United Nations Development Programme

Global Environment Facility

Phase-out of Endosulfan in China

GEF/UNDP Medium-sized 1 Step Project
(PIMS #6054, GEF ID #9724)

People's Republic of China

TERMINAL EVALUATION REPORT

i. Opening page – Basic Project Information

Title of the UNDP-supported GEF-financed project
Phase-out of Endosulfan in China

Project ID#S
UNDP PIMS ID 6054
GEF ID 9724

Project start date
9th May 2017

Project end date
Planned: 9th May 2021 Revised: 9th December 2021 (Operational Closure)

Project duration
Planned 4 years (48 months) Revised: 55 months

Evaluation timeframe
June/September 2021

Date of the Terminal Evaluation Report
30 November 2021

Region
Asia & Pacific

Country
People's Republic of China

GEF Operational Focal Area/Strategic Program
Chemicals

Executing Agency/Implementing Partner
Foreign Environmental Cooperation Office (FECO)/Ministry of Ecology and Environment of China (MEE)

TE Team of evaluators
Dr. F. Forabosco and Dr. Y. Tong

ii. Acknowledgments

A deep thanks to all the people who have taken the time to provide the author with information utilized to formulate this Terminal Evaluation Report. A special thanks to Dr. Y. Tong and the PMU for their support in organizing the entire process of remote meetings, interviews, and assistance that made this evaluation exercise possible.

iii. Table of Contents

Tables

iv. Acronyms and abbreviations

APR	Annual Progress Report
COVID-19	Corona Virus Disease 2019
FFS	Farmers Field School
GEF	Global Environment Facility
GoC	Government of China
IA	Implementation Agency
IP	Implementing Partner
IPM	Integrated Pest Management
IR	Inception Report
LPMO	Local Project Management Offices
M&E	Monitoring and Evaluation
MEE	Ministry of Ecology and Environment of China
MIIT	Ministry of Industry and Information Technology
MARA	Ministry of Agriculture and Rural Affairs
MOF	Ministry of Finance
MTR	Mid Term Review
NAP	National Action Programme
NE	National Expert
NIM	National Implementation Modality
NPT	National Project Team
NSG	National Steering Group
OFP	Operational Focal Point
PIF	Project Identification Form
PIR	Project Implementation Review
PMU	Project Management Unit
POP	Persistent Organic Pollutant
ProDoc	Project Document
PCM	Project Cycle Management
SC	Steering Committee

SESP	Social and Environmental Screening Procedure
TCG	Technical Coordination Group
ToC	Theory of Change
ToR	Term of References
TE	Terminal Evaluation
TR	Terminal Review
UNDP	United Nations Development Programme
UNDP CO	United Nations Development Programme Country Office
UNDP GEF	United Nations Development Programme Global Environment Facility
UNEG	United Nations Evaluation Group

1. Executive Summary

1.1 Project Information Table

Project Details		Project Milestones	
Project Title:	Phase-out of Endosulfan in China	**PIF Approval Date:**	N/A
UNDP-GEF Project ID (PIMS #):	6054	**MSP Approval date:**	2 Feb. 2017
GEF Project ID:	9724	**ProDoc Signature Date:**	9 May 2017
UNDP Atlas Business Unit, Award ID, Project ID:	UNDP Atlas Business Unit; CHN10 Atlas Award ID: 00095048 Project ID: 00099101	**Date Project Manager hired:**	N/A
Country/Countries:	People's Republic of China	**Inception Workshop Date:**	11 Sep. 2017
Region:	Asia & Pacific	**Mid-Term Review Completion Date:**	N/A
Focal Area:	Chemicals	**Terminal Evaluation Completion Date:**	30 Nov. 2021
GEF Operational Programme or Strategic Priorities/Objectives:	CW1 Strategy Objective: Develop the enabling conditions, tools, and environment for the sound management of harmful chemicals and wastes. CW 2 Strategy Objective: Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies / substances.	**Planned Operational Closure Date:**	9 Dec. 2021

Trust Fund: [indicate GEF TF, LDCF, SCCF, NPIF]	GEF TF
Implementing Partner (GEF Executing Entity):	Foreign Environmental Cooperation Office (FECO)/Ministry of Ecology and Environment of China (MEE)
NGOs/CBOs involvement	N/A
Private sector involvement:	N/A
Geospatial coordinates of project sites: [Coordinates are available in the annual PIRs]	N/A

Financial Information PDF/PPG	at approval (US$)	at PDF/PPG completion
GEF PDF/PPG grants for project preparation	**0**	**0**
Co-financing for project preparation	**0**	**0**
Project	**at CEO Endorsement (US$)**	**at TE (US$)**
[1] UNDP contribution:	**100,000**	**100,000**
[2] Government:	**4,600,000**	**7,820,000**
[3] Other multi-/bi-laterals:	**0**	**0**
[4] Private Sector:	**3,220,000**	**N/A**
[5] NGOs:	**0**	**0**

[6] Total co-financing [1 + 2 + 3 + 4 + 5]:	**7,920,000**	**7,920,000**
[7] Total GEF funding:	**1,980,000**	**1,980,000**
[8] Total UNDP funding:	**0**	**0**
[9] Total Project Cost [7 + 8]:	**1,980,000**	**1,980,000**
[10] Total Project Funding [6 + 9]	**9,900,000**	**9,900,000**

1.2 Brief Project Description

The Phase-out of Endosulfan in China project aimed to stop the utilization of endosulfan and replace it with biological control and alternative modern sustainable technologies. The main objectives of this project were to propose, test, and disseminate the use of alternative and environmentally friendly tools to combat pests in cotton using a) biological control and b) alternative modern technologies in pilot locations. Furthermore, through the test and implementation phases of a national replication program, this project scaled up and disseminated best practices and lessons learned among Chinese farmers.

Endosulfan is a broad-spectrum insecticide with high efficacy and long persistence widely used for controlling cotton, tobacco, fruit, and tea tree insects and mites in agriculture. Cotton is mostly cultivated in 12 provinces and in the Xinjiang Autonomous Region in an area of about 4.21 million ha, with a total production of 6.16 million tons in 2014. Tobacco is cultivated in 16 provinces in an area of about 1.2 million ha. Cotton and tobacco are subject to intensive pesticide sprayings that lead to a series of negative economic, environmental, and social consequences. This pesticide increases farming costs, the risk of poisoning farmers, polluting the soil and underground water.

Within this framework, the four-year Phase-out of Endosulfan in China project was developed with the scope of helping China fulfill the requirement of the Stockholm Convention and eliminate the usage of endosulfan in cotton and tobacco cultivation in China. The project's objective was to eliminate endosulfan usage by adopting biological control and Integrated Pest Management (IPM) that are friendly to the environment and human beings. The project’s scope is (i) strengthening the current institutional capacity, establishing an effective coordination and management mechanism, and reinforcing the policy framework to facilitate the elimination of endosulfan and promotion of biological control and alternatives; (ii) promoting the use of the biological control by farmers, in particular, evaluating and demonstrating environmentally friendly measures, especially biological control in pilot areas where cotton is being cultivated; (iii) developing cotton pest and endosulfan monitoring systems in the pilot areas, disseminating information on biological and alternative technologies to the project communities including policymakers, extension agencies, and farmers to support the phase-out of endosulfan; (iv) developing a national replication program and work plan to disseminate project achievements and for achieving phase-out of the production and use of endosulfan; and finally, (v) developing of systematic M&E plans to monitor progress toward achieving the project objectives and outputs, and to track the global environmental benefits.

Project design: Specifically, the Phase-out of Endosulfan in China project’s design included an objective, four components, and several outcomes.

Project’s objective: Phase out of Endosulfan by Biological Control and Alternative Technologies in Cotton Pest Management in China

Project’s components

Component # 1: Institutional strengthening and capacity building,
Component # 2: Development of integrated technical models of biological control and alternative technologies development,
Component # 3: Development of a national replication programme,
finally, the component # 4: Project monitoring and evaluation.

1.3 Evaluation Ratings Table

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

1.4 Concise summary of findings and conclusions

Findings: The stakeholders interviewed highlighted this project's positive impact on the environment, farmers, and Chinese society. Furthermore, this project was highly relevant for its contribution to the reduction of POPs and elimination of endosulfan in China.

The Phase-out of Endosulfan in China project was relevant in terms of stakeholders' engagement, methodology used, and approach to solve the problem. The approach was holistic and well-organized, considering three levels of relevant interventions: policy level, stakeholder level, and educational/training level.

The project has effectively and efficiently contributed to the achievement of the project's objectives. In particular, the project coordinated efforts with other initiatives run by MEE, FECO, and UNDP China CO to prepare the Monitoring System and contributed to tracking the selling of endosulfan and other restricted pesticides.

Furthermore, the project has efficiently supported the MEE/FECO and local authorities to implement the local POPs plan, the publication of the National Food Safety Standard, the Maximum Residue Limits for pesticides, and contributed to China's Strictly Restricted List of Toxic Chemicals.

The project also efficiently provided technical support to the MEE/FECO for policy gaps, data collection, and analysis. It created the Pesticide Digital Supervision and Management Platform

to register pesticides dealers and installed the Pests Automatic Monitoring System and the Field Microclimate Monitoring System.

Institutional stakeholders interviewed also pointed out, several times, the collaboration with the academic sector, which avoided unnecessary duplication of interventions.

There were inefficiencies observed. Collaboration with the private chemical industry was limited. There is the risk that the industry will develop chemical alternatives to endosulfan. Also, there was gender imbalance during the training of farmers.

Conclusions: The project has had a sustainable and effective impact on reducing environmental risks by completely eliminating endosulfan. It collaborated closely with ministries and contributed to developing an innovative regulatory system that controls the market of chemicals and poses strict limits to the residuals of pesticides in the food.

It also achieved its specific objective by strengthening national capacity to develop alternative, green, and sustainable tools. The biological control and alternative technology were proposed, tested, and they are now used in the cotton fields in China.

The level of satisfaction with the project expressed by the stakeholders interviewed during the TE was high. Stakeholders reported that the level of achievements was high with only minor issues. The project was able to accomplish many of the planned activities within the project's duration, which was 48 operational months. The 7-month extension did not require an extra disbursement (no additional financing was requested to finalize the remaining activities).

The reports indicated that the project was able to achieve its objective and outcomes without significant delay. Based on the review and assessment and considering the complex and articulate structure of this project and the difficulties posed by the COVID-19 restrictions, **the project can be considered completed with success**.

1.5 Synthesis of key lessons learned

1) *Modern training and capacity building:* This project trained and conducted capacity building for a large pool of people even though COVID-19 restrictions limited travel and social activities. In some cases, the project was able to train more people than planned. Such was the case, for example, of training policymakers (+167% of end target) and farmers (+250% of end target). It was possible to reach this ambitious goal by a) well-organized training activities, b) applying modern pedagogical educational tools, and c) using highly qualified consultants, teachers, and trainers.

2) *Efficient and effective coordination:* A strategy to promote the GEF additionalities (environment, policy, governance, etc.) is based on efficient and effective coordination among stakeholders, support from country and local offices, and the use of qualified consultants. This well-organized staff was the key to success against the COVID-19 outbreak. Instead of a full stop of the project, the staff moved forward and accomplished all project tasks.

3) *Replicability:* Component #3 of this project has presented and discussed a suitable replication programme for China. The specific terms of replicability have been presented in the ProDoc. GEF should consider replicating this project across the country with the modalities discussed in this document. The knowledge generated, the people trained, the positive impact to stakeholders are valuable resources that should be capitalized and used again. For this reason, future GEF projects should consider the human capital resources that this project has generated to be passed to other similar projects. This will save time, resources, and enhance the capacity of already well-trained people.

1.6 Recommendations and summary table

# Rec	TE Recommendation	Entity responsible	Time frame
A	Category A: Design		
A1	A Theory of Change (ToC) should be included in the design of new initiatives. A ToC supports the designers, the developers, and the evaluators to understand the complex architecture of the project. The team in charge of writing the project must prepare a detailed ToC.	UNDP China CO or project writer(s)	Not necessary for this project. It is necessary for future projects.
A2	The project's scope included the tobacco sector. However, after the survey investigation, it was found that tobacco producers do not use endosulfan. This problem should be spotted before project design and implementation. The recommendation is a feasibility study or a pre-analysis of the sectors.	PMU and UNDP CO	At the earliest or at the next project.
B	Category B: Promotion of environment and gender.		
B1	This project has a positive impact on the environment but the impact on climate change mitigation and adaptation is unclear. Recommendations are to estimate GHG emissions reduction and adopt a strategy to mitigate the impact of climate change on the project sites.	UNDP CO and PMU	At the earliest and before the end of the project.
B2	The gender issue is important for the development of modern Chinese society. For this reason, the project should take this topic seriously. The recommendation is to find solutions to enhance gender equality and women's empowerment within the project.	UNDP CO and PMU	At the earliest or at the next project.
C	Category C: Lessons and exit strategy		
C1	The project should prepare a well-written lesson learned report. This important document will be useful for the PMU and for similar projects in the country and abroad.	UNDP CO PMU	At the earliest and before the end of the project.

C2	The project should hold a workshop or prepare a document about a comprehensive exit strategy to ensure the long-time sustainability of results.	PMU and UNDP CO	At the earliest and before the end of the project.

2. Introduction

2.1 Evaluation purpose

The purpose of the Terminal Evaluation (TE) is to assess project results against project expectations and draw lessons that can improve the sustainability of benefits from this project and aid in the overall enhancement of UNDP/GEF programming in China. The TE also aims at promoting accountability and transparency and assesses the extent of project accomplishments.

2.2 Scope of the evaluation

The TE will evaluate the results according to the criteria established in the "Guidance for conducting terminal evaluation of UNDP-supported, GEF-financed projects". More specifically, the purpose of the TE report is to conduct an objective assessment of the status of phase-out of Endosulfan in China. The scope of this project is aimed to stop the utilization of endosulfan and replace it with biological control and alternative modern sustainable technologies. The methodology used and the type of data collected are extensively discussed in section 2.3 and 2.4. Section 2.6 discusses the limits of this assessment and the impact of the Covid-19 pandemic in the evaluation. It will involve all beneficiary actors as well as those responsible for the execution and implementation of the project indicated in the ProDoc and discussed further in this document.

Furthermore, the exercise covered the project's design, execution, and results, focusing on three categories: a) Project Design/Formulation, b) Project Implementation, and c) Project Results. The subcategories are as follows:

1. **Project Design/Formulation including the following subcategories:**

Analysis of Results Framework: Project logic and strategy, indicators (including cross-cutting issues); Assumptions and Risks; Lessons from other relevant projects incorporated into project design; Planned stakeholder participation; and Linkages between project and other interventions within the sector.

2. **Project Implementation including the following subcategories:**

Adaptive management (changes to the project design and project outputs during implementation); Actual stakeholder participation and partnership arrangements; Project Finance and Co-finance; Monitoring & Evaluation: Design at entry, implementation, and overall assessment; UNDP implementation/oversight and Implementing Partner execution, overall project implementation/execution, coordination, and operational issues; and Risk Management, including Social and Environmental Standards (Safeguards).

3. **Project Results and Impacts including the following subcategories:**

Progress toward objective and expected outcomes; Relevance; Effectiveness; Efficiency; Overall outcome; Sustainability (financial, socio-political, institutional framework and governance, environmental, and overall likelihood of sustainability); Country ownership; Gender equality and women's empowerment; Cross-cutting Issues; GEF Additionality; Catalytic/Replication Effect; and Progress to Impact.

2.3 Methodology

The methodology used for this TE is theory-based and makes use of a utilization-focused and participatory approach.

The *theory-based evaluation* focuses on analyzing a project's underlying logic and causal linkages[1]. Projects are built on assumptions on how and why they are supposed to achieve the agreed results through the selected strategy; this set of assumptions constitutes the 'program theory' or 'theory of change.' The evaluation will analyze the theory underpinning the project. In such a way, it will be possible to recognize that a multitude of factors and interactions influence a project's effectiveness and seek to identify those causal factors judged to be most critical to a project's overall success.

The *utilization-focused* approach is based on the principle that evaluations should be judged on their usefulness to their intended users. Therefore, they should be planned and conducted in ways that enhance the likely utilization of both the findings and recommendations to inform decisions[2].

The *participatory approach* follows a collaborative and participatory approach ensuring close engagement with key project stakeholders, including the Commissioning Unit (the UNDP Country Office), RTAs, Regional M&E Advisers, Country Office M&E Focal Points and Programme Officers, Government counterparts including the GEF Operational Focal Point (OFP), and other key stakeholders in China. In order to ensure good collaboration and participation of key stakeholders, the UNDP/GEF PMU provided their support for the preparation of the TE report.

2.4 Data Collection & Analysis

As planned in the inception report, the research design of the evaluation exercise has used the following primary and secondary data collection methods through (i) **Desk Review**, (ii) I**ndividual Interviews,** and (iii) **Group Interviews** as data collection tools.

Desk review has two main functions. Projects are based on assumptions about how and why the selected strategy should achieve the expected results. Therefore, the evaluation will verify the soundness and realism of this strategy that, in the case of UNDP/GEF projects, is visualized in the Progress Reports. From this perspective, the ProDoc and Progress Reports provide the elements that make up the strategy to be evaluated. The second function of the desk review is to provide the International Evaluator secondary data consolidated by the project staff, which will be triangulated with the primary data to formulate the evaluation findings.

Individual and group interviews will be the only tools to collect primary data. It uses a "purposeful sampling"[3] to identify stakeholders to be consulted through individual or group remote interviews. The "purposeful sampling" meets the needs of the TE. It involves identifying and selecting individuals or groups of individuals who are especially knowledgeable or experienced with a phenomenon of interest. Studying information-rich cases, that is, interviewing people who are well informed about the project and who have a link with it, generates knowledge and deep understanding instead of empirical generalizations, which are typical of statistically representative probability sampling.

Different methodological approaches to data analysis were applied to identify key findings from the collected data and to draw conclusions, identify lessons learned, and make

[1] Rossi, P., Freeman, H. & Hofmann, G., 1999. Evaluation. A Systematic Approach. 6th ed. Thousand Oaks: Sage.
[2] Patton, M. Q., 2008. Utilization-focused evaluation. 4th ed. Thousand Oaks: Sage.
[3] "The logic and power of purposeful sampling lie in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry, thus the term purposeful sampling. Studying information-rich cases yields insights and in-depth understanding rather than empirical generalizations." Patton MQ. Qualitative research and evaluation methods. 3rd Sage Publications; Thousand Oaks, CA: 2002.

recommendations. These approaches included: contribution analysis and trend analysis to understand how activities and outputs contribute to common objectives over time and comparative analysis. The TE Evaluation Matrix is included in Annex 4.

