependent on continued financial support? What is the likelihood that any required financial resources will be available to sustain the project results once the GEF assistance ends?	Financial requirements for maintenance of project benefits Level of expected financial resources available to support maintenance of project benefits Potential for additional financial resources to support maintenance of project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Do relevant stakeholders have or are likely to achieve an adequate level of "ownership" of results, to have the interest in ensuring that project benefits are maintained?	Level of initiative and engagement of relevant stakeholders in project activities and results	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Do relevant stakeholders have the necessary technical capacity to ensure that project benefits are maintained?	Level of technical capacity of relevant stakeholders relative to level required to sustain project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
To what extent are the project results dependent on socio- political factors?	Existence of socio- political risks to project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
To what extent are the project results dependent on issues relating to institutional frameworks and governance?	Existence of institutional and governance risks to project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Are there any environmental risks that can undermine the future flow of project impacts and global environmental benefits?	Existence of environmental risks to project benefits	Project documents Project staff Project stakeholders	Field visit interviews Desk review
Does/did the project have an exit strategy? How does UNDP propose to exit from projects that have run for several years? To what extent does the exit strategy take into account: - support from national authorities - available budgets) - skills and expertise needed) - environmental sustainability)	Level of progress toward establishing the project exit strategy Results of various factors consideration	Project documents Project staff Project stakeholders	Desk review Interviews with project staff and stakeholders
What actions have been taken to scale up the project pilot initiatives? Has the government taken on these initiatives? Have donors stepped in to scale up initiatives?	Level of progress toward establishing the project pilot initiatives	Project documents Project staff Project stakeholders	Desk review Interviews with project staff and stakeholders
Gender equality and women's empowerment ***How did the project contribute to gender equality and women's empowerment?***			
How did the project contribute to gender equality and women's empowerment?	Level of progress of gender action plan and gender indicators in results framework	Project documents Project staff Project stakeholders	Desk review, interviews, field visits
In what ways did the project's gender results advance or	Existence of logical linkages between gender results and	Project documents Project staff	Desk review, interviews, field

Evaluation Questions	Indicators	Sources	Data Collection Method
contribute to the project's outcomes?	project outcomes and impacts	Project stakeholders	visits
To what extent was the UNDP initiative designed to appropriately incorporate in each outcome area contributions to attainment of gender equality? To what extent did UNDP support positive changes in terms of gender equality and were there any unintended effects?	Level of initiative towards attainment of gender equality in project activities	Project documents Project staff Project stakeholders	Desk review, interviews, field visits
Cross-cutting and UNDP Mainstreaming Issues			
How were effects on local populations considered in project design and implementation?	Positive or negative effects of the project on local populations.	Project document, progress reports, monitoring reports	Desk review, interviews, field visits
Covid-19 specific question: To what extent the pandemic Covid-19 impacted/ influenced the timely and quality implementation and achievement of the project activities/ results.			
How were COVID 19 effects on project implementation considered?	Positive or negative effects of the COVID 19 on project.	Project document, progress reports, monitoring reports	Desk review, interviews, field visits
Impact: Are there indications that the project has contributed to, or enabled progress toward reduced environmental stress and/or improved ecological status?			
How were effects on project implementation considered?	Positive or negative effects of the project outcomes on environment	Project document, progress reports, monitoring reports	Desk review, interviews, field visits
Which (if any) are still missing gaps between the project outcomes and realization of the expected impacts? Are the necessary conditions in place for enabling scaling up of outcomes into impacts?	Level of initiative and engagement of relevant stakeholders in project activities and results Documented commitments to scale up the project's outcomes	Project documents Project staff Project stakeholders	Desk review, interviews, field visits
Are government agencies encouraged/enabled to facilitate wider adoption of the project results? Have senior and influential government officials endorsed the project's innovative approaches and champion the development of a more enabling policies, mechanisms and strategies for wider adoption?	Level of initiative and engagement of relevant stakeholders in project activities and results Documented commitments to support adoption of the project's results	Project documents Project staff Project stakeholders	Desk review, interviews, field visits
Evaluation Criteria: Monitoring & Evaluation			
What mechanisms does UNDP have in place to monitor implementation? Are these effective?	Project monitoring Indicators in place and are effective and feasible for reporting on progress	Project document, progress reports, monitoring reports	Desk review, interviews, field visits

Annex 6. Questionnaire

Questionnaire

This questionnaire serves as an informal aid in prompting discussion during the interviews and has been supplemented with additional questions.

Project Formulation

1. Did you observe any problems or gaps in the project design or approach that affected project implementation?
2. Was there adequate participation of stakeholders and beneficiaries in the project formulation? (How were you involved?)
3. Has the project strategy – technical support/training, development and piloting, been effective? How could it have been improved?

