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Zhejiang Provincial Development and Reform Commission
(ZPDRC)

Terminal Evaluation of the project on:
“Greening the Logistics Industry in Zhejiang Province (GLIZP)”

Draft Terminal Evaluation Report

GEF Project ID: 5373
UNDP Project ID: 5238
Project ID: 00094664
Focal Area: Climate change
Evaluation timeframe: December 2020 – March 2021

March 2021

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Acronyms and abbreviations

| | |
|--------|---|
| APR | Annual Project Reports |
| AWP | Annual Work Plans |
| CPD | Country Programme Document |
| CTA | Chief Technical Advisor |
| GEF | Global Environment Facility |
| GHG | Greenhouse gas |
| GLIZP | Greening the Logistics Industry in Zhejiang Province |
| IP | Implementing partner |
| LSP | Logistics service providers |
| M&E | Monitoring and Evaluation |
| MTR | Mid-term Review |
| PIR | Project Implementation Review |
| PRF | Project Results Framework |
| ProDoc | Project Document |
| PSC | Project Steering Committee |
| TE | Terminal Evaluation |
| ToC | Theory of Change |
| ToRs | Terms of Reference |
| UNDP | United Nations Development Programme |
| UNEG | United Nations Evaluation Group |
| ZPDRC | Zhejiang Provincial Development and Reform Commission |

1. Executive Summary

Table 1. Project information table

| Project details | | Project milestones | |
|---|--|--------------------------------------|-------------------|
| Project Title | Greening the Logistics Industry in Zhejiang Province (GLIZP) | PIF Approval Date: | 21 March 2014 |
| UNDP Project ID (PIMS #): | 5238 | CEO Endorsement Date: | 15 November 2016 |
| GEF Project ID: | 5373 | ProDoc Signature Date: | 3 January 2017 |
| UNDP Atlas Business Unit, Award ID, Project ID: | Award ID: 00087743 Project ID: 00094664 | Date Project Manager hired: | 26 September 2017 |
| Country/Countries: | People's Republic of China | Inception Workshop Date: | 24 March 2017 |
| Region: | Asia-Pacific | Mid-Term Review Completion Date: | 18 August 2019 |
| Focal Area: | Climate change mitigation | Terminal Evaluation Completion Date: | 23 March 2021 |
| GEF Operational Programme or Strategic Priorities/Objectives: | CCM-2. Outcome 2.1. CCM-4. Outcome 4.1. | Planned Operational Closure Date: | 2 January 2021 |
| Trust Fund: | GEF Trust Fund (GEF TF) | | |
| Implementing Partner (GEF Executing Entity): | Zhejiang Provincial Development and Reform Commission (ZPDRC) | | |
| NGOs/CBOs involvement: | Consultations | | |
| Private sector involvement: | Beneficiaries | | |
| Geospatial coordinates of project sites: | Fuyang Hangzhou Transfer Logistics Base Co., Ltd. Geospatial coordinates:120.032272,30.020674 Zhejiang Fuyang Port International Logistics Port Co., Ltd. Geospatial coordinates:120.081859,30.070821 | | |
| Financial information* | | | |
| PDF/PPG: | at approval (US\$M) | at PDF/PPG completion (US\$M) | |
| GEF PDF/PPG grants for project preparation: | 0.10 | 0.10 | |
| Co-financing for project preparation: | 0.00 | 0.00 | |
| Project | at CEO Endorsement (US\$M) | at TE (US\$M) | |
| [1] UNDP contribution: | 0.25 | 0.26 | |
| [2] Government: | 3.48 | 3.62 | |
| [3] Other multi-/bi-laterals: | 0.00 | 0.00 | |
| [4] Private Sector: | 8.40 | 17.10 | |
| [5] NGOs: | 0.00 | 0.00 | |
| [6] Total co-financing: | 12.13 | 20.98 | |
| [7] Total GEF funding: | 2.9137 | 2.87 | |
| [8] Total Project Funding [6 + 7] | 15.0437 | 23.85 | |

* Figures on cofinancing are best estimates that could be produced by the terminal evaluation. For a full discussion on cofinancing, please refer to section 4.2.3.

1.1. Project description

The project on “Greening the Logistics Industry in Zhejiang Province” aimed at improving the efficiency of the logistics industry in Zhejiang Province. According to the Project Document, the logistics sector in Zhejiang Province had experienced a rapid growth over the two previous decades, supported by large public investments in transport infrastructure. However, the pace of adoption of efficient technologies and practices by the industry had proceeded at a slower pace. As a result, the industry was characterized by low efficiency, high operational costs, and comparatively large environmental impacts.

The objective of the project was to promote the adoption of energy efficient, green logistics technologies and practices in the logistics industry in the Chinese province of Zhejiang. The ultimate goal of the project was to reduce greenhouse gas emissions attributable to the logistics industry and the transport sector in the province. The project’s strategy consisted of a barriers removal approach to address the major barriers preventing the adoption of green logistics technologies and practices.