2.5 Ethics

The evaluation was conducted in accordance with the principles outlined in the United Nations Evaluation Group (UNEG) “Ethical Guidelines for Evaluations”.

2.6 Limitations to the evaluation

The entire evaluation exercise was conducted during the COVID-19 pandemic in accordance with what was planned in the inception report.

The International Evaluator and the National Expert met all the actors foreseen in the Inception Report and covered all project activities satisfactorily.

The occurrence of the COVID-19 pandemic and the need to conduct the evaluation remotely has three main implications for the development of the evaluation process:

1. It restricts the data collection tools for primary data to individual and group interviews. Field visits to project sites and focus group discussions with project beneficiaries were not feasible for the IE and NE. Based on the guidance for TE during COVID-19 and taking account of the strict domestic control measures, international travel was not allowed. Thus, interviews were undertaken remotely by telephone or online (Skype, Zoom, or WhatsApp). The international evaluator (IE) worked remotely with National Evaluator (NE) support. The IE trained the NE on conducting remote video and phone interviews, collecting, and storing data.

2. The effect of remote communication on the perception of the questions (by the interviewees) and the responses (by the IE and NE) is not estimable. However, the contribution of the national consultant who speaks Chinese and can interact with the people interviewed will mitigate potential communication problems.

3. Field visits to project sites were not possible.

2.7 Structure of the TE report

The TE report consists of three core sections apart from above sections:

i) Project Description and Background Context

The section briefly describes the project and the context in which it was designed and implemented.

ii) Findings

This section provides answers to the three categories of *Project Design/Formulation*, *Project Implementation* and *Project Results and Impacts*.

iii) Main Finding, Conclusions, Recommendations, and Lessons Learned

The section includes the main findings, evidence-based conclusions, recommendations, and lessons learned.

3. Project Description

3.1 Project start, duration, and additional information

Project start, **duration, and relevant milestones:** Phase-out of Endosulfan in China project started May 9th, 2017 and will end December 9th, 2021. The expected duration of the project, as per the ProDoc, was 48 months. Extended by 7 months, the project will have a total duration of 55 months. Specific project cycle management (PCM) milestones are:

- Inception Workshop: September 11, 2017
- Project Extension Approval Date: Nov 9, 2020
- Expected Operational Closure Date: Dec 9, 2021
- Expected Financial Closure Date: Jun 9, 2022

Development context: This environmental project wants to phase out one of the most dangerous chemicals extensively used in agriculture. This project has a positive impact not only for the farmers and their families but also for the entire society. The main environmental change since the beginning of project implementation is the phase-out of Endosulfan in China. Section 3.2 discusses the development context in detail.

Problems that the project sought to address: The project objectives are articulated and linked with the Chinese government's strategies and priorities as well as the GEF and UNDP priorities and programming as it is discussed in the ProDoc and in section 3.3 of this document. In addition, this document discusses the project and how it is linked to relevant Sustainable Development Goals (SDG).

Immediate and development objectives of the project are discussed extensively in section 3.4 and the **expected results** in section 3.5

3.2 Development context

The project Phase-out of Endosulfan in China was financed by the Global Environment Facility (GEF) and other donors and was nationally implemented by the Foreign Environmental Cooperation Center (FECO) of the Ministry of Ecology and Environment (MEE). The United Nations Development Programme (UNDP) was the GEF Implementing Agency (IA) for this project. The project was implemented following UNDP's national implementation modality (NIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of China, and the Country Programme Action Plan (CPAP).

The extensive use of endosulfan was a significant problem in China. The intensive application of this pesticide in cotton and tobacco farming led to a series of adverse economic, environmental, and social consequences. It increased the degradation of the environment, polluting the soil, water and increasing the risk of poisoning farmers and ultimately the health of the whole society.

The main objective of this project was to eliminate the usage of endosulfan by adopting biological control and Integrated Pest Management (IPM) system that were friendly to the environment and human beings. The IPM features had a comprehensive benefit, not only reducing chemical usage, but also promoting ecological crop management. Thus, this modern and sustainable crop production reduces the consumption of soil, water, and chemical fertilizers.

As noted in the Project Document "*The Stockholm Convention on Persistent Organic Pollutants was adopted by the Conference on 22 May, 2001 in Stockholm, Sweden. The objective of the Stockholm Convention is to protect human health and the environment from persistent organic pollutants. " … "the Government of China signed the Stockholm Convention on 23 May 2001 and it became effective in China on 11 November 2004. Starting from 26 March 2014, production, distribution, use, import and export of endosulfan are forbidden with some minor exceptions*".

The central idea of the Phase-out of Endosulfan in China project was aligned with the Stockholm Convention. Tobacco and cotton productions should be promoted, but not at the expense of the environment and putting human beings at risk. IPM and biological control practices were identified as the main tools to align agriculture and pest control practices to this idea.

Furthermore, as noted in the Project Document, "*This project is highly consistent with national priorities, in particular toward reduction in pesticide use and giving priority to non‐chemical measures including biological control. During the past 20 years, the Ministry of Agriculture issued 5 decrees, 38 highly toxic pesticides including several kinds of POPs have been banned and their registrations stopped, and 19 pesticides were prohibited to be used on fruits, vegetables, tea, and Chinese medicine crops*".

Thus, as noted in the Project Document, this project is perfectly aligned and "fully *consistent with the GEF‐6 Chemicals and Waste Focal Area Strategy, in support of Strategy Objective 1. Develop the enabling conditions, tools, and environment to manage harmful chemicals and wastes" … "as well as supporting Strategy Objective 2 Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies*".

However, it is important to highlight that the COVID-19 pandemic has been hitting China during the project's implementation period. More precisely, the worldwide COVID-19 pandemic hit China starting from February/March 2020 and it is ongoing at the time of this report's preparation. The pandemic has delayed or forced the cancellation of planned activities limited the site visits and face-to-face meetings.

3.3 Problems that the project sought to address

As noted by the Stockholm Convention and UNEP, the protection of "*human health and the environment through measures which will reduce and discharges of persistent organic pollutants* are essential for the sustainable development of society" . The paradigm shift of increasing of cotton and tobacco productions should not be at the expense of the environment and human health.

In doing so, the project intended to promote sustainable economic and social development and, as pointed out in the Project Document, "*use biological control and alternative technologies selected for substituting Endosulfan*" and ensuring that "*they are the only feasible approach for replacing Endosulfan completely"* in tobacco and cotton fields.

The Project Document identified the following root causes of endosulfan use, which the project would attempt to address:

> **Technical**: During the past two decades, Cotton Integrated Pest Management (IPM) strategies were developed and implemented along with the adoption of transgenic Bt cotton. The situation was similar for the Tobacco IPM control that strictly followed a unique top-down approach. Even with preliminary successes in implementing IPM in cotton and tobacco cultivation, the implementation and scale-up of IPM, especially biological control in cotton and tobacco, faced great challenges. For many reasons, the IPM failed.
>
> **Regulatory**: Only in 2008, the Ministry of Agriculture issued new regulations to enhance pesticide management. In particular, these new regulations aimed at regulating pesticide

names, label requirements, and registration procedures. Government officials, pesticide dealers, farmers, and pesticide manufacturers are aware of these new regulations, but more should be done to implement them in practice.

Governance: In the mid‑1990s the Government prepared the first set of policy for the control of highly toxic pesticides including POPs pesticides. However, only in 2009 the concept of plant protection evolved, and a new set of policy were prepared. The “Public Plant Protection, Green Plant Protection” took over the old principles and promoted IPM with the new guidelines for the Public Plant Protection.

Socio-economic: Farmers and specialized planting corps have gotten use to and accepted endosulfan. It was highly accepted by producers, dealers, and farmers for cotton bollworm, aphid control, and cotton pest. Lack of education strategies, inadequate training of farmers, ineffective capacity building, and lack of valid alternatives were the main socioeconomic barriers to the full development of a better cotton and tobacco pest control management system.

3.4 Immediate and development objectives of the project

The Phase-out of Endosulfan in China project aligned with the GEF-6 Chemicals and Waste (CW) Focal Area Strategy aiming at the following global environmental benefits:

CW1 Strategy Objective: Develop the enabling conditions, tools, and environment for the sound management of harmful chemicals and wastes.

- Program 1: Develop and demonstrate new tools and economic approaches for managing harmful chemicals and waste in a sound manner.

- Program 2: Support enabling activities and promote their integration into national budgets and planning processes, national and sector policies and actions and global monitoring.

CW 2 Strategy Objective: Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies/substances.

- Program 3: Reduction and elimination of POPs.

Furthermore, the Phase-out of Endosulfan is an integral part of China’s overall efforts and actions to address the GEF‑6 Chemicals and Waste Focal Area Strategy. It is developed jointly with the GEF and key implementing agencies and it represents the only project in China directed to the phase-out of endosulfan.

The Phase-out of Endosulfan in China intended to contribute toward Agenda 2030, specifically to the Sustainable Development Goal (SDG) n° 12 “Ensure sustainable consumption and production patterns” and related indicators:

- 12.4 “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 in order to minimize their adverse impacts on human health and the environment".

3.5 Expected results

The project’s objective was formulated as the “phase-out of endosulfan by biological control and alternative technologies in cotton pest management in China”.

Thus, the project's objective was achieved through demonstration of biological control and alternative technologies in pilot locations that led to the subsequent complete phase‐out of endosulfan in China.

The project's results were achieved through the development and implementation of four major components with several outcomes:

- Component # 1: "Institutional strengthening and capacity building".
  - Outcome # 1.1: "Capacity of policymakers, national and local project teams and key stakeholders strengthened to facilitate endosulfan phase out".
  - Outcome # 1.2: "Policy development to promote and facilitate the phase-out of endosulfan".
- Component # 2: "Development of integrated technical models of biological control and alternative technologies development".
  - Outcome # 2.1: "Production and consumption of 2,850 tons of endosulfan reduced through introduction and field demonstration of biological control and alternative technologies".
  - Outcome # 2.2: "Three hundred extension agents and 12,000 representative farmers trained on the use of biological control and alternative technologies to replace endosulfan usage".
  - Outcome # 2.3: "Pest monitoring systems developed to better anticipate pest impacts, improve efficiency on information dissemination to better support farmers to use new alternative technologies".
- Component # 3: "Development of a national replication programme".
  - Outcome # 3.1: "National replication programme and work plan developed and disseminated".
- Component # 4: "Project monitoring and evaluation".
  - Outcome # 4.1: "Effective monitoring and evaluation; knowledge sharing and information dissemination ensure".

The project was built on existing structures put in place by the MEE/FECO to coordinate with the different ministries, institutions, and agencies relevant in the context of elimination of POPs and endosulfan. The four components correspond to four levels of intervention:

- Strengthen institutional and management capacities to ensure efficient and effective project management;
- Develop and demonstrate integrated technical models of biological control and alternative technologies;
- Preparation, testing, implementation, and scale-up of a national replication programme and work plan;
- Finally, support the monitoring and evaluation of the project and dissemination of lessons learned.

3.6 Main stakeholders

The ProDoc identified the following stakeholders:

Stakeholder	Role and/or relationship with

Ministry of Ecology and Environment (MEE)	As the administrative authority on environmental protection, is designated by the State Council as the core agency for coordination of all POPs related activates in China and the focal point for the implementation of the POPs Convention in China. MEE is the national implementing agency for this project. Its responsibilities will include (1) the project in general and ensure its successful implementation and quality; (2) provide political direction and guidance to FECO; (3) coordination with stakeholders, including GEF, donors, IAs, and relevant domestic ministries and agencies, including the member commissions and ministries of the NCG; (4) development/issuance/implementation of national policy and standards to regulate environmental performance of the IPM management system; (5) identification of alternative technology requirements; (6) qualification and permitting of IPM demonstration; (7) supervision of the enforcement of environmental policies and performance requirements applied to IPM management; (8) supervision of the disclosure of environmental information; and (9) supervision of the day-to-day management of the project.
National Steering Group (NSG)	An inter-ministerial steering group consists of NDRC, MEE, MIIT, MOC, MOF and STAGAC to provide overall guidance and coordination for the implementation of relevant activities and legislative measures, to ensure the committed inputs and contributions are available as needed. The NSG will meet twice a year or as needed.
Foreign Environmental Cooperation Center (FECO)	FECO is an interdepartmental coordination unit of MEE and acts as the secretariat of the NSG. It is responsible for day-to-today compliance with the Stockholm Convention in China. FECO‘s responsibilities include: (1) provision of technical support for international negotiations and policy studies on the Stockholm Convention, (2) provision of support to the development and implementation of corresponding policy and regulations, as well as coordination of key governmental stakeholders, (3) mobilization of co-financing for the project from bilateral and domestic governmental and private sources, (4) collecting data and information, compiling reports, organizing training, and publishing information. In this project, FECO will represent MEE to provide political guidance on the implementation of this project, coordinate with various stakeholders, with post-TCG and other appropriate approaches, and to ensure that the project produces the results specified in the project document to the required standard of quality and within the specified constraints of time and cost.
Ministry of Finance (MOF)	The MOF assumes the responsibility for negotiation and consultation with regard to funding from foreign governments and international institutions on behalf of the Government of China; supervises the implementation of guidelines, policies, laws and regulations on finance and taxation; examines and reflects material problems in government revenue and expenditure management; and proposes policy suggestions on strengthening the financial administration. MOF has the overall responsibility for national the GEF programme. As the GEF Operational Focal Point for China, MOF reviews, endorses and supervises preparation and implementation of GEF funded projects and supervises the use of GEF grants.

Ministry of Agriculture and Rural Affairs (MARA)	MARA is in charge of agriculture and rural economic development by developing and implementing agriculture strategies, policies, regulations and guidelines etc., and is also responsible for pest control and technology promotion, including IPM technology and other new technologies by demonstrating the technologies and training the farmers.
Post-technical Coordination Group Meeting (Post-TCG)	During NIP development, FECO established a coordination mechanism for stakeholder involvement called TCG. Relevant domestic stakeholders, international IAs and EAs, as well as potential bilateral donors, private sectors, NGOs etc. would be informed about the progress and further needs for Convention implementation, invited to advise on its design, and encouraged to be involved and co-fund some of the activities. They would be briefed on the implementation progress and impacts at the TCG meetings. FECO will continue to convene TCG meetings at an interval of around once per year. The coordination on the implementation of this project will be one of the important components of the TCG meetings.
National Project Team (NPT)	The project team, composed of staff from MEE and possibly staff from other ministries with respective responsibilities on IPM management and legislative activities, is administratively managed by FECO/MEE. FECO is a professional office with more than 15 years of experience in implementing international environmental cooperation programs and for the follow‐up implementation of international environmental conventions. In general, the team is responsible for the day‐to‐day management, coordination and implementation of the proposed project under the guidance of FECO and with the support of the consultants recruited. Its responsibilities include (1) manage project procurement and financial resource in accordance with UNDP's procedures, prepare and amend as necessary the Annual Work Plan and relevant progress and financial report; (2) organize and convene project coordination and review meetings, including the Annual Review Meeting and prepare Project Review Report; (3) prepare TORs under this project; (4) select and contract with individual consultants and sub‐contractors, supervise the implementation of contractors to ensure the smooth implementation of the contracts; (5) provide guidance to the local Project Management Offices (LPMOs); and (6) organize the inspections and verifications related to the project achievement.
Expert Team	Consultants will be engaged to provide technical support for the implementation of the project. (i) international expert(s) will be recruited as needed to introduce international experience on IPM management and to provide overall technical direction and guidance for the application of alternative technology demonstration; and (ii) national technical experts with experience and knowledge in pest management and IPM technology demonstration will be recruited to work with the international experts and assist FECO and LPMOs for the demonstration activities.

3.7 Theory of Change

The Theory of Change (ToC) provides a basis for evaluating the project resources, activities, and results. The TE assesses description of the project's outputs, outcomes, activities, cross-cutting issues, short- and long-term environmental impacts, causal pathways for short- and long-term impacts as well as implicit and explicit assumptions.

There was no explicit ToC developed for the project, and it was not included in the project design. It is not possible to evaluate the diagram of the ToC against the activities, outputs, and outcomes of the project because the ToC has never been created nor discussed.

3.8 Total resources

The overall total financial resources available for this project was USD 9,900,000, of which USD 1,980,000 was from the GEF Trust Fund or LDCF or SCCF or other vertical funds, and co-financing USD 7,920,000. The co-financing was provided by UNDP USD 100,000, Government USD 4,600,000, and Cotton Growers in Xinjiang Uygur Autonomous Region USD 3,220,000.

3.9 Key partners involved in the project

The key partners in this project are the UNDP, which is the GEF Implementing Agency for the project, and the Foreign Environmental Cooperation Center (FECO) of the Ministry of Ecology and Environment of China (MEE). MEE has designated FECO as the entity implementing activities relating to fulfilling China's obligations under the multilateral environmental convention, responsible for the daily execution and coordination of the project.

In addition, an important project partner is the National Steering Group (NSG), an inter‑ministerial steering group to provide overall guidance and coordination for the implementation of relevant activities and legislative measures to ensure the committed inputs and contributions are available as needed: The Ministry of Finance (MOF), the Ministry of Agriculture and Rural Affairs (MARA), Post‑technical Coordination Group Meeting (Post‑TCG), and the National Project Team (NPT).

Furthermore, during project implementation, this project has coordinated closely with the Global Endosulfan program being developed by UNEP and FAO to exchange experience and replicate project results that will contribute to addressing the global endosulfan issues.

4. Findings

4.1 Project Design/Formulation

4.1.1 Analysis of Results Framework: project logic and strategy, indicators

The Project Document was prepared based on the outcomes of the consultations with relevant key private stakeholders, including various ministries, their regional departments, local authorities, civil society organizations, and private sector enterprises. They were consulted and engaged during the project design and formulation phases to ensure the alignment of the project with national priorities:

- Activation of the national strategy for the reduction of POPs.
- Enforce the pesticide management policy framework.
- Design project activities to end the use of endosulfan consumption at national, regional, and local levels.
- Plan capacity building, policy, and legislative actions to implement the use of alternative technology, in particular biological control technologies.
- Identify demo sites for cotton Integrated Pest Management control.
- Planning a national replication programme.

The project design included features related to:

- Development of regulatory and planning tools;
- Support to direct implementation; and
- Awareness campaign, training, capacity building, and dissemination of lessons learned and good practices.

The expected results are coherently connected with the components of this project which, are logically linked with the achievements of the project outcomes. Thus, the activities are sequenced to achieving the expected results.