Project Implementation

4. How effective and efficient was the Project Structure in facilitating project coordination, communications and implementation at national, regional and local levels? Would you have changed anything in hindsight?
5. Has annual work planning and budgeting been effective? Have actual disbursements been in line with annual budgets, work plans and schedules? Were there any delays in administrative processes?
6. Have the project management bodies and partners been sufficiently active in guiding and responding to issues? (Examples?)
7. Have the project monitoring Indicators been effective and feasible for reporting on progress? Have they provided reliable measures of change?
8. What have been the major challenges or issues in implementing the project? Are there lessons for design of future projects?
9. What are the characteristics of development in the project pilot sites? What features have affected agreement or non-agreement?

Project Results

10. What aspects of the project have been most successful, and which least successful? Are there specific measures that have affected the potential for replication?
11. Can you identify the Key Factors that have affected the project results – either positive or negative?
12. What has been the most apparent change in ODS management that you have seen from the project? What gaps remain in capacity development?
13. What is the most important learning or skill, if any, that you have acquired from the project trainings or demonstrations? Any post-training data?
14. Are there any expected results that have not been completely achieved or are not fully satisfactory?

Sustainability

15. Do you think that the use of project results will be continued after the project closes? Why? Why not?

16. Are there any exit strategies for the project? What actions could be considered to enhance sustainability? How will lessons be shared within Tajikistan and with other countries?

Impact

17. Should any further changes in government policy or regulations be considered to assist mainstreaming incentives into the ODS management strategy?
18. Are there any specific examples of alternatives that could provide models for replication?
19. Is there any empirical evidence of project impact on government ODS management budgets allocations?

Annex 7. Terminal Evaluation: Rating scales

The project **M&E and Implementation/Oversight and Execution** are rated for each individual component (outcome) as follows:

6 = Highly satisfactory (HS). The project had no shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

5 = Satisfactory (S). The project had minor shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

4 = Moderately satisfactory (MS). The project had moderate shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

3 = Moderately unsatisfactory (MU). The project had significant shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

2 = Unsatisfactory (U). The project had major shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

1 = Highly unsatisfactory (HU). The project had severe shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency.

Unable to Assess (UA). The available information does not allow an assessment of the level of outcome achievements.

The project **Relevance, Effectiveness,** and **Efficiency** are rated for each individual component (outcome) as follows:

6 = Highly satisfactory (HS). Level of outcomes achieved clearly exceeds expectations and/or there were no shortcomings

5 = Satisfactory (S). Level of outcomes achieved was as expected and/or there were no or minor shortcomings

4 = Moderately satisfactory (MS). Level of outcomes achieved more or less as expected and/or there were moderate shortcomings

3 = Moderately unsatisfactory (MU). Level of outcomes achieved somewhat lower than expected and/or there were significant shortcomings

2 = Unsatisfactory (U). Level of outcomes achieved substantially lower than expected and/or there were major shortcomings.

1 = Highly unsatisfactory (HU). Only a negligible level of outcomes achieved and/or there were severe shortcomings

Unable to Assess (UA). The available information does not allow an assessment of the level of outcome achievements

Sustainability is rated according to the following scale:

Likely (L) negligible risks to sustainability, with key outcomes expected to continue into the foreseeable future. There is little or no risks to sustainability.

Moderately Likely (ML) moderate risks, but expectations that at least some outcomes will be sustained. There are moderate risks to sustainability.

Moderately Unlikely (MU) substantial risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on. There are significant risks to sustainability.

Unlikely (UL) severe risk that project outcomes as well as key outputs will not be sustained. There are severe risks to sustainability.

Unable to Assess (UA): Unable to assess the expected incidence and magnitude of risks to sustainability

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

Annex 8. Signed UNEG Code of Conduct form

Evaluators/Consultants:

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

Evaluation Consultant Agreement Form:

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

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

Signed in Calgary on **April 16, 2022**

Signature: 

Names: Alexandre Chaikine

Signed in Dushanbe on **June 8, 2022**

Signature: 

Shukhrat Igamberdyev

Annex 9. Signed TE Report Clearance form

TE Report Clearance Form

Terminal Evaluation Report for 6030 ID Project "Complete HCFC Phase-Out in Tajikistan through Promotion of zero ODS, low GWP, Energy Efficient Technologies"

Reviewed and Cleared By:

Commissioning Unit (M&E Focal Point)

Name: Zarina Mavlyanova

Signature: DocuSigned by: Zarina Mavlyanova 41616717FDDD4EE... Date: 04-Aug-2022

Regional Technical Advisor (Nature, Climate and Energy)

Name: Maksim Surkov

Signature: DocuSigned by: Maksim Surkov CD04749A807D48E... Date: 08-Aug-2022

Annex 10. TE Audit Trail

Annexed in a separate file.

Annex 11. Relevant terminal GEF Core Indicators and Tracking Tools

Annexed in a separate file.

Annex 12. Confirmed Sources of Co-financing table

Annexed in a separate file.

Annex 13. Management Response Table

Annexed in a separate file.