The project’s interventions were organized in three components on: (1) policy and regulatory support aimed at removing policy and regulatory barriers, (2) demonstration of green logistics systems designed to remove barriers related to low levels of capacity, knowledge, skills, and cooperation among stakeholders in the logistics industry, and to increase the level of confidence on the feasibility of green logistics technologies and practices, and (3) capacity building and promotion of green logistic and systems, aimed at addressing the lack of access to information on the design, development, and operation of green logistics, and to contribute to the removal of the barrier related to low levels of capacity, knowledge, skills and cooperation among stakeholders.

The outcomes of the project were formulated as follows:

- **Outcome 1.** Established and enforced policy and regulations on the application and operation of green logistics systems in the logistics industry in Zhejiang Province;
- **Outcome 2.** Improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province; and,
- **Outcome 3.** Increased application and utilization of energy efficient materials management and physical distribution techniques, technologies and practices in the logistics and manufacturing industries in Zhejiang Province.

A detailed presentation of the project outcomes, outputs and activities is provided in Annex K.

The project received a grant from the Global Environment Facility (GEF) for USD 2,913,700 and committed to mobilize USD 12,130,000 in cofinancing resources, including:

- | | |
|--|---------------|
| • Zhejiang Provincial Government: | USD 1,300,000 |
| • Fuyang City Government: | USD 2,180,000 |
| • Fuyang Hangzhou Transfar Logistics Base Co., Ltd.: | USD 3,850,000 |
| • Zhejiang Fuyang Port International Co. Ltd. | USD 4,550,000 |
| • UNDP: | USD 250,000 |

Annex M provides a detailed overview of the project financing, including cofinancing sources and budget allocation across project components.

The project started on 3rd January 2017 with the signature of the Project Document and was operationally closed on 2nd February 2021.

1.2. Evaluation ratings table

The summary of the evaluation ratings is provided in Table 2, below. A complete discussion of the ratings is provided in section 4.

Table 2. Evaluation ratings table

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

1.3. Summary of findings and conclusions

The project was conceived to accelerate the adoption of green logistics technologies and practices by the logistics industry in Zhejiang Province. This evaluation found evidence of the relevance of this objective to China’s development and climate change priorities, to UNDP’s strategic priorities in the country, and to GEF’s strategy under the facility’s climate change focal area. This evaluation also concluded that the project was implemented efficiently, adhering to annual work plans, achieving satisfactory disbursement rates, and avoiding major time delays. Interviews with project stakeholders indicated that the project team was skilled and effective at implementing the project activities and resolving emerging issues. Effective partnerships with stakeholders were deemed central factors to the project’s results and success.

Throughout the evaluation, it was observed that monitoring and reporting were the most significant weakness of the project design and implementation. The project’s monitoring framework was found to have shortcomings that were not adequately identified and addressed during project implementation. Also, reporting processes, including the preparation by the project team of project reports and their review by UNDP, produced reports with substantial weaknesses.

The sustainability of the project outcomes was deemed likely by this evaluation. The evaluation found evidence, including through interviews with various stakeholders, that the transformation of the logistics industry in Zhejiang Province towards green technologies and practices is well underway and expected to persist. The project made meaningful contributions to this transformation and, through partnerships with stakeholders, these contributions are likely to have lasting effects.

1.4. Synthesis of lessons learned

- Partnerships with strong champions within the industry were a key success factor for the project in Zhejiang Province. Securing these partnerships during project preparation prevented delays during implementation and is an approach to be followed by other projects demonstrating new technologies under time constraints.
- Stakeholders noted that the project focused on a limited number of different types of logistics service providers and therefore only a fraction of all possible applications of green technologies and practices could be evaluated and promoted by the project. Future initiatives on the promotion of green logistics would benefit from completing, during project design, an overview of green technologies and practices that maps existing experiences and identifies the candidate technologies for demonstration that have the best potential for success and replication.
- International chief technical advisors advise project management units and provide technical expertise to ensure high-quality project activities and results. The evaluation team recommends that projects implementing activities in innovative areas, such as green logistics, consider the option to include the role of a chief technical advisor as part of their implementation arrangements.
- The indicators in the project results framework of the project had a strong focus on higher level results in terms on fuel savings and greenhouse gas emissions reductions. While these indicators are critically important parameters to evaluate the cost-effectiveness of climate change mitigation projects and to track their progress towards results, the evaluation team considers that these indicators should also be accompanied by other indicators at lower levels to track the delivery of key outputs and to measure shorter-term results.

1.5. Recommendations

The following table summarized the recommendations produced by this terminal evaluation.