The hypothesis of this project is well articulated in the ProDoc. Removing and/or mitigating the root cause of endosulfan use in cotton and tobacco fields positively impacts the environment and human health. In particular, removing endosulfan from the market and replacing it with biological control technology leads to an amelioration of cotton and tobacco productions, the ecosystems, and the quality of farmers' life.

The overall strategy underpinning the project was correct and rational. The components, outcomes, and activities were logically related to achieving the expected results and minimizing costs. The ToC has not been designed during the project formulation and, for this reason, it was not possible to assess the Results Framework against the ToC. However, the Result Framework captured the ambitions of this project, and the results are aligned with the expectation generated.

The Result Framework has not been revised before because the MTR has never been conducted. However, it is evident from an analysis of the baseline that the topic of reduction/control of chemicals is not new in China. The concept of eliminating/reducing chemicals in the country and improving the environment is one of the priorities for many stakeholders. Policy- and decision-makers have a medium level of awareness of the importance of reducing chemicals in agriculture.

The indicators have not been revised before because the MTR has never been conducted. Indicators are SMART (Specific, Measurable, Attributable, Relevant, Time-bound/Trackable/Targeted), and after the analysis of the 2021 PIR and other relevant documents, the indicators are relevant for this project. However, the Result Framework has marginally involved the chemical public and private sectors, and consequently, the indicators do not reflect the chemical industry, chemical distributors, and retailers. Thus, this TE exercise highlights that the Result Framework did not fully capture any broader development impacts as gender equality and women's empowerment.

4.1.2 Assumptions and Risks

In the project's assumptions and risks are elements that are out of the sphere of control of the PMU. Often, mitigation measures accompany assumptions and risks. In other words, it includes the actions that the PMU can do to mitigate their negative effects on project implementation in case an assumption identified during the project identification phase does not hold true or a risk materializes[4].

The ProDoc project includes a section of "project risks" with four important elements of risks and mitigation measures. In the Results Framework there is a column about "assumptions" that it splatted throughout project objectives and outcomes. The Monitoring Plan includes both assumptions and risks. Due to the format of the Results Framework, the assumptions are not clearly linked with the risks, making it difficult to evaluate the expected results.

[4] GEF. 2019.Theory of Change Primer. GEF/STAP/C.57/Inf.04 and UNDP, 2009. Handbook on Planning, Monitoring and Evaluating for Development Results.

Finally, an important, obviously unforeseen risk was COVID-19. The pandemic has impacted all project sites, and it has caused a delay in the implementation of the Results Framework activities since the beginning of 2019.

4.1.3 Lessons from other relevant projects

It is not a novelty that China has significant experience in projects that aim to reduce or eliminate chemical and toxic materials. For example, GEF has already financed similar projects[5] in China in this area. China has also received financial support from other international donors, including UNDP and other organizations, for the same scope.

Due to the high number of projects for the reduction/elimination of POPs, national and regional public and private entities have also gained considerable experience. MEE, FECO, MARA, NPT, etc. have well-trained technicians in this field. All these stakeholders were also involved in this project. Their experiences and lessons learned transferred to this project.

It is of particular relevance the lesson learned from the successful implementation of the UNDP‐supported, GEF‐funded POPs project "Improvement of DDT‐based Production of Dicofol and Introduction of Alternative Technologies including IPM for Leaf Mites Control in China". This project closed the non‐closed system dicofol production using DDT as an intermediate and phased out the usage of DDT‐based dicofol for leaf mites control in cotton, apple, and citrus fields through demonstration and subsequent application of alternative technologies, including IPM based technology.

As such, MEE/FECO and MOA have accumulated significant experience and skills in implementing this type of project; such experience contributed to smooth project implementation. Thus, these lessons learned of IPM, TOT, and FFS models were incorporated across the Phase-out of Endosulfan in China project, particularly in Component # 1: Institutional Strengthening and capacity building.

4.1.4 Planned stakeholder participation

The Project Document has clearly presented, discussed, and planned the involvement of stakeholders. Several important stakeholders took part in project implementation confirmed through various consultation meetings during project formulation. Some of them were the major active participants in all the project activities as well as the directly targeted groups and beneficiaries of the project achievements. The table below includes their roles, responsibilities, and strategy to ensure effective engagement of these key stakeholders.

Private/public stakeholder	Role in the engagement
The Government of Shawan County, Xinjiang Uygur Autonomous Region and Agricultural Bureau of Xinjiang Production and Construction Corps	In each demonstration location, these entities were in the front line of action and were responsible for coordination, guidance, and undertake close interactions and liaison with cotton growers in their respective areas for the implementation of the activities locally. Activities undertaken included: (1) organization of IPM implementation; (2) supervision of local pesticides distributions and applications; (3) organization of joint inspections to ensure the effective implementation of related regulations; and (4) collection of information needed for the ProDoc, M&E, and preparation of the required progress reports.

[5] https://www.thegef.org/projects-operations/projects/9046

Farmers in the Project Implementation Regions	Cotton growers in the pilot areas and the Farmer Associations to which they belong were actively engaged in the field demonstration and the FFS training sessions on biological control and alternative technologies as active players in the demonstration activities. They were responsible for (1) implementing biological control and alternative technologies to substitute endosulfan IPM implementation; (2) assisting the LPMO to collect field information needed for M&E, and (3) preparing the ProDoc and project progress reports.
Private Sector of Producing and Marketing Biological Control Agencies	The private sector was engaged with the field implementation of biological control and alternative technologies on cotton to substitute endosulfan with environmentally friendly solutions. Also, it was used to collect information needed for the ProdDoc, M&E, and preparation of the required progress project reports on the implementation of biological control and alternative technologies in the fields.

The participation of stakeholders during the implementation phase adhered substantially to the ProDoc and was confirmed during interviews and by the progress reports.

4.1.5 Linkages between project and other interventions within the sector

The linkage between the project and the intervention areas were not explicitly highlighted in the Project Document. However, it is sufficiently clear from the Results Framework that are mostly embedded in the project's outcomes. The importance of the links between the project and the areas of interventions outside the chemical/POPs sector should also be mentioned. The improvement of the environment, amelioration of the ecosystems, reduction of contamination of water, soil, air, improvement of the health conditions of farmers as well as the overall benefit for the entire society, domestic and international cotton markets are some of the sectors that benefited from this project. Finally, the evaluator wants to point out the importance of the interactions and synergies that can be created before, during and after the project ends with similar initiatives in the same context. This point was further discussed with the stakeholders and the PMU during the interviews and meetings.

4.1.6 Gender responsiveness of project design

A gender strategy was not well articulated in the ProDoc. The strategy focused on the inclusion and participation of both women and men in activities related to all project outcomes. No specific activities aimed to promote gender equity or any change in gender roles. The ProDoc stressed the importance of committing to gender equality and women's empowerment not only as human rights, but also because they are a pathway to achieving the project's goals. Therefore, the ProDoc envisaged an even participation of women and men in the decision-making process to ensure the project's success.

During implementation, the ProDoc highlighted the importance of taking care of the different needs of different gender groups and addressing their priority concerns, particularly those of the vulnerable groups, including female farmers, villagers, and the poor, to strengthen capacity and benefit from the project. Furthermore, the project proposes introducing consultation‐based multi‐stakeholder participation to ensure all gender groups' access in the related training and capacity-building activities.

The gender marker of the project is 1. The environmental and social screening annexed to the ProdDoc stated clearly that: "The project ensures equal access and participation of female farmers in the demonstration and related activities of training, capacity building, and empower

their decision - making role. In addition, the project raises awareness and emphasizes the importance of gender empowerment with relevant stakeholders, which contributes to the implementation of gender mainstreaming.

The evaluation exercise concurs with the score 1 as Gender Marker of the design, i.e. contributes to gender equality in a limited way[6].

4.1.7 Social and Environmental Safeguards

The Social and Environmental Screening Procedure (SESP) included as an annex in the ProDoc has identified two low risks:

- Risk #1. Release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts.
- Risk #2. Significant consumption of raw materials, energy, and/or water.

The goal of this project is the complete elimination of Endosulfan in China. However, if the goal is not fully achieved, there is a possibility that the incomplete elimination of endosulfan will continue releasing contamination to the environment due to perpetual farming habits.

To mitigate risk #1, select biological control and alternative non-chemical technologies, carefully considering social, economic, and environmental benefits. In addition, capacity building and FFS can be designed to train not only farmers but also decision-makers and extension agencies to ensure effective acceptance and application of non-chemical technologies.

To mitigate risk #2, the excessive consumption of resources, more ecologically sound crop management practices can be developed to reduce water consumption and fertilizers. In this connection, the introduction of IPM in the cotton sector is a very effective mitigation measure to control the mitigate risk #2 of consuming raw materials, energy, and water.

4.2 Project Implementation

4.2.1 Adaptive management

During the implementation of the project, the PMU, stakeholders, and partners followed the Results Framework strictly. The project did not diverge from the original plans agreed in the ProDoc. Mitigation tools, activities, and actions corrected minor changes. These minor changes are well reported, mitigated, and justified in the annual PIR reports.

One major change caused the extension of the duration of the project. The disease outbreak caused by the spread of the COVID-19 virus has impacted the project. This external factor, which the Project Board could not predict, has affected the project. Concerning the impact of COVID-19, the Board has written in the PIR 2020 "*The project has been severely impacted by the COVID-19 pandemic, which disrupted the global supply chains, has frozen travel, and deployed strict social distancing safeguards in the country*".

Despite the delays caused by the pandemic, which has caused complications with the study tour, on-site training, seminars, and activities on the fields the "*cumulative progress of activities implemented before the COVID-19 pandemic shows that the project was largely on track in its implementation since many outcomes and outputs were completed*". The

[6] file:///C:/Users/Flavio%20Forabosco/Downloads/Gender_Thematic_Evaluation_2015.pdf

consequence was the request by the Project Board of a one-time project extension. The extension was granted to the project.

4.2.2 Actual stakeholder participation and partnership arrangements

The Phase-out of Endosulfan project in China was conducted in close collaboration with all its players. Particularly important was the contribution of institutional entities such as the MARA, MEE, FECO, MOF and UNDP for their practical experience in similar projects across the country and the coordination groups such as the NSC and TGC because they served as sharing points for ideas and supervision of the overall project.

A collaborative and participatory approach was the primary condition for the involvement of stakeholders and the successful implementation of the project. As mentioned in section 4.1.4, the project has extensively consulted with key stakeholders during the project development phase. During the implementation phase, the representatives of the ministries, the Project Board, and entities took active action. They met annually to review the implementation process, provide guidance, assistance, and support to solve any practical issues during the implementation phase.

The private sector, the farmers, and other players such as the technicians, experts, and the research/academy were involved since the beginning of the project and took an active part during the training, practical demonstration on the field, data collection, identification of new strategies, and data analysis. With their hard work, despite the complication brought into the project by the pandemic, they contributed significantly to the project's success.

The partnerships with the chemical industries, distributors, and retailers, appear weak and could have been strengthened. Nevertheless, the project has attempted to keep them involved since the beginning of the project design and even during the project implementation. In the project design, the risk "*that endosulfan production and marketing industries are not willing to be involved in this projec*t" was considered and mitigated. To a certain extent, the mitigation tools succeed because the distributors and retailers accepted involvement in the project. For example, they actively participated during the surveys and showed interest in alternative technology. On the other hand, the chemical industry did not want to participate actively, most likely for economical reasons.

The gender component has not been well developed. The Gender Mark score of 1 indicated some limits in the gender dimension, such as gender action plan, gender responsiveness, and gender participation. Sections 4.3.9 and 4.1.6 discussed in more detail the gender issues.

4.2.3 Project Finance and Co-finance

Table 1. Project Budget and Expenditures (US$)

Component	GEF Budget approved	Budget per year					Total expenditures	Difference
		2017	*2018*	*2019*	*2020*	*2021*		
Comp. #1	500,000	18726.46	1,005.98	41,342.83	212,820.82	65,726.40	339,622.49	160,378
Comp. #2	1,000,000	22653.01	363,697.02	315,759.49	241,274.66	18,557.60	961,941.78	38,058
Comp. #3	150,000				65,799.43	20,679.93	86,479.36	63,521
Comp. #4	150,000	9264.92	1,856.37	1,649.62	3,694.94	9,009.84	25,475.69	124,524
Management	180,000	849.33	4,522.84	51,322.42	100,229.95	152.86	157,077.40	22,923
Exchange gain/loss		-2180.1	9431.57	5106.28	-15877.05	-4660.56	-8179.86	
Total	1,980,000	49,313.62	380,513.78	415,180.64	607,942.75	109,466.07	1,562,416.86	**409,403**

The difference in USD 409,403 is mostly caused by unregistered expenditures. At the end of the project the margin will be much smaller.

Table 2. Co-financing of Project Partner (US$)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount ($)
Recipient Country Government	MEE	Cash	Investment Mobilized	**200,000**
Recipient Country Government	MEE	In-kind	Recurrent Expenditure	**800,000**
Recipient Country Government	The Government of Xinjiang Uygur Autonomous Region The Government of Shawan County	Cash	Investment Mobilized	**360,000**
Recipient Country Government	The Government of Xinjiang Uygur Autonomous Region The Government of Shawan County	In-kind	Recurrent Expenditure	**1,440,000**
Other	The Government of Xinjiang Uygur Autonomous Region Cotton growers	Cash	Investment Mobilized	**322,000**
Other	The Government of Xinjiang Uygur Autonomous Region Cotton growers	In-kind	Recurrent Expenditure	**1,288,000**
Other	Xinjiang Production & Construction Corps Agricultural Bureau of Xinjiang Production & Construction Corps	Cash	Investment Mobilized	**360,000**
Other	Xinjiang Production & Construction Corps Agricultural Bureau of Xinjiang Production & Construction Corps	In-kind	Recurrent Expenditure	**1,440,000**
Other	Xinjiang Production & Construction Corps Cotton growers	Cash	Investment Mobilized	**322,000**
Other	Xinjiang Production & Construction Corps Cotton growers	In-kind	Recurrent Expenditure	**1,288,000**
Other	UNDP	In-kind	Recurrent Expenditure	**100,000**
Total Co-financing				**7,920,000**

4.2.4 Monitoring & Evaluation: design at entry, implementation, and overall assessment of M&E

M&E: Design at entry:

The Monitoring and Evaluation Plan described the monitoring framework as per the UNDP and GEF requirements of the project.

- It included a set of important M&E activities, such as the Project Inception Workshop and Project Inception Report. During the workshop important M&E activities necessary to support project-level adaptive management were agreed upon and are collected into the final Inception Report. The report describes the exact role of project target groups and other stakeholders including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The involvement of GEF

Operational Focal Point ensured consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. It should also be pointed out that the workshop minutes and photos were available for the project's duration on the net for all members, participants, and the entities involved in the project.

- The project, at the entry point, the project has constantly and effectively informed the GEF Operational Focal Point of its progress through physical and online meetings, and documents shared such as the annual GEF Project Implementation Report (PIR) and other useful documents.
- The project has not planned a Mid-Term Evaluation, and an early check of the indicators has not been done. However, indicators were presented and were SMART.
- The M&A has highlighted that the lessons learned and good management practices were not well articulated. Further information is available in sections 5.3 and 5.4.
- Project Board meetings were organized and planned, but due to Covid-19 restrictions face-to-face meetings were discouraged as was the Terminal Evaluation mission of the IE in China.
- Furthermore, at the entry point, the M&E has of the responsibility of other players such as the National Project Team, Project Board, the UNDP Country Office, and the partners of the project. In addition, the UNDP-GEF Unit was responsible for M&E and implementation quality assurance with further support provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate..

The documents included an indicative M&E budget that was equal to 150.000 USD. It was circa 7.5% of the total GEF fundings allocation for this project, which is adequate to allow proper M&E. In 2020, the financial audit conducted an overall investigation of the expenditure, including the M&E costs, and it has approved them. The overall M&E design at entry was well articulated. Based on the above, the Monitoring & Evaluation **design entry** is rated:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

M&E implementation: The implementation of the M&E was sufficiently budgeted and has been conducted correctly with some minor implementation issues. The M&E implementation activities did not face any important challenges. Even during the pandemic, the PMU was very much involved on a daily basis in the M&E implementation with the people directly involved in the project. Some delays were expected and well justified by the impossibility of traveling and conducting face-to-face M&E meetings. The number of staff members who spent most of their time in the project areas has fluctuated, but the project sites were always controlled.

Furthermore, it should be noted that:

- M&E activities were conducted accordingly to UNDP and GEF guidelines and procedures.
- During the implementation of the project, the UNDP/PMU was actively involved in monitoring and reviewing the quarterly progress reports, project work plans, and financial reports.
- Also, there is a good number of monitoring and review exercises conducted by the UNDP with the contribution of the Project Board/PMU, including preparation of PIRs, APRs, and organizing of meetings.

- The national and international consultants involved in the M&E were contracted according to the established Rules and Regulations of the UN for the TE. All were very well qualified for the assignment.
- The unexpected and unpredictable COVID-19 outbreak has delayed some M&E activities, but the UNDP/PMU has mitigated the problem caused by COVID-19 on the project and conducted all M&E with minor delays..

Some minor key M&E activities were not properly implemented, such as:

- The MTR is not mandatory for this type of project (< US$2 million GEF-financed projects); however, the MTR recommendations can improve the overall project outcomes long before it ends.
- The number of meetings organized by the Steering Committee was somehow limited. Sensitive issues such as gender and women's empowerment did require further attention from the SC. The gender equality and woman empowerment need further attention by the project as pointed out in some sections of this document.
- However, the PIRs pointed out the importance of further supporting gender equality and women's empowerment, but this M&A implementation exercise only partially met the expected goal.

Based on the above, the Monitoring & Evaluation **implementation** is rated:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
	S				

Based on the above and the interviews conducted by the evaluator, the **overall assessment** of Monitoring & Evaluation is rated:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

4.2.5 UNDP implementation/oversight, implementing partner execution, and overall project implementation/execution, coordination and operational issues

According to the GEF Guidelines, the project was implemented by the UNDP Implementing Agency and executed by the FECO Executing Agency, which was responsible for the day-to-day execution of activities. Thus, GEF's purpose is oversight the execution of the project..

The roles and responsibilities of UNDP Implementing Agency as well as the national and local project partners were clearly indicated in the ProDoc, well-identified and tailored on their specific technical capacities and in line with their mandates and responsibilities.

United Nations Development Programme: The UNDP is GEF Implementing Agency (IA) for this project. The UNDP was in charge of implementing all project activities produced as well and articulated PIRs and contributed to the preparation of other important documents. UNDP China CO took responsibility for the administrative and procurement procedures, including ensuring timing payments.

The contribution of the UNDP China CO to the PMU, partners, and stakeholders was timely and highly satisfactory. In particular, it was pointed out that the UNDP China CO:

- Offered full support to project implementation, administration, and timely organization of the main activities.
- Facilitated the recruitment and engagement of several national and international consultants.

- Facilitated the preparation of procurements and the selection of the winners of the tenders.

During the most difficult period of the COVID-19 outbreak (from the beginning of 2019 till the time of this TE preparation), the UNDP and its CO have continued working and motivating people. According to the interview outcomes, the project did not fully stop due to the COVID-19 outbreak but, instead, developed alternative solutions to the barriers to face-to-face meetings and trainings.

Based on the above, the UNDP **implementation**/**oversight** is rated:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

Foreign Environmental Cooperation Center (FECO) of the Ministry of Ecology and Environment (MEE): The Implementing Partner for this project is the Foreign Environmental Cooperation Center (FECO) of MEE. MEE has designated FECO as the entity responsible for implementing of activities relating to environmental issues and is responsible for the day-to-day execution and implementation of this project.

Within this project, FECO responsibilities included:

- Support to the development and implementation of corresponding policy and regulations, as well as coordination of key governmental stakeholders;
- Mobilization of co-financing for the project;
- Collecting and analysing data and information;
- Compiling reports, organizing training, and publishing information;

Furthermore, in this project FECO implemented the project, coordinated stakeholders' activities, and ensured the achievements of the project's goals.

During the interviews, all stakeholders expressed high appreciation for the work and the contribution given by FECO to the Project Board, PMU, and other projects entities. It is of particular relevance its contribution during the COVID-19 pandemic and the intention of FECO to proceed with the project implementation keeping into consideration the sanitarian measures and using the new distance education and communication tools to communicate, supervise, and keep the project running.

Based on the above, the FECO **Implementing Partner execution** is rated:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

Based on the above and the interviews conducted by the evaluator, the **Overall Project implementation/execution** is rated:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

4.2.6 Risk Management

The 2018 PIR identified four major risks covering the project's management areas (strategic, environmental, operational, and regulatory). The risk categories have changed through

discussions within the PMU, the people in the fields, and the quarterly meetings, and some were well mitigated. For example, the possibilities of crop breakouts were mitigated using modern and alternative technology, which can minimize such risks.

However, in 2021 the PIR pointed out two new risks. The first risk was the negative impact of the COVID-19 Pandemic, which forced a temporary halt in project execution. The second risk, associated directly with the first one, was losing the "window" for the yearly harvest time in crop production and consequently missing data collection. It should be noted that these two risks were well managed during the implementation of the project and the delay in the activity did not compromise data collection.

Also, it is important to mention that these risks were monitored, discussed, and regularly reported according to the GEF guidelines.

Social and Environmental Standards

The project has identified two SES risks with low ratings. PIRs 2018 and 2019 discuss the SES (or SESP). However, it is unclear why there is very little information about them during the last two years of implementation. In addition, the importance of including the gender dimension was pointed out but never done..

Original Risk (in ProDoc)	Revised Risk	Original Rating	Revised rating	TE Findings in the revision
1) Release of pollutants to the environment due to routine or non - routine circumstances with the potential for adverse local, regional, and/or transboundary impacts	No	Low	No	The project has not identified new SEPS
2) Significant consumption of raw materials, energy, and/or water.	No	Low	No	The project has not identified new SEPS

4.3 Project Results and Impacts

4.3.1 Progress toward objective and expected outcomes

Based to the UNDP/GEF evaluation guidelines "*Guidance for conducting terminal evaluations of UNDP-supported, GEF-financed projects*", the achievements of expected results were evaluated in terms of attainment of the overall objective as well as identified outcomes.

The performance of the project was analyzed by components considering three important elements:

- General progress toward the established baseline level of the indicators;
- Actual values of indicators by the end of the project;
- Evidence of relevance, effectiveness, and efficiency of the results as well as how this evidence was documented and reported.

According to primary and secondary data, analysis of documents, reports, available information, and individual and group interviews with key stakeholders including the beneficiaries of the project, and after a careful assessment of the activities and outcomes, the results are presented in the table 3. It is important to notice that the MTR has been never conducted.

Based on the below the **Progress Towards Objectives and Expected Outcomes** is rated as:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

Table 3. Progress Towards Objectives and Expected Outcomes

Project objective: Phase-out of Endosulfan by Biological Control and Alternative Technologies in Cotton Pest Management in China.					
Indicator	**Baseline**	**EOP target level**	**Progress at the end of project**	**Achievement**	**TE Rating**
01. Quantity of endosulfan production reduced per year.	Production of endosulfan per year: 2,850 tons.	Production, commercialization, and consumption of endosulfan completely eliminated.	Level of achievement of the indicator: • *From March 26th, 2019, the production, circulation, usage, import and export of endosulfan were completely forbidden in China, as publicly announced by the Ministry of Ecology and Environment and other 10 ministries on March 11th, 2019.* • *On October 30, 2019, the National Development and Reform Commission of the People's Republic of China issued the "Guiding Catalogue for Industrial Structure Adjustment (2019 Edition)", which included endosulfan as a backward product in the elimination category.* • *After the announcement took effect on March 26, 2019, the production of endosulfan in China has dropped to zero.*	The target is achieved. All activities are completed.	**HS**
02. Number of direct project beneficiaries.	None	# of trained people: - 60 policy makers. - 300 extension agents.	Number of people trained: • *100 policy makers, including 65 males and 35 females (167% of original end target).* • *300 extension agents including 60% of female and 40% of male (100% achievement of end target).*	The target is achieved. All activities are completed.	**HS**

		- 12,000 representative farmers in 12 cotton-producing provinces and Xinjiang Autonomous Region	• *30,000 cotton cultivators including 40% females (250% of end target) have been trained in Xinjiang in 400 sessions of Farmers Field Schools (FFS).* • *The effective combination of FFS with local policies encouraging farmers to attend the farmers' night school once or twice a week.* • *The interviews and the PIR pointed out that the involvement of farmers was above the expectations due to the high involvement and participation in phasing out endosulfan and substituting it with safer, healthier, and more natural technologies.*		
03. Relevant (a) policies and (b) regulations for substituting of endosulfan at both local and national levels: (i) developed and (ii) enforced.	None	- Policies banning endosulfan production and consumption completed. - Regulation promoting alternatives completed	# of policies and regulations: • *Policies banning endosulfan 100% completed. Local agricultural authorities, led by the central government, have conducted the supervision and inspection on the producers and distributors of endosulfan in March 2019.The State Council and the Ministry of Agriculture have this long-term monitoring mechanism to ensure endosulfan and other restricted pesticides are properly managed and no longer accessible in the market even after the lifespan of this project.* • *Regulation promoting alternatives 100% completed. The National Agro-Technical Extension and Service center issued a technical plan for the prevention and control of major cotton pests and diseases on March 23, 2020. The cotton pest control agents and control methods selected in the demonstration area of Shawan*	The target is achieved. All activities are completed.	**HS**

			County were included in the plan. The Ministry of Agriculture and Rural Affairs issued the Regulations on the Prevention and Control of Crop Diseases and Insect Pests on April 8, 2020. The regulations clearly stipulate that the state encourages and supports the use of green prevention and control technologies such as ecological management, healthy cultivation, biological control, and physical control, advanced pesticide application machinery, and safe, efficient, and economical pesticides.		
04. Models of biological control and alternative technologies successfully established and implemented.	None	- Key biological control and alternative technologies demonstrated in at least 3,000 hectares. - 1 or 2 integrated technical models developed. - The integrated technical models demonstrated in at least 15,000 hectares. - Operational manuals of the technical models published.	Key biological control, alternative technologies, and manual. • *Key biological control and alternative technologies including directly removing eggs larvae to using sex pheromone lure, have been selected and demonstrated in 42,000 hectares.* • *The integrated model has been selected and optimized based on technical feasibility, environmental friendliness, economic feasibility, practicality, and other factors. The model is combined with the big data analysis to utilize Xinjiang's decades-long monitoring data of cotton pests. Also, this model has improved the forecast accuracy of pest breakout to help farmers decisions.* • *The integrated technical model has been demonstrated in 42,000 hectares, which is two times higher than the target.* • *The operational manual named "Guidance on the endosulfan alternative technologies and green pest prevention and control technology model in cotton fields" was officially published in December 2020 by the China*	The target is achieved. All activities are completed.	**HS**

			Environment Publishing Group. The manual provides detailed information on the hazards of endosulfan, environmental risks, domestic policies and regulations on the phase-out of endosulfan in China and alternative technologies. This manual can be used to guide agricultural extension agents and cotton farmers in green control of cotton pests.		
The objective of the project is considered achieved by the evaluation exercise.					

Outcome 1: Capacity of policy makers, national and local project teams and key stakeholders strengthened to facilitate endosulfan phase out.					
Indicator	**Baseline**	**EOP target level**	**Progress at the end of project**	**Achievement**	**TE Rating**
1.1. National level monitoring and supervision capacity strengthened.	None	- Gap analysis conducted. - Monitoring and supervision capacity strengthened through training activities to facilitate achievement of outputs.	Monitoring and supervision capacity: • *Monitoring activities will continue until the completion date of the project (December 2021).* • *·Gap analysis of China fulfilling the obligation of phasing out endosulfan has been conducted in 2017, which is used to help structure and execute the project activities.* • *Monitoring and supervision has been largely strengthened through the below activities:* *A. Review of producing and selling restricted pesticides has been issued by MOA through the project's coordination.* *B. Monitoring system of tracking the selling and buying of endosulfan and other restricted pesticides has been established by MOA and local MOA offices.*	The target is achieved. All activities are completed.	**S**

			C. Supervision and inspection trip conducted once during the reporting period (launched on March,2020) and routinely conducted by national, provincial and city governments to ensure the restricted products are no longer available in the market. *D. Local implementation plan for POPs convention has been issued by related governments.* *E. National food safety standard—Maximum residue limits for pesticides in food has been published, which includes the residue of endosulfan.*		
1.2 Reporting system established and training on imports and exports management conducted.	None	- Reporting system established and training on imports and exports management conducted to strengthen enforcement actions.	Reporting system and training: • *After endosulfan was listed into Restricted Use of Pesticide List in 2017, Xinjiang has gradually required all producers and dealers installed purchase-sell-stock management system, which ensured a full life cycle monitoring of endosulfan.* • *On December 30, 2019, the Ministry of Ecology and Environment, the Ministry of Commerce and the General Administration of Customs jointly issued the announcement of "China's Strictly Restricted List of Toxic Chemicals" (2020). In the announcement, endosulfan was clearly prohibited import and export.* • *On November 11，2019 the training of import/export was held. About 99 participates, including 20 females have been trained.*	The target is achieved. All activities are completed.	**S**
The achievement is considered full, although the M&E and Reporting system highlighted the gender gap. Little has been done to mitigate it.					

Outcome 2: Policy development to promote and facilitate phase-out of endosulfan.					
Indicator	**Baseline**	**EOP target level**	**Progress at the end of project**	**Achievement**	**TE Rating**
2.1. Development of pesticide management policy.	Pesticide management policy on phasing-out endosulfan and promoting biological control. The alternatives are not formulated.	- Gap assessment undertaken. Pesticide management policy development workshops and training courses held. - Decree by multi-ministry collaterally issued and published. - At least 60 policy makers from multi-ministry and various local levels trained on pesticide policy development and enforcement.	Pesticide management policy: • *Workshops/meetings held by FECO conducted at least once every six months to assess the fulfilment of policy gaps.* • *Decree on full ban of endosulfan by 11 ministries collaboratively issued and published in March 2019.* • *Currently at least 60 policy-makers (30% female and 70% male) from 11 ministries have been engaged and trained to contribute to the formation of national decree. Plus at least 180 policy-makers (female:male rate is 3:7) in MOA and Xinjiang local bureaus have been trained in the extension of pesticide policy development and enforcement.*	The target is achieved. All activities are completed.	**HS**
2.2. Development of agro-technical extension policy on phasing out endosulfan.	Agro-technical extension policy on phasing out endosulfan and promoting biological control. The	- Gap assessment undertaken. Agro-technical extension policy development workshops & training courses held.	Agro-technical extension policy: • *Gaps in the agro-technical extension policies have been deeply communicated during the workshops held by FECO with extension experts.* • *5,000 Agro-technical extension materials, such as the wall-charts of Helicoverpa armigera IPM decision sheet for cotton production have been developed and*	The target is achieved. All activities are completed.	**HS**

	alternatives are not formulated.	- Agro-technical extension policy document published.	*disseminated in the demonstration area and made available to all farmers.* • *The National Agro-Technical Extension and Service center issued a technical plan for the prevention and control of major cotton pests and diseases on March 23, 2020. The cotton pest control agents and control methods selected in the demonstration area of Shawan County were included in the plan.* • *The Ministry of Agriculture and Rural Affairs of the People's Republic of China promulgated the Regulations on the* Prevention and Control of Crop Diseases and Insect Pests in April 2020. It is clearly stated in the regulations that the State encourages and supports the promotion of green control of crop diseases and insect pests.		
The achievement is considered full.					

Outcome 3: Production and consumption of 2,850 tons of endosulfan reduced through introduction and field demonstration of biological control and alternative technologies.					
Indicator	**Baseline**	**EOP target level**	**Progress at the end of project**	**Achievement**	**TE Rating**
3.1. Key biological control and alternative technologies identified and selected for demonstration to substitute endosulfan.	- Review of existing information on key biological control and alternative technologies	- Review and assessment completed and review report submitted and published. - Appropriate key biological control	Key biological control and alternative technologies: • *The activities are completed and well reported in the first reporting period.* • *Models of biological control and alternative technologies are successfully established and implemented.*	The target is achieved. All activities are completed.	**HS**

	not conducted. - Potential appropriate key biological control and alternative technologies are not screened and selected.	and alternative technologies are screened out and verified by field trials.	• *The models are well documented and shared with the stakeholders.*		
3.2. Field trials and demonstration of the selected key biological control and alternative technologies.	- Selected key biological control and alternative technologies have not been demonstrated in fields. - The integrated technical models have not been developed.	- Key biological control and alternative technologies of trials and demonstration in at least 3,000 hectares. - 1 or 2 integrated technical models developed.	Field trials and demonstration of selected key: • *Key biological control and alternative technologies tested and demonstrated in 42,000 hectares in Shawan County.* • *Models of biological control and alternative technologies successfully established and implemented.* • *The outcomes are recorded and well documented.* • *The outcomes are shared with all stakeholders.*	The target is achieved. All activities are completed.	**HS**
3.3 Field demonstration of the integrated technical models of biological control and	- The integrated technical models have not been	- The integrated technical models demonstrated in at least 15,000 hectares.	Field demonstration of integrated technology: • *The technical models have been demonstrated in 42,000 hectares (over 2 times of the target).*	The target is achieved. All activities are completed.	**HS**

alternative technologies.	demonstrated in fields.	- Operational manuals of the technical models published.	• *The operational manuals have been updated and modified to be simple and easy for farmers' applications*.		
The achievement is considered full.					

Outcome 4: Three hundred extension agents and 12,000 representative farmers trained on the use of biological control and alternative technologies to replace endosulfan usage.					
Indicator	**Baseline**	**EOP target level**	**Progress at the end of project**	**Achievement**	**TE Rating**
4.1 Training of Trainers (ToT) on the adoption of integrated technical models of biological control and alternative technologies.	- Extension agents not trained on the adoption of the integrated technical models.	- 10 TOT sessions conducted. - 300 extension agents trained.	Training ToTs: • *The target has been achieved and exceeded the expectation.* • *100 policy makers (167% of end target) (40% of female).* • *300 extension agents (100% of end target) have been trained in Xinjiang in 10 sessions of TOTs.* • *Gender balance was not always respected.*	The target is achieved. All activities are completed.	**S**
4.2. Training of Farmers in FFSs on the adoption of the integrated technical models of biological control and alternative technologies.	Farmers not trained on the adoption of the integrated technical models	- 400 sessions of FFSs conducted. - 12,000 farmers trained on the adoption of the integrated technical models.	Training of Farmers in FFSs: • *The target is achieved and participation of farmers exceeds the expectation.* • *30,000 (60% female:40% male) (250% of end target) cotton cultivators have been trained in Xinjiang in 400 sessions of FFS.*	The target is achieved. All activities are completed.	**HS**
The achievement is considered full, although the training of ToTs was not gender balanced.					

Outcome 5: Pest monitoring systems developed to better anticipate pest impacts, improve efficiency on information dissemination to better support farmers to use new alternative technologies.					
Indicator	**Baseline**	**EOP target level**	**Progress at the end of project**	**Achievement**	**TE Rating**
5.1. Enhanced pest and endosulfan monitoring systems in the pilot areas.	- Inadequate existing pest and endosulfan monitoring systems.	- Existing pest and endosulfan monitoring systems reviewed. - Report recommending improvement submitted. - Pest and endosulfan monitoring systems improved for use in the pilot areas.	Pest and endosulfan monitoring systems: • *A) Monitoring System: China Pesticide Digital Supervision and Management Platform has been established and all pesticides dealers in the demonstration area in Xinjiang have been registered on the platform, as required by MOA signed with the Implementing Agency. Further, the monitoring system requires all producers and dealers in Xinjiang area to be licensed and to conduct the activities of buying and selling via the online system.* • *B) Improvements in Baseline Monitoring: The Pests Automatic Monitoring System and the Field Microclimate Monitoring System have been installed in the pilot area in June 2021 to improve the accuracy of forecast. The details are as follows: Through the implementation of the project, the pest monitoring capacity has been significantly improved.*	The target is achieved. All activities are completed.	**HS**
5.2. Establishment of information dissemination systems and information	Inadequate rural information dissemination systems.	Rural information dissemination system established to facilitate	Information dissemination systems: • *FECO produced, shared, and posted news and information to farmer cooperative's Wechat group*	The target is achieved. All activities are completed.	**HS**

dissemination undertaken.		information dissemination.	*that is subscribed to 4,000 targeted farmers in Xinjiang.* • *The development of WeChat public account was completed and applied, and more than 50 pieces of important information have been released through this platform to farmers and stakeholders. This WeChat public account has been viewed 1,300 times in 6 months.*		
5.3. Application and big data solution developed to improve services to farmers and enterprises.	- No mobile phone application to provide information to farmers or enterprises. - Rural information dissemination system lacks interactive functions. - Lack of big data solution for farmers/enterprises as well as for the sector.	- Existing rural information dissemination system reviewed and improved. - Mobile application developed to provide better services. - Big data solution to strengthen relevant public and private services.	Big data solutions: • *Partner has been identified, collected 22 years of relevant basic data on cotton bollworm, and developed a prediction model.* • *Information on the occurrence of bollworm, calculated through the prediction model, was published through the above-mentioned WeChat public account.*	The target is achieved. All activities are completed.	**HS**
The achievement is considered full.					