Table 3. Recommendations summary table

| No. | Recommendation | Entity Responsible | Timeframe |
|-----|---|---------------------------------|------------------------|
| 1 | <p><u>Finalize project completion report</u></p> <p>The experiences by the project have a remarkable potential for replication within China and abroad. The approaches to the promotion of green logistics pioneered by the project could be readily upscaled with support from national governments, national or multilateral development banks, and sources of international climate finance such as the Green Climate Fund. The evaluation team recommends that, to contribute to the achievement of this potential, the project team finalizes a comprehensive and well-written project completion report. The report should provide a critical review of the project experiences, emphasizing on lessons learned, and opportunities for improvement by subsequent replication initiatives. The completion report should be</p> | Project team, supported by UNDP | Before project closure |

| | | | |
|---|---|---------------------------------|------------------------|
| | professionally translated and be widely disseminated, with support from UNDP. | | |
| 2 | <p><u>Formulate exit strategy</u></p> <p>The terminal evaluation concluded that it is likely that project results will remain after project’s end. However, there is no formal plan to secure that this will be the case. Also, the sustainability of some specific elements of the project’s strategy is more uncertain – for example, the provision of technical assistance to small- and medium-sized logistics services providers –. The evaluation team recommends that the project team convenes project stakeholders to discuss and adopt an exit strategy that clarifies the objectives and roles for the continuous support to the adoption of green logistics technologies and practices after project closure.</p> | Project team, supported by UNDP | Before project closure |
| 3 | <p><u>Strengthen reporting processes</u></p> <p>UNDP has an opportunity to review and strengthen their role supporting project teams monitoring and reporting project progress. The evaluation team suggests that, as part of the proposed review, UNDP discuss procedures to improve, inter alia, (i) the validation of monitoring and evaluation frameworks, including baselines, at project inception; (ii) the periodic monitoring and reporting of the contribution of cofinancing resources, including the recording of appropriate evidence; and (iii) the preparation and communication of high-quality quarterly and annual progress reports that effectively support project management and oversight.</p> | UNDP | 2021 |

2. Introduction

2.1. Purpose of the TE

The objective of the terminal evaluation (TE) of the “Greening the Logistics Industry in Zhejiang Province (GLIZP)” project was to assess the project design, its implementation, and the achievement of results. The overall performance of the project was assessed against the expectations set in the Project Document (ProDoc), and against the achievement of the project targets as contained in the project results framework (PRF). The TE assessed project results in terms of their relevance, effectiveness, and efficiency. The achievement of project outcomes was also evaluated in terms of their sustainability.

The purpose of the TE is to: (i) promote accountability and transparency; (ii) identify and record lessons learned and recommendations to improve future operations; (iii) evaluate the contribution of project results to GEF strategic objectives on global environmental benefits; and, (iv) assess the alignment of the project with UNDP, and national development priorities in the host country.

2.2. Scope and methodology

The TE was an in-depth evaluation on the entire project based on (i) a desk-review of project documentation; (ii) semi-structured interviews with key informants; (iii) interviews with the project team; and, (iv) interviews with UNDP staff. The TE used a combination of both quantitative and qualitative evaluation methods. The TE followed a participatory approach that engaged key stakeholders and kept them informed of the evaluation process. Due to restrictions from the global COVID-19 pandemic, no travel, field missions, site-visits, or in-person meetings could be conducted during this TE.

The two main tools that used to conduct the analysis were the evaluation criteria matrix and the Theory of Change (ToC). The evaluation criteria matrix was prepared based on the Terms of Reference (ToRs) for the TE, UNDP/GEF evaluation policies, UNDP’s “Guidance for Terminal Evaluation of UNDP-Supported, GEF-Financed Projects” (2020), and the results from the initial desk-review completed as part of the preparation of the inception report. The evaluation criteria matrix is presented in Annex D.

The TE used a ToC analysis to assess the change process that the project was set to achieve. Since a ToC was not defined during the project design phase, the TE team reconstructed a ToC based on the PRF and the proposed project strategy and actions. The ToC analysis was supported by the document review, and interviews with key stakeholders and the project team.

2.3. Data collection and analysis

The desk review of the project documentation included: (i) the ProDoc and annexes; (ii) the GEF CEO endorsement request; (iii) annual work plans (AWPs); (iv) annual and quarterly progress reports; (v) Project Implementation Reviews (PIRs) reports; (vi) minutes of Project Steering Committee (PSC) meetings; (vii) GEF tracking tools; (viii) mid-term review (MTR) report and management responses; (ix) quarterly and annual financial reports; (x) cofinancing evidence; (xi) audit reports; (xii) technical reports of project outputs, (xiii) project publications and outreach materials, and (xiv) other reports or documents that were useful to the TE. A list of all documents reviewed by the evaluation team is presented in Annex C.