Outcome 6: National replication programme and work plan developed and disseminated.					
Indicator	**Baseline**	**EOP target level**	**Progress at the end of project**	**Achievement**	**TE Rating**
6.1. Results of field demonstration of the integrated technical models.	None	- End of project target level Results of field demonstration of the integrated technical models evaluated and documented for substitution applicability	Field demonstration: • *The screening of the four chemical pesticides, sex pheromone-based mass trapping, and corn trap tape technology is effective and has been recognized by local cotton farmers.*	The target is achieved. All activities are completed.	**HS**
6.2. Preparation of a national replication programme.	None	- A national replication plan is developed, reviewed and approved.	Preparation of National Replication Programme: • *The project has prepared a National Replication Programme.* • *The project has officially published Guidance on the endosulfan alternative technologies and green pest prevention and control technology model in cotton fields. The guideline provides detailed explanations of the Program and alternative technologies that have been selected for better application by cotton farmers.*	The target is achieved. All activities are completed.	**HS**
6.3 Adoption of the national replication programme and work plan and its dissemination.	None	National workshops on dissemination of the adopted national	Adoption of National Replication Programme: • *Three training courses have been held for the Yangtze River Basin, the Yellow River Basin and Southern Xinjiang cotton producing area.*	The target is achieved. Not all activities are completed but will be completed	**S**

		replication plan are held.	• *Two workshops will be held before the end of the project.*	before the end of the project	
The achievement is considered full.					

Outcome 7: Effective monitoring and evaluation; knowledge sharing and information dissemination ensured.					
Indicator	**Baseline**	**EOP target level**	**Progress at the end of project**	**Achievement**	**TE Rating**
7.1 Timing and quality of annual (APRs, PIRs etc.), M&E reports, and TE report.	Indicative M&E plan, budget and time-frame.	- M&E activities implemented as scheduled and project implementation monitored to achieve project objectives.	*Reports, M&Es, reviews, and other documents:* • *PIRs, and the delivery of monitoring tables are conducted as per GEF, UNDP and FECO's policies to ensure the efficiency and quality of the project implementation.* • *On 24 July, 2019, the mid-term review meeting was organized in Beijing and participated in by all project stakeholders and external experts to appraise progress, achievements and also jointly decide the work plan for the rest of the project period.* • *In October 2020, FECO and UNDP visited Xinjiang demonstration areas and discussed the project's progress with the local project office.* • *The selection of the TE expert was carried out in early July. Recruitment of international and national evaluation experts has been successfully completed. Inception report and final report were delivered as planned.*	The target is achieved. All activities are completed.	**HS**

7.2 Lessons learned and experience documented and disseminated. Post-project action plan formulated.	None	- Lessons-learned and experience gained documented and disseminated.	Lessons learned: • *The lessons learned and experience gained during project management and implementation have been documented in QPRs, APRs, and PPRs as well as communicated to key stakeholders during meetings and site inspections.* • *Evaluation meetings are held quarterly (including telcon). FECO is holding 5 evaluation meetings in the last year in Beijing and Xinjiang to share experiences and knowledge especially from NGOs and private sectors.* • *Before the project officially ends, a wrap-up meeting will be held to summarize the project results and lessons learned.*	The target is achieved. All activities are completed.	**S**
The achievement is considered full, although the wrap-up meeting is planned and will be held before the end of the project.					

4.3.2 Relevance

All evidence showed that the Phase-out Endosulfan in China was highly relevant for the country. The stakeholders interviewed during the TE expressed the important positive impact of the project on the environment, the farmers, and the Chinese society. The main proof of the relevance of this project was high interest from the cotton farmers, their organizations, the governmental institutions, and stakeholders for the reduction of POPs and elimination of endosulfan in China.

The relevance was not only thematic. The Phase-out of Endosulfan in China project was relevant in terms of stakeholders' engagement, methodology used, and approach to solving the problem. The approach was holistic and was well structured keeping into consideration three levels of relevant intervention:

- At policy level, the work resulted in the ban of production, commercialization, and distribution of endosulfan and a number of important activities were conducted as well.
- At stakeholder level relevant training activities for policy- and decision-makers, farmers, and stakeholders involved in the project were organized with success. This positive outcome was confirmed during the individual and group interviews.
- A modern pedagogical approach was used to show to stakeholders the multi-benefits of biological control and alternative modern technologies. Instead of the old, inefficient, and ineffective top-down approach, this modern approach convinced the farmers of the benefits of using non-chemical tools.

The Phase-out of Endosulfan in China project resulted aligned with no doubts with the GEF - 6 Chemicals and Waste Focal Area Strategy. In particular, this project is relevant and supports the Strategy Objectives 1 and 2 of GEF-6.

- Develop the enabling conditions, tools, and environment to manage harmful chemicals and waste, and
- Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies.

The Phase-out of Endosulfan in China project was definitively relevant to move ahead with the Agenda 2030 with its focus on Sustainable Development Goals (SDG) and more specifically, with Goal #12 "Responsible consumption and production". This SDG Goal wants to implement "the ten years Framework of Programs on Sustainable Consumption and Production Patterns to achieve the environmentally sound management of chemicals and all wastes".

Furthermore, this project aligned with:

- The Stockholm Convention on Persistent Organic Pollutants.
- The China national priorities toward reducing pesticide use and prioritizing non-chemical measures including biological control.
- The UNDP Country Programme Document for China (2016-2020). Specifically, in Output 2.1: China's actions on climate change mitigation, biodiversity, and chemicals across sectors.
- The UNDP Strategic Plan Output 1.3. Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and wastes.

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

4.3.3 Effectiveness

The Phase-out of Endosulfan in China project effectively achieved its specific objective and outcomes as pointed out in section 4.3.1 (Progress toward objective and expected outcomes). Furthermore, the strategy set up by the project in order to achieve the expected results was very well articulated, and the project was able to achieve its ambitious targets through collaboration, participation, and teamwork.

As previously discussed, the project aligns with the Chinese national proprieties towards reducing pesticide use and prioritizing non‐chemical measures, including biological control. During the past 20 years, the Ministry of Agriculture and Rural Affairs of China issued five decrees; 38 highly toxic pesticides including several POPs have been banned from use and their registrations stopped, and 19 pesticides were prohibited from being used.

Furthermore, the project aligns with the GEF‐6 Chemicals and Waste Focal Area Strategy, supporting Strategy Objective 1 (CW 1): "Develop the enabling conditions, tools and environment to manage harmful chemicals and wastes". Furthermore, it supports Program 1: "Develop and demonstrate new tools and regulations along with economic approaches for managing harmful chemicals and waste in a sound manner", as well as supporting Strategy Objective 2 (CW 2) to "Reduce the prevalence of harmful chemicals and waste and support the implementation of clean alternative technologies/substances" and Program 3, "Reduction and elimination of POPs".

The project includes important outcomes that have effectively contributed to the achievement of project's objectives

Outcome 1. Capacity of policymakers, national and local project teams and key stakeholders strengthened to facilitate endosulfan phase out.

- The project coordinated efforts with other initiatives run by MEE, FECO, and UNDP CO to prepare the Monitoring System and contributed in several sectors.
- The project has contributed together with the MOA and MEE/FECO and local authorities to develop a monitoring system of tracking the selling and buying of endosulfan and other restricted pesticides.
- The project coordination has supported the MEE/FECO in policy formulation on the review of producing and selling restricted pesticides.
- Furthermore, the project has supported the MEE/FECO and local authorities to implement local POPs plan and supported the publication of the National Food Safety Standard, the Maximum Residue Limits for pesticides in food (includes the residue of endosulfan).
- The project has supported the action of the MEE, MOA, the Ministry of Commerce, the General Administration of Customs that jointly announced, "China's Strictly Restricted List of Toxic Chemicals", in providing valuable information about endosulfan. Endosulfan was included in this list, and it were prohibited import and export.

Outcome 2: Policy development to promote and facilitate phase-out of endosulfan.

- The project has provided bi-annual technical support to the MEE/FECO for organizing workshops/meetings to assess the fulfilment of policy gaps.

- The project has provided support to MEE/FECO for data collection and analysis that contributed to the preparation of the decree on the full ban of endosulfan, officially published in March 2019.
- The project supported the National Agro-Technical Extension and Service center issued a technical plan for the prevention and control of major cotton pests and diseases on March 23, 2020.
- The project endorsed the Ministry of Agriculture and Rural Affairs of the People's Republic of China that promulgated the Regulations on the Prevention and Control of Crop Diseases and Insect Pests in April 2020.

Outcome 3. Production and Consumption of 2,850 tons of endosulfan reduced through introduction and field demonstration of biological control and alternative technologies.

- The project exceeded the expectation. The demonstration of key biological control and alternative technologies was planned for 3,000 ha but instead conducted successfully in 42,000 ha in Shawan County.
- Similar situation occluded with the demonstration of technical models. The project demonstrated the benefits of technical models in 42,000 hectares (over 2 times the target).

Outcome 4: 300 extension agents and 12,000 representative farmers trained on the use of biological control and alternative technologies to replace endosulfan usage.

- The project was able to exceed the TOTs target expectation. It trained 100 policymakers (167% of end target), 300 extension agents (100% of end target) in 10 TOTs sessions in Xinjiang.
- Similar results were achieved during the FFSs by the project. The farmers trained in the FFSs exceeded the expectation: 30,000 (250% of end target) cotton farmers have been trained in Xinjiang in 400 sessions of FFS.

Outcome 5. Pest monitoring systems developed to better anticipate pest impacts, improve efficiency on information dissemination to better support farmers to use new alternative technologies.

- In conjunction with MARA and FECO, the project prepared the China Pesticide Digital Supervision and Management Platform. All pesticides dealers in the demonstration area in Xinjiang have been registered on this platform, as required by MARA signed with the Implementing Agency.
- The project has installed the Pests Automatic Monitoring System and the Field Microclimate Monitoring System in the pilot to improve forecast accuracy.
- With the collaboration of FECO, the project has shared and posted news and information to the farmer cooperative's Wechat group that has been subscribed to by 4,000 targeted farmers in Xinjiang. Furthermore, the WeChat public account was activated, and relevant information was released.

Outcome 6. National replication programme and work plan developed and disseminated.

- In collaboration with MEE/FECO, the project has contributed to the preparation of the National Replication Plan and has also officially published Guidance on the Endosulfan and Alternative Technologies and Green Pest Prevention and Control Technology Model in Cotton Fields.

Outcome 7. Effective monitoring and evaluation; knowledge sharing and information dissemination ensured.

- Evaluation meetings were held according to plans. The project supported the MOA/FECO in organizing 5 evaluation meetings in Beijing and Xinjiang to share experiences and knowledge, especially from NGOs and private sectors.

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

4.3.4 Efficiency

The Project has been efficient in many aspects, including:

- The project has efficiently used the financial resources available. It should be noted that due to correct management of resources, the project received an extension without an extra disbursement of money.
- During the interviews, some interviewers have highlighted the correctness of resources allocated, but others have pointed out the minimal resources allocated for gender equality.
- The extension of the project was necessary and very well justified. The extension provided the extra time to collect the necessary field data, analyze them, set up the best models, and close the project without further delays..
- Collaboration with government institutions such as MEE/FECO, MARA, MOF, relevant ministries, and UNDP. This collaboration was also reflected at the local level and also included local cooperatives of farmers, which helped to mobilize, in a relatively short time, a high number of people (e.g. policy- and decision-makers, and farmers).
- Collaboration with the academic sector was pointed out several times during the interviews. It was very important for the knowledge generation and the practice contribution to the project. Furthermore, the project and the academia were able to spread the capacities generated to a wider audience in China and abroad.
- Furthermore, the collaboration with the academy supported the publication of relevant manuals and reports such as the “Report on Green IPM Model for Lifetime Management of Cotton with Endosulfan Alternatives” that promoted the project’s outcomes beyond the country’s border.
- Hiring capable consultants for the project. During the interviews, stakeholders pointed out the high level of professionalism and capability of consultants.
- High professional support of UNDP CO to the PMU, M&E activities, hiring people, financing, and administration activities.
- The project coordinated well with all institutional stakeholders and this avoided the unnecessary duplication of interventions.
- Capacity of mobilizing people and ensuring a modern participative approach. This included the capacity of generating a great level of consensus around the project’s outcomes.

- Capacity of mobilizing co-financing resources, provide punctual payments, keep track of administration activities including reports, M&Es, and many other important documents.
- Good level of transparency and cooperation of the public sector with farmers and cooperatives.

However, some minor inefficiencies were noted:

- Exclusion of tobacco farmers due to late survey report. The survey highlighted that the tobacco sector did not use endosulfan.
- Limited collaboration with the private chemical industry and marginal involvement to develop new green technologies for the cotton sector.
- Despite the high number of female farmers working in the cotton sector, most people trained were males. Thus, gender balance should be carefully considered.
- Towards the end of the project, some extra resources were allocated specifically for gender equality (i.e. workshops for only women). A better distribution of resources for women's empowerment across the entire duration of the project would have a better impact.

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
	S				

4.3.5 Overall Outcome

Base on the UNDP-GEF Guidelines[7] the overall rating "*will be calculated, with such calculation based on the ratings of which relevance and effectiveness are critical.*" Thus, considering the three constrains indicated in the UNDP-GEF Guidelines, the overall project rating is:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
HS					

4.3.6 Social and Environmental Standards

The PIRs contain information about Social and Environmental Standards (Safeguards). The PMU, with the support of UNDP CO, has completed the forms and identified no major risks. Some interviewees reported that the project has strictly followed the social and environmental standards and PMU and UNDP CO have taken this issue very seriously.

[7] http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf

However, two minor risks (classified as “low risks”) were identified from the UNDP Social and Environmental Screening Procedure (SESP) during the preparation of the ProDoc: The release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts; and the significant consumption of raw materials, energy, and/or water. The project has developed tools to mitigate these risks.

The COVID-19 outbreak in 2019, 2020, and 2021 had a negative impact on many practical activities, starting with travel restrictions and social distancing measures. The projects shifted some of the activities to online modalities (e.g. online meetings, online training, etc.). There is no evidence that these risks have changed category or new unpredictable risks have appeared.

4.3.7 Sustainability

GEF, as well as many international Agencies/Organizations defines sustainability as “*The continuation of positive effects from the intervention/project after it has come to an end, and its potential for scale-up and/or replication*[8]*”*. The likelihood of continuing benefit after the project ends indicates its level of sustainability. Thus, the assessment of the level of the project’s sustainability considers the risks that are likely to affect the continuation of project outcomes.

Below is the detailed assessment of the financial, socio-economic, institutional, and environmental risk categories:

4.3.7.1 Financial sustainability

As pointed out in previous sections, the GoV of China has evident intention and a strong commitment to financially support projects/actions/interventions to reduce and phase out some important POPs. Furthermore, the GoV of China, in coordination with FECO/MEE, line ministries, and local authorities, wants to monitor POPs and reduce the risks caused by pesticides on human health. It is worth mentioning that GEF is financially committed to supporting the reduction of POPs in China.

During the interviews, the stakeholders have also clearly stated a general interest in proceeding with the project after its end. An enabling environment for continued financing was further discussed. Financial resources will be mobilized by local agriculture regional entities that have financial resources (mainly provided by the Central State) to promote the reduction of POPs and improve the sustainability of agriculture, including this specific project. Furthermore, many farmers, their organizations, and the private sector have expressed their willingness to continue financing this project and similar projects that reduce POPs.

Thanks to past similar experiences, the PMU implemented the project into a sort of catalyser initiative for similar phase-out pesticide projects in China. Similar projects, such as HBCD, PhosChemEE, and others, have been recently or will be financed and are benefiting from this project. Thus, most of the key actors of this project that have financial resources are aware

[8] https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.C.56.Inf_.08_Further%20Work%20on%20the%20Sustainability%20of%20GEF%20Projects%20and%20Programs_3.pdf

of the achievements, and the likelihood that they will continue the work in this project in the coming years is promising.

Finally, most likely similar initiatives supported by the international community and national players will continue to some extent the work done by the Phase-out of Endosulfan in China project.

Based on the above discussion, the financial risks are relatively negligible, and the project's financial sustainability is rated as:

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
L			

4.3.7.2 Socio-economic sustainability

China is a growing economy and agriculture is playing a central role in this historical revolution. Great attention is dedicated to the health and well-being of farmers and the environment. During the recent National People's Congress, China has highlighted the central plans of "green transformation" of society and the economy and this project followed these steps.

There are no political risks that can undermine the longevity of the project outcomes, but the possibility cannot be excluded that the private sector in favor of chemicals (i.e. chemical industry) will find its way to bypass the restriction and propose new chemical products. However, the farmers that have attended the training courses are now fully aware of the benefits of not using chemical products. All of them have expressed the intention to abort the chemicals in favor of non-chemical solutions.

Furthermore, the interviewed stakeholders confirmed a positive socio-economic impact on local farmers and local communities living in sites with high use of pesticides. First, reducing pesticides and endosulfan had a positive economic impact because it reduced the direct costs of buying and spraying those chemicals and indirectly the costs of removing pollution from the environment. Second, biological tools are sustainable, green, and a better solution for future generations.

On the other hand, there is an unbalance involvement of women farmers in developing project activities such as training. However, the project has mitigated this gap by opening groups to women of all ages. In training courses for policy- and decision-makers, the number of females surpassed the males. The harmonic development of society requires a balanced involvement of both genders.

Based on the above discussion, the socio-economic risks are moderate, and the project's socio-economic sustainability is rated as:

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
	ML		

4.3.7.3 Institutional framework and governance sustainability

China's Government is committed to further reducing the negative impact of the most dangerous POPs and finding alternative sustainable solutions. The long-term institutional framework sustainability is guaranteed by creating a large pool of TOTs and well-trained technicians to support future project to mitigate the negative impact of POPs in the country.

The Phase-out of Endosulfan in China has successfully shaped the legal and institutional system by eliminating endosulfan in the country through laws and regulations, and this provides institutional sustainability and engagement toward the overall intervention. Thus, it creates a legal framework that will pave the way to eliminate similar dangerous pesticides.

In addition, this project's predecessors in this area (e.g. reduction and phase-out of POPs) have consolidated long-term sustainable governance. The Government is interested in continuing the work to reduce POPs in agriculture and it has developed in cooperation with UNDP and GEF other projects to continue the work started to ensure its sustainability.

The country is institutionalizing gender equality. From a political point of view, more and more women are in the apical position of society, and this will be reflected in this and other similar projects. However, more activities involving women have been organized in the last year. Human rights were not a concern in this project.

Based on the above discussion, institutional and governance risks are moderate, and the project's institutional framework and governance sustainability is rated as:

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
L			

4.3.7.4 Environmental sustainability

The project is environmentally sustainable. There are no outputs or activities of this project that may pose any environmental threats. This was evident during the individual and group interviews, workshops, the PIRs, APRs, and M&E reports. Thus, TE could not identify any environmental factors that may negatively affect the sustainability of the Phase-Out of Endosulfan in China.

Based on the above discussion, there aren't environmental risks, and the project's environmental sustainability is rated as:

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
L			

4.3.7.5 Overall likelihood

Based on the above discussions the project's overall sustainability is rated as:

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)

L			

4.3.8 Country Ownership

The Government of China has been very active in developing and implementing the Stockholm Convention. The Chinese government approved the NIP in April 2007. This clearly highlighted that POPs should be fully banned in China. The GoV of China has demonstrated a strong commitment to reducing and phasing out POPs to mitigate environmental problems cause by POPs and reversing the negative effects caused to human health.

The political stakeholders such as the Government of Xinjiang Uygur Autonomous Region, the Government of Shawan County, and MEE have maintained their financial commitment and timely provided the disbursement of the financial resources. Also, the MEE was in the Project Board as well as other ministries, and decisions made by the Board were passed to stakeholders.

The Board was kept small but efficient. Communications and decisions were passed to relevant stakeholders. An inter-ministerial National Steering Committee (NSC), was created to coordinate the activities of various ministries within the project. The flow of communication between the NSC and the Project Team was regular.

The Government of China has a solid collaboration with GEF. Over the past 25 years, China has carried out productive cooperation with the GEF. It has supported 148 national projects, of which many are in the POPs sector. Some examples are the phase-out of mercury, phase-out of DDT, and Dicofol.

This project was considered strategic as it was built on the past experience of China with the Dicofol and other POPs. Furthermore, the project has strategic value as it is directly aligned with China National Implementation Plan, the Regulations on the Prevention and Control of Crop Diseases and Insect Pests, China's Strictly Restricted List of Toxic Chemicals.

MARA, MEE/FECO, and other line ministries were directly involved in the project and have created useful tools nationwide such as the China Pesticide Digital Supervision and Management Platform, the Pests Automatic Monitoring System, and the Field Microclimate Monitoring System that help farmers and local agriculture communities across the country.

It is of particular importance to highlight that the ProDoc was built through open discussions with stakeholders such as ministries, universities, farmers, the private sector, and local authorities. All were consulted for the project’s preparation and implementation to ensure its alignment with national priorities. Along this line, during project implementation, the project was closely coordinated with the Global Endosulfan Programme developed by UNEP and FAO to exchange experience and replicate project results at the national level.

The project raised enthusiasm among all stakeholders interviewed during the data collection phase. All stakeholders saw the involvement of the State authorities as positive, and all interviewees appreciated their guidance. The country ownership was beyond the mere boundaries of the national institutions, and the importance of the project for the country is undoubted.

4.3.9 Gender equality and women’s empowerment

The ProDoc has clearly mentioned that "*During implementation, the project will be responsive to the different needs of different gender groups and address their priority concerns in particular the vulnerable groups including female farmers, villagers, and the poor to strengthen capacity and benefit from the project."* The results presented two different pictures of gender equality and women's empowerment.

The first picture highlighted the policy- and decision- makers, TOTs, and other specific training and capacity building courses. In this case, the number of women trained during the activities is considered relatively high for the agriculture sector. For example, in the case of policymaker training it reached a rate of 40 percent females in the courses. Specific training course such as the Endosulfan Gender mainstreaming were designed specifically for woman and the percentage of them was very high.

The second picture highlighted the training of farmers and women's empowerment. The overall number of women trained exceeded 6.000. Thanks to the PMU determination and good management capabilities the overall number of female farmers trained was relatively high. However, the number is not balanced and gap with males clearly exists, and it is considerable. This is more evident among the females covering management roles and this gap should be mitigated.

Throughout the duration of this project, there was an evolution in the attention dedicated to women. The number of women trained has increased and reached its peak toward the end of the project. This trend is somehow in line with the attention that the Central Governmental and media are dedicating in China to gender equality and women's empowerment.

4.3.10 Cross-cutting Issues

The project has positively affected the local farmer populations, and the activities implemented have sought the expected benefit. This benefit also included improving the environment by permanently eliminating a highly toxic pesticide that will not enter the environment anymore. This project has paved the way for other similar projects to phase out or reduce POPs in China.

As previously pointed out, the project's objectives and outcomes align with UNDP country program strategies, Agenda 2030 focusing on Sustainable Development Goals #12, and the GEF environmental benefits as extensively outlined in this document. During this exercise, the IE identified four cross-cutting issues: gender, disaster risk reduction, human and environmental crises, and climate change..

An important cross-cutting issue is "gender" and its multiple declinations have been extensively discussed in this document; it will not be discussed again. However, two important cross-cutting issues are human rights-based approaches and poverty reduction. Both are not at the center of the project, however, the PMU in project design and implementation has considered the youth and the most vulnerable farmers. The transparent recruitment process of trainees allowed youth, minorities, and vulnerable farmers to attend the courses at no cost. Furthermore, the project has stimulated sustainable eco-friendly innovations that will create new "green" jobs and boost the development of the new "green economy" and, consequently, reduce poverty in the long term.

Disaster risk reduction and prevention were not explicitly included in the project design; however, the PMU considered healthy and resilient environments an important aspect. A healthy environment can better support the shocks caused by disasters and mitigate the

extreme effects. For example, reducing the number of tractors that enter the cotton fields to distribute pesticides reduces the compression of the soil and facilitates water absorption and retention. This reduces the risk of floods, mudslides, and other disasters.

A better environment can prevent human and environmental crises and accelerate recovery. As pointed out during the interviews and in many reports by international organizations, a resilient environment can mitigate the risk of spreading diseases, particularly future pandemics. The UNEP said that "restoring lost ecosystems and biodiversity, fighting climate change and reducing pollution" is essential to "reduce the risks of future pandemics".

Climate change mitigation and adaptation are important cross-cutting issues. The ProDoc did not consider relevant the estimation of GHG reduction. However, it mentioned that this project has a "significant reduction" on CO_2 emissions due to a reduction of more than 25,000 tons per year of endosulfan (from both direct and indirect sources), reduction in consumption of fossil fuel (tractors and other machinery for the distribution of pesticides), reduction of water, electricity, etc. Thus, this project has also enhanced adaptation to climate change because it has improved the environment and reduced water, soil, and air pollutants. A resilient environment can cope better with climate stressors and restore quicker to extreme events.

4.3.11 GEF Additionality

Based on GEF additionality document[9], the GEF IEO classifies additionality into six factors: Specific Environmental Additionality, Legal and Regulatory Additionality, Institutional and Governance Additionality, Financial Additionality, Socio-Economic Additionality, and Innovation Additionality. This exercise is based on these six areas.

Tab 4. GEF additionalities.

GEF additionality	Description
Environmental	Due to the GEF intervention, the project was able to provide the Global Environmental Benefits: • Elimination of one toxic pesticide • Reduction of GHG emissions • Reduction of in soil, water, and air pollutants • Reduction of chemical residuals in cotton • Resilience of environment • DRR
Legal/regulatory	Due to GEF intervention, the project led to legal and regulatory reforms: • Legal framework for Phase-Out of Endosulfan in China • Regulation on residuals on food
Institutional /Governance	Due to GEF intervention, the project provided support to improve environment governance to existing institutions: • MARA

[9] https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.ME_C.55.inf_.01_Additionality_Framework_November_2018.pdf

	• MEE/FECO and • Local governmental institution
Financial	Due to GEF financial support, the project was able to: • Keep building over other development initiatives, which are the main source of financing for the environmental sector in the country. • Channel the knowledge generated into similar projects already in the GEF financial pipeline. • Provide the local national benefits generated by this project into one Global Environmental benefit.
Socio-Economic	Due to GEF support, the project has improved the living standards of: • Cotton farmers • Women in the cotton/agriculture sector • Minorities • Most vulnerable • Young • People with disabilities
Innovation	Due to GEF involvement, the project led to a fast adoption of: • New sustainable technology in pest control. • Biological control tools. • Substitution of chemical pesticide with modern sustainable solutions.

4.3.12 Catalytic Role / Replication Effect

According to the Review of GEF Support For Transformational Change, "*catalytic effects encompass externalities that go beyond the intervention, such as synergies and complementarities among different instruments and interventions that lead to impacts that are greater than the sum of the interventions*". Furthermore, the replication effect "*occurs when the processes or transmission channel established by the intervention continue to expand the outcome beyond the initial target area*".

This project has a replication Outcome 3.1.: *National replication programme and work plan developed and disseminated* and a specific Indicator 6.2. *Preparation of a national replication programme.* In fact, this project has achieved two important goals.

- The project has contributed to the preparation of the National Replication Plan. The MEE/FECO will use the Plan to replicate the activities, actions, and outcomes in similar future projects in the country.

- The project has officially published the Guidance on the Endosulfan and Alternative Technologies and Green Pest Prevention and Control Technology Model in Cotton Fields. This document provides a useful guide for farmers and stakeholders on replicating the outcomes of this project.

The catalytic effect was visible during the implementation of the project.

- The project joined synergies and, together with the Ministry of Agriculture and Rural Affairs of the People's Republic of China (MARA), promulgated, the Regulations on the Prevention and Control of Crop Diseases and Insect Pests approved in April 2020. This important national regulation clearly states the State encourages and supports the promotion of green control of crop diseases and insect pests. Widely spread in the country, all stakeholders in the sector today follow this Regulation.

- The project has catalyzed the positive interest of stakeholders. For this reason, the project has trained many TOTs, policy- and decision-makers from many ministries, including local governmental authorities, and people from private and public sectors. The knowledge generated will be passed to other organizations and from them to new projects.

The high number of different elements produced by the project, such as the regulations, guidelines, and manuals as well as technical and official reports, can potentially be applyed in any environmental initiative aiming to reduce the use of pesticides and enhance the use of sustainable and eco-friendly tools in the Chinese agriculture sector.

Furthermore, the project provided lessons learned that can be useful even outside the national borders in other countries that are facing the same or similar issues. For this reason, the GEF system of sharing this report, together with other useful material, can be a perfect tool to cartelize the interest of other donors and the international community.

The project had an articulated exit strategy. The first element is the commitment of the regional and national authorities to phase-out endosulfan. A number of important rules and regulations were approved, paving the way to the full elimination of this toxic product. In this context, it won't be possible to go back to endosulfan again. The second element is the training that has involved a large number of farmers, TOTs, policy- and decision-makers. The interviews have highlighted that the same positive attitude towards green technology will be used in other projects. They expressed the firm intention that they don't want to go back to chemicals. Last but not least, at the end of the project, the local agriculture authorities will provide the financial support to monitor the sustainability of this project in the long term and, if necessary, provide corrections.

The project has focused very well on phasing out endosulfan, but little has been done to expand and include other toxic chemicals. In this context, the scalability and replicability of the project to other chemicals (not endosulfan) has not been considered.

4.3.13 Progress to Impact

The major impact of this project was the permanent elimination of endosulfan, a toxic pesticide, across China. Before the project, the cotton farmers in China were spreading 2,850 tons per year of endosulfan into the environment; after the project, none. Every year large numbers of small farm households, circa 15 million of them, entered directly into contact with this pesticide (e.g. preparation of pesticide, distribution in the cotton fields, and work operations in the contaminated fields), and many more millions indirectly through residuals of this products in the water, soil, air, and food.

Production, distribution, commercialization, and utilization of this pesticide were definitively forbidden. On the other hand, the project successfully tested new modern biological tools and

sustainable techniques that efficiently and effectively replaced this toxic chemical without the negative effects caused by pesticides. The potential key biological control and alternative technologies assessed in the fields were: NPV formulations, insect sex pheromone trapping or mating disruption formulations, olfactory trapping, and bacon wasps (insect pest parasite).

The project's medium- and long-term impacts were already extensively discussed in section 4.3.12 for its important catalytic role and its multiple-replication effect. As mentioned before, the project has a potentially wide impact. It can produce relevant changes in environmental status. Such changes include a healthier environment, reduction of toxic residuals in food produced for human consumption, increased biodiversity, increased water, soil, and air quality, and better health condition of farmers.

Finally, the project's contribution toward implementing the Stockholm Convention of Persistent Organic Pollutants, the most important for the GEF, is significant. Also, the project had a significant impact on establishing the National Food Safety Standard—Maximum Residue Limits for Pesticides which includes the residue of endosulfan in the food for human consumption.

5. Main Findings, Conclusions, Recommendations & Lessons

5.1 Main Findings

The main findings of the TE are divided into four sub-findings: relevance, effectiveness, efficiency, and sustainability.

Relevance:

A) The stakeholders interviewed highlighted the project's positive impact on the environment, farmers, and Chinese society. Furthermore, this project was highly relevant for its contribution to reducing POPs and eliminating endosulfan in China.

B) The Phase-out of Endosulfan in China project was relevant in terms of stakeholders' engagement, methodology used, and approach to solving the problem. The approach was holistic and well-organized, considering three levels of relevant interventions: policy level, stakeholder level, and educational/training level.

C) The project aligned with the GEF-6 Chemicals and Waste Focal Area Strategy. In particular, this project is relevant and supports Strategy Objectives 1 and 2 of GEF-6.

D) No doubt that the project is strategically relevant for the Stockholm Convention on Persistent Organic Pollutants and Chinese national priorities toward reducing pesticide use and prioritizing non-chemical measures including biological control. It is also relevant for the Agenda 2030, the SDG Goal #12, and UNDP Strategic Plan.

Effectiveness:

E) The project has effectively and efficiently contributed to the achievement of the project's objectives. In particular, the project coordinated efforts with other initiatives run by MEE, FECO, and UNDP CO to prepare the Monitoring System and contributed to tracking the selling and buying of endosulfan and other restricted pesticides.

F) Furthermore, the project has efficiently supported the MEE/FECO and local authorities in implementing the local POPs plan, the publication of the National Food Safety Standard, the Maximum Residue Limits for pesticides, and contributed to China's Strictly Restricted List of Toxic Chemicals.

G) The project also efficiently provided technical support to the MEE/FECO for policy gaps, data collection, and analysis. It created the Pesticide Digital Supervision and Management Platform for the registration of pesticides dealers. Also, it installed the Pests Automatic Monitoring System and the Field Microclimate Monitoring System.

H) Training was organized for TOTs, farmers, policy- and decision-makers. Pest monitoring systems developed to anticipate pest impacts better and improve efficiency of information dissemination to support farmers in using new alternative technologies.

Efficiency:

I) The project efficiently promoted collaboration with MEE/FECO, MARA, MOF, relevant ministries, and UNDP. This collaboration was also reflected at the local level and included local cooperatives of farmers, which helped to mobilize a high number of people in a relatively short time.

J) Thus, the collaboration with the academic sector was pointed out several times during the interviews with institutional stakeholders, which avoided the unnecessary duplication of interventions.

K) Inefficiencies were observed with the exclusion of tobacco farmers from the project due to a late survey report. The survey highlighted that the tobacco sector did not use endosulfan.

L) Inefficiencies were also observed in the limited collaboration with the private chemical industry and the concrete risk that the industry will develop chemical alternatives to endosulfan.

M) Inefficiency was also observed in the gender imbalance during the training of farmers.

Sustainability:

N) The project is environmentally sustainable. There are no outputs or activities of this project that may pose any environmental threats. There are no major environmental factors that may negatively affect the sustainability of the Phase-Out of Endosulfan in China.

O) On the other hand, there is moderate socio-economic sustainability due to unbalance involvement of women farmers in the development of project activities such as farmers' trainings.

5.2 Conclusions

Two different pictures highlighted gender equality and women's empowerment. The first picture highlighted the policy- and decision-makers, TOTs, and other specific training and capacity-building courses. In this case, the number of women trained during the activities is considered relatively high for the agriculture sector. Specific training courses such as the Endosulfan Gender mainstreaming were designed specifically for women and the percentage participating was very high.

The second picture highlighted the training of farmers and women's empowerment. Thanks to the PMU determination and good management capabilities, the overall number of female farmers trained was relatively high. However, the number is not balanced; a gap with males clearly exists, and it is considerable.

Throughout the duration of this project, there was an evolution in the attention dedicated to women. The number of women trained has increased and reached its peak toward the end of the project. This trend is somehow in line with the attention that the Central Government and media in China dedicated to gender equality and women's empowerment.

The project has had a sustainable and effective impact on reducing environmental risks by completely eliminating endosulfan. It collaborated closely with ministries and contributed to developing an innovative regulatory system that controls the market of chemicals and poses strict limits to the residuals of pesticides in the food.

It also achieved its specific objective by strengthening national capacity to develop alternative, green, and sustainable tools. The biological control and alternative technology were proposed, tested, and now used in the cotton fields in China.

The project was successful in leveraging co-financing. The expenditures were audited by an independent body and approved. The TE has not identified any financial issues. However, the COVID-19 outbreak caused a several-month delay in technical and financial operations. It required the extension of the project's deadline. The 7-month extension did not require an extra disbursement (no additional financing was requested to finalize the remaining activities).

The level of satisfaction with the project expressed by the stakeholders interviewed during the TE was high. Stakeholders reported that the level of achievements was high with only minor issues. The project accomplished all planned activities within the project's duration, which was 48 operational months plus 7 months of extension.

The reports indicated that the project achieved its objective and outcomes without significant delay. Based on the review and assessment and considering the complex and articulate structure of this project and the difficulties posed by the COVID-19 restrictions, **the project can be considered completed with success**.

5.3 Recommendations

Table 5. Recommendations table

# Rec	TE Recommendation	Entity responsible	Time frame
A	Category A: Design		
A1	A Theory of Change (ToC) should be included in the design of new initiatives. A ToC supports the designers, the developers, and the evaluators to	UNDP CO or project writer(s)	Not necessary for this project. It is

	understand the complex architecture of the project. The team in charge of writing the project must prepare a detailed ToC.		necessary for future projects.
A2	The project's scope included the tobacco sector. However, after the survey investigation, it was found that tobacco producers do not use endosulfan. This problem should be spotted before project design and implementation. The recommendation is a feasibility study or a pre-analysis of the sectors.	PMU and UNDP CO	At the earliest or at the next project.
B	Category B: Promotion of environment and gender		
B1	This project has a positive impact on the environment but the impact on climate change mitigation and adaptation is unclear. Recommendations are to estimate GHG emissions reduction and adopt a strategy to mitigate the impact of climate change on the project sites.	UNDP CO and PMU	At the earliest and before the end of the project (December 2021)
B2	The gender issue is important for the development of modern Chinese society. For this reason, the project should take this topic seriously. The recommendation is to find solutions to enhance gender equality and women's empowerment within the project.	UNDP CO and PMU	At the earliest or at the next project.
C	Category C: Lessons and exit strategy		
C1	The project should prepare a well-written lesson learned report. This important document will be useful for the PMU and for similar projects in the country and abroad.	UNDP CO PMU	At the earliest or before the end of the project (December 2021)
C2	The project should hold a workshop or prepare a document about a comprehensive exit strategy to ensure the long-time sustainability of results.	PMU and UNDP CO	At the earliest or before the end of the project (December 2021)

5.4 Lessons Learned

The TE identifies the following lessons learned that can be applied to future UNDP-supported GEF-financed interventions in the focal area of 'Chemicals':

1) Lesson learned: Modern training and capacity building.

This project trained and conducted capacity building for a large pool of people even though COVID-19 restrictions limited travel and social activities. In some cases, the project was able to

train more people than planned. Such was the case, for example, of training policymakers (+167% of end target) and farmers (+250% of end target). In addition, the project was able to reduce the number of courses and increase the number of people per course without losing in quality of education/training. It was possible to reach this ambitious goal by a) well-organized training activities, b) highly qualified consultants/teachers/trainers, and c) applying modern pedagogical educational tools.

2) Lesson learned – Efficient and effective coordination staff.

A strategy to promote the GEF additionalities (environment, policy, governance, etc.) is based on efficient and effective coordination among stakeholders, support from country and local offices, and the use of qualified consultants. This well-organized staff was the key to success against the COVID-19 outbreak. Instead of a full stop of the project, the staff moved forward and, among many things, promoted the concept of GEF foundation and initiatives and supported existing national efforts for environmental benefits.

3) Lesson learned – Replicability

GEF should consider replicating this project across the country with the modalities discussed in this document. The knowledge generated, the people trained, the positive impact on stakeholders are valuable resources that should be capitalized and used again. For this reason, future GEF projects should consider the human capital resources that this project has generated and pass them on to other similar projects. This will save time, resources, and enhance the capacity of already well-trained people.

6. Annexes

1) TE Terms of reference
2) List of persons interviewed
3) List of documents reviewed
4) Evaluation question matrix (evaluation criteria with key questions, indicators, sources of data, and methodology)
5) TE Rating scales
6) Signed evaluation consultant Agreement and UNEG Code of Conduct form
7) Signed TE Report clearance form
8) Annexed in a separate file: TE Audit Trail
9) Annexed in a separate file: relevant terminal GEF Core Indicators or Tracking Tools
10) Annexed in a separate file: Confirmed Sources of Co-financing table
11) Annexed in a separate file: Management Response Table

Annex 1 - TE Terms of Reference

Terminal Evaluation International Consultant

Background

Please provide Offeror's Letter and proposal together with your CV and cover letter (if applicable) in one single file while submitting application. And please note that the system will not accept the uploading of more than one document so please merge or scan all your documents into one prior to uploading. Below is the download link of Offeror's Letter.

Offeror's letter download link:

https://drive.google.com/file/d/1GYP7hMPX3qJAbiy7KZppiWqR4JdKFYv4/view?usp=sharing

In accordance with UNDP and GEF M&E policies and procedures, all full- and medium-sized UNDP-supported GEF-financed projects are required to undergo a Terminal Evaluation (TE) at the end of the project. This Terms of Reference (ToR) sets out the expectations for the TE of the **medium-sized project** titled ***Phase-out of Endosulfan in China*** (PIMS *#6054*) implemented through the *FECO/Ministry of Ecology and Environment of China.* The project started on 9th May 2017 and is in its 4th year of implementation. The TE process must follow the guidance outlined in the document 'Guidance For Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects'

Project Description

The four-year project will help China to fulfill the requirements of the Stockholm Convention. The project aims to address endosulfan phase out by biological control and alternative technologies in cotton pest management in China. The project will achieve this project objective through demonstration of biological control and alternative technologies in pilot locations that will lead to subsequent complete phase-out of endosulfan in China through the implementation of a national replication programme prepared under this project. The project, as outlined, is structured with four components:

Component 1 will strengthen institutional and management capacities to ensure efficient and effective project management.

Component 2 will develop and demonstrate integrated technical models of biological control and alternative technologies.

Component 3 covers the preparation of a national replication programme and work plan, when implemented, will achieve complete phase out of endosulfan in China.

Component 4 supports the monitoring and evaluation of the project and dissemination of experience and lessons learned, something that is seen as useful for other developing countries dealing with the issue globally. In addition, project management capacity at national and the demonstration locations will be strengthened to achieve implementation effectiveness and efficiency.

Project period:	48 months
Allocated resources from GEF:	US$1,980,000

Duties and Responsibilities

TE Purpose

The TE report will assess the achievement of project results against what was expected to be achieved, and draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming. The TE report promotes accountability and transparency, and assesses the extent of project accomplishments.

The TE process must follow a collaborative and participatory approach ensuring close engagement with key participants including the Commissioning Unit (usually the UNDP Country Office), RTAs, Regional M&E Advisors, Country Office M&E Focal Points and Programme Officers, Government counterparts including the GEF Operational Focal Point (OFP), the Nature, Climate and Energy Vertical Fund Directorate, and other key stakeholders.

DUTIES AND RESPONSIBILITIES

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects. The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

TE Approach & Methodology

The TE must provide evidence-based information that is credible, reliable and useful.

The TE team will review all relevant sources of information including documents prepared during the preparation phase (i.e. PIF, UNDP Initiation Plan, UNDP Social and Environmental Screening Procedure/SESP) the Project Document, project reports including annual PIRs, project budget revisions, lesson learned reports, national strategic and legal documents, and any other materials that the team considers useful for this evidence-based evaluation. The TE team will review the baseline and midterm GEF focal area Core Indicators/Tracking Tools submitted to the GEF at the CEO endorsement and midterm stages and the terminal Core Indicators/Tracking Tools that must be completed before the TE field mission begins.

The TE team is expected to follow a participatory and consultative approach ensuring close engagement with the Project Team, government counterparts (the GEF Operational Focal Point), Implementing Partners, the UNDP Country Office(s), the Regional Technical Advisors, direct beneficiaries and other stakeholders.

Engagement of stakeholders is vital to a successful TE[1]. Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to Implementing Partner, Local PMO, executing agencies, senior officials and task team/component leaders, key experts and consultants in the subject area, Project Board, project beneficiaries, academia, local government and CSOs, etc. If a data collection/field mission is not possible, then remote interviews may be undertaken through telephone or online (skype, zoom etc.). International consultant can work remotely with national evaluator who will provide support in the field, if it is safe for them to operate and travel. No stakeholders, consultants or UNDP staff should be put in harm's way and safety is the key priority.

The specific design and methodology for the TE should emerge from consultations between the TE team and the above-mentioned parties regarding what is appropriate and feasible for meeting the TE purpose and objectives and answering the evaluation questions, given limitations of budget, time and data. The TE team must, however, use gender-responsive methodologies and tools and ensure that gender equality and women's empowerment, as well as other cross-cutting issues and SDGs are incorporated into the TE report.

The final methodological approach including interview schedule, field visits and data to be used in the evaluation should be clearly outlined in the inception report and be fully discussed and agreed between UNDP, stakeholders and the TE team.

The final TE report should describe the full TE approach taken and the rationale for the approach making explicit the underlying assumptions, challenges, strengths and weaknesses about the methods and approach of the evaluation.

As of 11 March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic as the new coronavirus rapidly spread to all regions of the world. Travel to the country has been restricted since 2020 and travel in the country is also restricted. If it is not possible to travel to or within the country for the TE mission, then the TE team should develop a methodology that takes this into account the conduct of the TE virtually and remotely, including the use of remote interview methods and extended desk reviews, data analysis, surveys and evaluation questionnaires. This should be detailed in the TE Inception Report and agreed with the Commissioning Unit.

If all or part of the TE is to be carried out virtually, then consideration should be taken for stakeholder availability, ability or willingness to be interviewed remotely. In addition, their accessibility to the internet/computer may be an issue as many government and national counterparts may be working from home. These limitations must be reflected in the final TE report.

If a data collection/field mission is not possible, then remote interviews may be undertaken through telephone or online (skype, zoom etc.). International consultants can work remotely with national evaluator support in the field if it is safe for them to operate and travel. No stakeholders, consultants or UNDP staff should be put in harm's way and safety is the key priority.

A short validation mission may be considered, if it is confirmed to be safe for staff, consultants, stakeholders and if such a mission is possible within the TE schedule. Equally, qualified and independent national consultants can be hired to undertake the TE and interviews in country as long as it is safe to do so.

[1] (link to stakeholder engagement in UNDP Eval Guidelines?)

The TE will assess project performance against expectations set out in the project's Logical Framework/Results Framework (see TOR Annex A). The TE will assess results according to the criteria outlined in the Guidance for TEs of UNDP-supported GEF-financed Projects.

The Findings section of the TE report will cover the topics listed below.

A full outline of the TE report's content is provided in ToR Annex C.

The asterisk "(*)" indicates criteria for which a rating is required.

Findings

Project Design/Formulation

- National priorities and country driven-ness
- Theory of Change
- Gender equality and women's empowerment
- Social and Environmental Safeguards
- Analysis of Results Framework: project logic and strategy, indicators
- Assumptions and Risks
- Lessons from other relevant projects (e.g. same focal area) incorporated into project design
- Planned stakeholder participation
- Linkages between project and other interventions within the sector
- Management arrangements

Project Implementation

- Adaptive management (changes to the project design and project outputs during implementation)
- Actual stakeholder participation and partnership arrangements
- Project Finance and Co-finance
- Monitoring & Evaluation: design at entry (*), implementation (*), and overall assessment of M&E (*)

- Implementing Agency (UNDP) (*) and Executing Agency (*), overall project oversight/implementation and execution (*)
- Risk Management, including Social and Environmental Standards

Project Results

- Assess 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
- Relevance (*), Effectiveness (*), Efficiency (*) and overall project outcome (*)
- Sustainability: financial (*) , socio-political (*), institutional framework and governance (*), environmental (*), overall likelihood of sustainability (*)
- Country ownership
- Gender equality and women's empowerment
- Cross-cutting issues (poverty alleviation, improved governance, climate change mitigation and adaptation, disaster prevention and recovery, human rights, capacity development, South-South cooperation, knowledge management, volunteerism, etc., as relevant)
- GEF Additionality
- Catalytic Role / Replication Effect
- Progress to impact

Main Findings, Conclusions, Recommendations and Lessons Learned

- The TE team will include a summary of the main findings of the TE report. Findings should be presented as statements of fact that are based on analysis of the data.
- The section on conclusions will be written in light of the findings. Conclusions should be comprehensive and balanced statements that are well substantiated by evidence and logically connected to the TE findings. They should highlight the strengths, weaknesses and results of the project, respond to key evaluation questions and provide insights into the identification of and/or solutions to important problems or issues pertinent to project beneficiaries, UNDP and the GEF, including issues in relation to gender equality and women's empowerment.
- Recommendations should provide concrete, practical, feasible and targeted recommendations directed to the intended users of the evaluation about what actions to take and decisions to make. The recommendations should be specifically supported by the evidence and linked to the findings and conclusions around key questions addressed by the evaluation.
- The TE report should also include lessons that can be taken from the evaluation, including best and worst practices in addressing issues relating to relevance, performance and success that can provide knowledge gained from the particular circumstance (programmatic and evaluation methods used, partnerships, financial leveraging, etc.) that are applicable to other GEF and UNDP interventions. When possible, the TE team should include examples of good practices in project design and implementation.
- It is important for the conclusions, recommendations and lessons learned of the TE report to include results related to gender equality and empowerment of women.

The TE report will include an Evaluation Ratings Table, as shown in the ToR Annex.

Competencies

Expected Outputs and Deliverables

The TE consultant/team shall prepare and submit:

- **TE Inception Report**: TE team clarifies objectives and methods of the TE no later than 2 weeks before the TE mission. TE team submits the Inception Report to the Commissioning Unit and project management. Approximate due date: *15 July 2021*
- **Presentation**: TE team presents initial findings to project management and the Commissioning Unit at the end of the TE mission. Approximate due date: *1 August 2021*
- **Draft TE Report**: TE team submits full draft report with annexes within 3 weeks of the end of the TE mission. Approximate due date: *20 August 2021*
- **Final TE Report*** and Audit Trail: TE team submits revised report, with Audit Trail detailing how all received comments have (and have not) been addressed in the final TE report, to the Commissioning Unit within 1 week of receiving UNDP comments on draft. Approximate due date: *15 Septembert 2021*

*The final TE report must be in English. If applicable, the Commissioning Unit may choose to arrange for a translation of the report into a language more widely shared by national stakeholders.

All final TE reports will be quality assessed by the UNDP Independent Evaluation Office (IEO). Details of the IEO's quality assessment of decentralized evaluations can be found in Section 6 of the UNDP Evaluation Guidelines.[1]

[1] Access at: http://web.undp.org/evaluation/guideline/section-6.shtml

TE Arrangements

The principal responsibility for managing the TE resides with the Commissioning Unit. The Commissioning Unit for this project's TE is **UNDP Country Office in China**.

The Commissioning Unit will contract the consultants and ensure the timely provision of per diems and travel arrangements within the country for the TE team. The Project Team will be responsible for liaising with the TE team to provide all relevant documents, set up stakeholder interviews, and arrange field visits.

Duration of the Work

The total duration of the TE will be approximately 30 working days over a time period of **(12 of weeks) starting 8 July** and shall not exceed five months from when the TE team is hired. The tentative TE timeframe is as follows:

- ***15 June**:* Application closes
- ***16-20 June**:* Selection of TE Team
- ***7 July**:* Prep the TE team (handover of project documents)
- ***8 July**: 5* days: Document review and preparing TE Inception Report
- ***15 July**: 3* days: Finalization and Validation of TE Inception Report- latest start of TE mission
- ***22 July**: 7* days: TE mission: stakeholder meetings, interviews, field visits
- ***30 July**:* Mission wrap-up meeting & presentation of initial findings- earliest end of TE mission
- ***1 August**: 10* days: Preparation of draft TE report
- ***20 August**:* Circulation of draft TE report for comments
- ***27 August**: 3* days: Incorporation of comments on draft TE report into Audit Trail & finalization of TE report
- ***28 August**:* Preparation & Issue of Management Response
- ***15 September**:* Expected date of full TE completion

The expected date start date of contract is **25 June 2021**

Required Skills and Experience

A team of **two independent evaluators** will conduct the TE – one team leader with experience and exposure to projects and evaluations in other regions) and one team expert, usually from the country of the project. The team leader will be responsible for the overall design and writing of the TE report. The

team expert will assess emerging trends with respect to regulatory frameworks, budget allocations, capacity building, work with the Project Team in developing the TE itinerary.

The evaluator(s) cannot have participated in the project preparation, formulation and/or implementation (including the writing of the project document), must not have a conflict of interest with the project's related activities.

The selection of evaluators will be aimed at maximizing the overall "team" qualities in the following areas:

Education

- Master's degree in Chemical science, Agricultural Technology and Management, or other closely related field.

Experience

- Relevant experience with results-based management evaluation methodologies.
- Experience applying SMART indicators and reconstructing or validating baseline scenarios.
- Competence in adaptive management, as applied to Hazardous chemicals or Persistent Organic Pollutants (POPs).
- Experience in evaluating projects.
- Experience working in Asia.
- Experience in relevant technical areas for at least 8 years.
- Demonstrated understanding of issues related to gender and Persistent Organic Pollutants (POPs).
- Experience in gender responsive evaluation and analysis.
- Excellent communication skills.
- Demonstrable analytical skills.
- Project evaluation/review experience within United Nations system will be considered an asset.
- Experience with implementing evaluations remotely will be considered an asset.

Language

- Fluency in written and spoken English.

Evaluator Ethics

The TE team will be held to the highest ethical standards and is required to sign a code of conduct upon acceptance of the assignment. This evaluation will be conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluation'. The evaluator must safeguard the rights and confidentiality of information providers, interviewees and stakeholders through measures to ensure compliance with legal and other relevant codes governing collection of data and reporting on data. The evaluator must also ensure security of collected information before and after the evaluation and protocols to ensure anonymity and confidentiality of sources of information where that is expected. The information knowledge and data gathered in the evaluation process must also be solely used for the evaluation and not for other uses without the express authorization of UNDP and partners.

Payment Schedule

- 20% payment upon satisfactory delivery of the final TE Inception Report and approval by the Commissioning Unit
- 40% payment upon satisfactory delivery of the draft TE report to the Commissioning Unit
- 40% payment upon satisfactory delivery of the final TE report and approval by the Commissioning Unit and RTA (via signatures on the TE Report Clearance Form) and delivery of completed TE Audit Trail

Criteria for issuing the final payment of 40%

- The final TE report includes all requirements outlined in the TE TOR and is in accordance with the TE guidance.

- The final TE report is clearly written, logically organized, and is specific for this project (i.e. text has not been cut & pasted from other MTR reports).
- The Audit Trail includes responses to and justification for each comment listed.

In line with the UNDP's financial regulations, when determined by the Commissioning Unit and/or the consultant that a deliverable or service cannot be satisfactorily completed due to the impact of COVID-19 and limitations to the TE, that deliverable or service will not be paid.

Due to the current COVID-19 situation and its implications, a partial payment may be considered if the consultant invested time towards the deliverable but was unable to complete to circumstances beyond his/her control.

APPLICATION PROCESS

1. **Scope of Price Proposal and Schedule of Payments**

Financial Proposal:

- Financial proposals must be expressed in a lump-sum for the total duration of the contract including the professional fees, living allowances etc.; travel expenses will be reimbursed based on actual cost.
- The lump sum is fixed regardless of changes in the cost components.

1. **Recommended Presentation of Proposal**
2. **Letter of Confirmation of Interest and Availability** using the template provided by UNDP;
3. **CV** and a **Personal History Form** (P11 form);
4. **Brief description of approach to work/technical proposal** of why the individual considers him/herself as the most suitable for the assignment, and a proposed methodology on how they will approach and complete the assignment; (max 1 page)
5. **Financial Proposal** that indicates the all-inclusive fixed total contract price and all other travel related costs (such as flight ticket, per diem, etc.), supported by a breakdown of costs, as per template attached to the Letter of Confirmation of Interest template. If an applicant is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under Reimbursable Loan Agreement (RLA), the applicant must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP.

All application materials should be submitted online by **15 June 2021**. Incomplete applications will be excluded from further consideration.

1. **Criteria for Selection of the Best Offer**

Only those applications which are responsive and compliant will be evaluated. Offers will be evaluated according to the Combined Scoring method – where the educational background and experience on similar assignments will be weighted at 70% and the price proposal will weigh as 30% of the total scoring. The applicant receiving the Highest Combined Score that has also accepted UNDP's General Terms and Conditions will be awarded the contract.

1. **Annexes to the TE ToR (Download Here)**

- ToR Annex A: Project Logical/Results Framework
- ToR Annex B: Project Information Package to be reviewed by TE team
- ToR Annex C: Content of the TE report
- ToR Annex D: Evaluation Criteria Matrix template
- ToR Annex E: UNEG Code of Conduct for Evaluators
- ToR Annex F: TE Rating Scales and TE Ratings Table
- ToR Annex G: TE Report Clearance Form
- ToR Annex H: TE Audit Trail template

Inception Report Content (Download Here)

Management Response Template (Download Here)
Please provide Offeror's Letter and proposal together with your CV and cover letter (if applicable) in one single file while submitting application. And please note that the system will not accept the uploading of more than one document so please merge or scan all your documents into one prior to uploading. Below is the download link of Offeror's Letter.
Offeror's letter download link:
https://drive.google.com/file/d/1GYP7hMPX3qJAbiy7KZppiWqR4JdKFYv4/view?usp=sharing

Annex 2 - List of persons interviewed

Individual interviews

- Wang Jingjing – Programme Assistant, UNDP
- Zhang Yang - Project Manager, Foreign Environmental Cooperation Center (FECO), Ministry of Ecology and Environment of China
- Tang Rui - Endosulfan replacement technology screening (Research Center for Resource Insects and Biotechnology, Institute of Zoology, Guangdong Academy of Science)
- Han Qingli - Compliance of the Tobacco Industry (Southwest Forestry University)
- Ma Zhihong - Analysis of endosulfan residues in the cotton field (Beijing Agricultural Quality Standard and Testing Technology Research Center, BATRC)
- Huang Jian - Development of prediction model for cotton bollworm (Urumqi Institute of Desert Meteorology, China Meteorological Administration, UIDM CMA)
- Liu Binghui - Local project manager (Department of agriculture and rural affairs of Xinjiang Uygur Autonomous Region)
- Ma Jiangfeng - Local project mamager (Department of Agriculture and rural affairs of Xinjiang Production and Construction Corps)
- Yang Xiaohong - Agricultural technician (Agricultural Technology Center, Beiquan Town, Shihezi City, ATCS)
- Gao Yongjian - Agricultural technician (Shawan Agricultural Technology Extension Center, SATEC)

- Wang Zhonghua - Cotton farmer (Qianshen town, Wusi city)
- Ma Jinying - Cotton farmer (Hutubi city)
- Cao Aocheng - National consultant in project implementation (Institute of Plant Protection, Chinese Academy of Agricultural Sciences, IPP CAAS)
- Guo Rong - Screening and national promotion of endosulfan alternative technologies (National Agricultural Technology Extension Service Center, NATESC)
- Huang Jiangtao - Cotton farmer (Hutubi city)
- He Hongtao - Cotton farmer (Hutubi city)
- Wang Shengxue - Cotton fammer (Shawan city)
- Wang Yongwen - Cotton fammer (Shawan city)

Group interviews

Group I

3 people from Xinjiang province

Yang Dong, Agricultural technologist from Plant protection station, Xinjiang Province.

Yu Lang, Local Project Manager, Xinjiang Province

Zhang Li, Agricultural technologist in Urumqi city.

Group II

3 people from Xinjiang province

Li Hong, manager in the agricultural demonstration zone in Shawan city

Ding Lili, trainer in agricultural practice in Shawan city

Tian Ying, cotton farmer in Shawan city

Annex 3 - List of documents reviewed

- Project Progress Report, PPR
  - 2021
- Annual Project Report, APR
  - 2018
  - 2019
  - 2020
- Project Implementation Review
  - 2018
  - 2019
  - 2020
  - 2021
- GEF UNDP Annual Portfolio Indicators
  - 2019
  - 2020
- Annual Work Plan
  - 2021
- Two Year Work Plan
  - 2018-2019
  - 2019-2020

2020-2021

- Budget revision

  2019-2020

  2020-2021

  2021 Final

- Annual Review Meetings

  2018

  2019

  2019 MTR

  2020

- Mission reports

  2018

  2019

  2020

- Project Document, ProDoc
- CEO Endorsement
- Approved project extension
- Co-financing documents
- Final workshop with all presentations
- Gender Mainstreaming Training
- Audit Report
- Communication and dissemination material in English and Chinese
- Training material
- Status Report on the Performance of Endosulfan Products of Pestcides in China's Cotton Planting Industry, 2020
- Endosulfan Replacement Technology Screening, Testing, and IPM Model Development Consulting Services. Report on Green IPM Model for Lifetime Management of Cotton with Endosulfan Alternatives, 2019
- Financial reports

  2017

2018

2019

2020

2021

Annex 4 - Evaluation Question Matrix

Key evaluation questions	Indicators	Sources of data	Methodology
Criterion of **relevance**: how does the project relate to the main objectives of the GEF Focal area, and to the environment and development priorities a the local, regional, and national level?			
Was the project aligned with the national development priorities?	Extent to which the project's objectives were in line with the national development priorities.	ProDoc, PIRs, National policies and programme, Project staff, UNDP Officers, Public Officers, NGOs	- Desk review - Individual interviews - Group interviews
Was the implementation of the project responsive to political, legal, economic, institutional, etc., changes in the country?	Extent to which the project was appropriately responsive to political, legal, economic, institutional, etc., changes in the country.	ProDoc, PIRs, National policies and programme, Project staff, UNDP officers, National Officers of GoL, NGOs	- Desk review - Individual interviews - Group interviews
Was the project formulated in accordance to national and local strategies to advance gender equality?	Extent to which the project was formulated according to national and local strategies to advance gender equality.	ProDoc, PIRs, National policies and programme, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Was the project in line with the UNDP Strategic Plan, CPD, UNDAF, United Nations Sustainable Development Cooperation Framework (UNSDCF), SDGs and GEF strategic programming?	Extent to which the project was in line with the UNDP Strategic Plan, CPD, UNDAF, United Nations Sustainable Development Cooperation Framework (UNSDCF), SDGs and GEF strategic programming.	ProDoc, PIRs, UNDP Strategic Plan, CPD, UNDAF, United Nations Sustainable Development Cooperation Framework (UNSDCF), SDGs and GEF strategic programming	- Desk review - Individual interviews - Group interviews
Did the project contribute to the Theory of Change for the relevant country programme outcome?	Extent to which the project contributed to the Theory of Change for the relevant country programme outcome.	ProDoc, PIRs, CPD, UNDP Officers	- Desk review - Individual interviews - Group interviews
Did project stakeholders participate actively in the project?	Extent to which relevant stakeholders participated in the project .	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Extent to which the project was formulated according to the needs and interests of all targeted and/or relevant stakeholder groups	Extent to which the project was formulated according to the needs and interests of all targeted and/or relevant stakeholder groups.	ProDoc, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Extent to which the intervention is informed by needs and interests of diverse groups of stakeholders through in- depth consultation	Extent to which the intervention is informed by needs and interests of diverse groups of stakeholders through in- depth consultation.	Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Extent to which lessons learned from other relevant projects were considered in the project's design	Extent to which lessons learned from other relevant projects were considered in the project's design.	ProDoc, Project staff and UNDP Officers	- Desk review - Individual interviews - Group interviews
Criterion of **effectiveness**: to what extent have the expected outcomes and objectives of the project been achieved?			

Did the project contribute to the country programme outcomes and outputs, the SDGs, the UNDP Strategic Plan, GEF strategic priorities, and national development priorities?	Extent to which the project contributed to the country programme outcomes and outputs, the SDGs, the development priorities.	ProDoc, PIRs, other project documentation, UNDP Strategic Plan, CPD, UNDAF, United Nations Sustainable Development Cooperation Framework (UNSDCF), SDGs and GEF strategic programming	- Desk review - Individual interviews - Group interviews
Did the project achieve expected outputs and outcomes?	Extent to which the intervention achieved, or expects to achieve, results (outputs, outcomes and impacts, including global environmental benefits) taking into account the key factors that influenced the results.	- Desk review - Individual interviews - Group interviews	- Desk review - Individual interviews - Group interviews
What are the Areas in which the project had the greatest and fewest achievements? And what were the contributing factors?	Identification of areas in which the project had the greatest and fewest achievements; and the contributing factors.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
What were the constraining factors for project achievements?	Identification of constraining factors, such as socio-economic, political, and environmental risks; cultural and religious festivals, etc. and how they were overcome.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Were there alternative strategies that would have been more effective in achieving the project's objectives?	Identification of alternative strategies that would have been more effective in achieving the project's objectives	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Did the project contribute to gender equality, the empowerment of women and to the promotion of e a human rights-based approach?	Extent to which the project contributed to gender equality, the empowerment of women and to the promotion of a human rights-based approach	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Did the project incorporate gender responsive and human rights-based approach in its design and implementation?	Extent to which a gender responsive and human rights-based approach were incorporated in the design and implementation of the intervention.	ProDoc, PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Criterion of <u>efficiency</u>: Was the project implemented efficiently, in line with international and national norms and standards?			
Was the use of financial and human resources and strategic allocation of resources (funds, human resources, time, expertise, etc.) to achieve outcomes of efficient and economical?	Extent to which there was an efficient and economical use of financial and human resources and strategic allocation of resources (funds, human resources, time, expertise, etc.) to achieve outcomes	ProDoc, PIRs, National policies and programme, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Did the project achieved expected outcomes according to schedule, and as cost-effective as initially planned in the ProDoc?	Whether the project completed the planned activities and met or exceeded the expected outcomes in terms of achievement of global environmental and development objectives according to schedule, and as cost-effective as initially planned.	ProDoc, PIRs, National policies and programme, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews

Were resources at disposal of the project adequate for integrating gender equality and human rights in the project as an investment in short- term, medium-term and long- term benefits?	Provision of adequate resources for integrating gender equality and human rights in the project as an investment in short- term, medium- term and long-term benefits.	ProDoc, PIRs, Project Budget, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Did the allocation of resources to targeted groups took into account the need to prioritize those most marginalized?	Extent to which the allocation of resources to targeted groups took into account the need to prioritize those most marginalized.	ProDoc, PIRs, Project Budget, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Was the project extension necessary?	Extent to which a project extension could have been avoided (for cases where an extension was approved).	ProDoc, PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Was the project management structure as outlined in the project document efficient in generating the expected results?	Extent to which the project management structure as outlined in the project document was efficient in generating the expected results.	ProDoc, PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Were project funds and activities delivered in a timely manner?.	Extent to which project funds and activities were delivered in a timely manner.	ProDoc, PIRs, Project Budget, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Did M&E system in place ensure effective and efficient project management?	Extent to which M&E systems ensured effective and efficient project management.	ProDoc, PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Criterion of sustainability: To what extent are there financial, institutional, socio-political, and/or environmental risks to sustaining long-term project results?			
What is the likelihood that financial resources will be available once the GEF assistance ends to support the continuation of benefits (income generating activities, and trends that may indicate that it is likely that there will be adequate financial resources for sustaining project outcomes)?	Identification of the likelihood that financial resources will be available once the GEF assistance ends to support the continuation of benefits.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
What opportunities for financial sustainability exist?	Identification of opportunities for financial sustainability.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
What additional factors are needed to create an enabling environment for continued financing?	Identification of enabling factors.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Has there been the establishment of financial and economic instruments and mechanisms to ensure the ongoing flow of benefits once the GEF assistance ends (i.e. from the public and private sectors, income	Identification of financial and economic instruments to ensure the ongoing flow of benefits once the GEF assistance ends.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries, relevant public policies and programmes	- Desk review - Individual interviews - Group interviews

generating activities, and market transformations to promote the project's objectives)?			
Are there any social or political risks that can undermine the longevity of project outcomes?	Identification of social or political risks that can undermine the longevity of project outcomes.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained?	Identification of the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Do the various key stakeholders see that it is in their interest that the project benefits continue to flow?	Identification of stakeholders' interest and perception of it.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Is there sufficient public/ stakeholder awareness in support of the long-term objectives of the project?	Extent to which public/ stakeholder awareness in support of the long-term objectives of the project exist.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Are lessons learned being documented by the Project Team on a continual basis?	Identification of documentation of lessons learned.	PIRs, other project documentation, Project staff	- Desk review - Individual interviews - Group interviews
Are the project's successful aspects being transferred to appropriate parties, potential future beneficiaries, and others who could learn from the project and potentially replicate and/or scale it in the future?	Extent to which project's successful aspects of the project have been transferred to appropriate parties, potential future beneficiaries, and others for replication or upscaling.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Do the legal frameworks, policies, governance structures and processes pose any threat to the continuation of project benefits?	Identification of threats to the continuation of project benefits which derive from legal frameworks, policies, governance structures and processes	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Has the project put in place frameworks, policies, governance structures and processes that will create mechanisms for accountability, transparency, and technical knowledge transfer after the project's closure?	Extent to which project put in place frameworks, policies, governance structures and processes that will create mechanisms for accountability, transparency, and technical knowledge transfer after the project's closure.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
How has the project developed appropriate institutional capacity (systems, structures, staff, expertise, etc.) that will be self-sufficient after the project closure date?	Extent to which project developed appropriate institutional capacity that will be self-sufficient after the project closure date.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
How has the project identified and involved champions (i.e. individuals in government and civil society) who can promote sustainability of project outcomes?	Identification of champions who can promote sustainability of project outcomes.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Has the project achieved stakeholders' (including government stakeholders') consensus regarding	Identification of a project exit strategy.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs	- Desk review - Individual interviews - Group interviews

courses of action on project activities after the project's closure date?			
Does the project leadership have the ability to respond to future institutional and governance changes (i.e. foreseeable changes to local or national political leadership)?	Evidence around the project leadership to respond to future institutional and governance changes.	Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Individual interviews - Group interviews
Can the project strategies effectively be incorporated/mainstreamed into future planning?	Identification of incorporation of project strategies into future planning.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs	- Desk review - Individual interviews - Group interviews
Criterion of gender equality and women's empowerment: How did the project contribute to gender equality and women's empowerment?			
Has the project committed to ensuring gender equality and women's and girls' empowerment?	Identification of threats and activities for the full empowerment of women and girls.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Has the project committed to adopt and strengthen policies, enforceable legislation, and transformative actions for the promotion of gender equality and women's and girls' empowerment at all levels?	Identification of actions adopted by the project to enhance empowerment of women and girls.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Has the project committed to increasing transparency and equal participation in the budgeting process and promoting gender-responsive budgeting and tracking?	Extent to which equal participation has been included in the budgeting and tracking process.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Has the project committed to addressing challenges to women obtaining equal and active participation in domestic, regional, and national cotton and tobacco trade?	Extent to which women have been involved in the trade.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Impact: Are there indications that the project has contributed to, or enabled progress toward reduced environmental stress and/or improved ecological status?			
Are there environmental factors that could undermine the future flow of the project's environmental benefits?	Identification of environmental factors that could undermine the future flow of the project's environmental benefits.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Will certain activities in the project area pose a threat to the environmental sustainability of project outcomes?	Identification of threats and activities to the continuation of project benefits.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Has the project put in place frameworks or processes that will create mechanisms for ensuring a rights-based approach (e.g. human rights), capacity development, and poverty-environment nexus?	Extent to which the project put in place frameworks or processes that will create mechanisms for ensuring a rights-based approach (e.g. human rights), capacity development, and poverty-environment nexus.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews

Has the project considered disaster risk reduction and prevention and recovery from crisis mechanisms?	Extent to which the project has developed DRR and PRC mechanisms.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Does the project mitigate climate change?	Extent to which the project affects climate change.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews
Does the project adapt to climate change?	Extent to which the project has developed mechanisms to adapt to changes in the climate.	PIRs, other project documentation, Project staff, UNDP officers, Public Officers, NGOs, Beneficiaries	- Desk review - Individual interviews - Group interviews

Annex 5 - TE Rating scales

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

Ratings for M&E, IA & EA Execution and Assessment of Outcomes (Relevance, Effectiveness, Efficiency and Overall Project Outcome Rating)	Rating for Sustainability
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/o rmajor 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

The ratings will be derived from the findings described in the relevant section of the final TE report. However, the Overall Project Outcome rating will be calculated, with such calculation based on the ratings for relevance, effectiveness, and efficiency, of which relevance and effectiveness are critical.

The rating on relevance will determine whether the overall outcome rating will be in the unsatisfactory range (MU to HU = unsatisfactory range). If the relevance rating is in the unsatisfactory range, then the overall outcome will be in the unsatisfactory range as well. However, where the relevance rating is in the satisfactory range (HS to MS), the overall outcome rating could, depending on its effectiveness and efficiency rating, be either in the satisfactory range or in the unsatisfactory range. The overall outcome achievement rating cannot be higher than the effectiveness rating. The overall outcome rating cannot be higher than the average score of effectiveness and efficiency criteria.

Annex 6 - Signed UNEG Code of Conduct form

Independence entails the ability to evaluate without undue influence or pressure by any party (including the hiring unit) and providing evaluators with free access to information on the evaluation subject.
Independence provides legitimacy to and ensures an objective perspective on evaluations. An independent evaluation reduces the potential for conflicts of interest which might arise with self-reported ratings by those involved in the management of the project/programme being evaluated.
Independence is one of ten general principles for evaluations (together with Internationally agreed principles, goals and targets; Utility; Credibility; Impartiality; Ethics; Transparency; Human rights and gender equality; National evaluation capacities; and Professionalism).

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

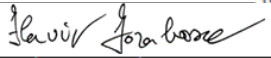
Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Evaluator: F. Forabosco

Name of Consultancy Organization (where relevant): _____

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

Signed at Hyllinge, Sweden (Place) on 22/10/2021 (Date)

Signature: 

Annex 7 - Signed TE Report Clearance form

TE Report Clearance Form

Terminal Evaluation Report for *(Project Title & UNDP PIMS ID)* **Reviewed and Cleared By:**

Commissioning Unit (M&E Focal Point)

Name: Qian Sun

Signature: _____ Date: 05-Jan-2022

Regional Technical Advisor (Nature, Climate and Energy)

Name: Anderson Alves

Signature: DocuSigned by: BA83D420D2784F7... Date: 09-Jan-2022