Given the restrictions from the global COVID-19 pandemic, all interviews had to be conducted remotely, by phone or videoconference. Interviews and email communications with project management team members at the Zhejiang Provincial Development and Reform Commission (ZPDRC) were used to gather additional information and their insights on different aspects of the project design, implementation and

results. Interviews with key informants used as a guide a semi-structured questionnaire developed by the evaluation team. Key stakeholders interviewed included:

- Members of the project management unit (PMU)
- Representatives from:
 - Fuyang City Government;
 - Fuyang Hangzhou Transfer Logistics Base Co., Ltd.;
 - Shanghai Economic Information Center;
 - Zhejiang Economic Information Development Co., Ltd.;
 - Zhejiang Fuyang Port International Co. Ltd.;
 - Zhejiang Gongshang University;
 - Zhejiang International Freight Forwarding and Logistics Association;
 - Zhejiang Logistics Association;
 - Zhejiang Standardization Research Institute;
- UNDP country office in China; and,
- UNDP regional technical advisor.

A complete list of persons interviews during this TE is available in Annex B.

An internet-based survey of logistics service providers (LSPs) had been proposed and agreed to at the TE inception phase. The survey was designed by the TE team with the purpose of inquiring about the adoption of green logistics technologies and practices by LSPs in Zhejiang Province, and to collect basic insights from LSPs on their level of awareness of green logistics and the project activities to promote these practices. The survey, however, could not be implemented because a list of companies supported by the project could not be provided by the project team.

Information and data were collected in accordance with the evaluation criteria matrix agreed at the inception phase and included in this report as Annex D.

2.4. Ethics

The terminal evaluation was conducted following the principles contained in the ethical guidelines for evaluations¹ adopted by the United Nations Evaluation Group (UNEG). The lead evaluator signed the Code of Conduct for Evaluators and this is included in Annex F.

2.5. Limitations to the evaluation

Restrictions from to the global COVID-19 pandemic prevented the completion of an evaluation mission. Language barriers also limited direct interactions with members of the PMU and other stakeholders. As mentioned above, the proposed survey of LSPs could not be implemented because a list of LSPs supported by the project could not be provided by the project team. This was probably the most relevant limitation to this TE given that, as it was laid down in the inception report, the survey was intended to answer relevant questions on the impact and sustainability of the project. In the absence of the information to be obtained from the survey, some of the questions that were intended to be answered by the survey were addressed during interviews with project stakeholders.

¹ UNEG, 2008, "Ethical Guidelines for Evaluations". Available under < <http://www.unevaluation.org/document/detail/102>>

3. Project Description

3.1. Project start and duration, including milestones

The project had a planned duration of four years (48 months), starting on the ProDoc’s signature date on 3rd January 2017. The planned closing date was therefore on 2nd January 2021. Operational closing date was on 2nd February 2021. Table 4, below, lists the main project milestones.

Table 4. Project milestones

| Milestone | Date |
|--|--|
| PIF approval | 21 March 2014 |
| CEO Endorsement | 15 November 2016 |
| ProDoc signature | 3 January 2017 |
| Inception workshop | 24 March 2017 |
| Project manager hiring | 26 September 2017 |
| Meetings of the project steering committee | 24 March 2017 16 March 2018 25 March 2019 11 September 2020 |
| Mid-term review | 18 August 2019 |
| Terminal evaluation | 23 March 2021 |
| Planned closing date | 3 January 2021 |
| Operational closing date | 2 February 2021 |

Source: Mid-term review, minutes of PSC meetings

3.2. Development context

The logistics industry provides essential services to the economy, building and maintaining the links of value chains, and bringing products to consumers. Zhejiang Province is a national hub for industrial and commercial activity, including e-commerce and international trade. In that context, the logistics sector plays a strategic role in the economy, contributing in 2018 with 542 billion yuan or 9.7% of the province’s GDP.² The sector is also an important employer, with as many as 32,000³ logistics companies operating in Zhejiang Province. In 2018, nationwide, the transport, warehousing and postal services sector employed more than 540,000 people.⁴

Given its economic and social importance, the development of a strong and competitive logistics sector is a policy priority for national and local authorities in China. As such, key policies and development plans in the country include provisions to promote the development of this industry. Table 14, on page 30, lists key policies and plans with provisions that are relevant to the logistics industry.

Green logistics are defined in the Chinese national standard 37099-2018 on “Green Logistics Indicators and Accounting Methods” as practices that “reduc[e] the impact of logistics activities on the environment by making full use of logistics resources, adopting advanced logistics technology, reasonably planning and implementing logistics activities including transportation, storage, loading and unloading, carrying,

² Zhejiang Economic Information Center, Zhejiang Gongshang University. Evaluation Standard of Implementation Effect of Green Logistics Project. April, 2020. p.7.

³ China Quality Certification Centre. Energy Efficiency Evaluation Program and Plan for Small and Medium sized Logistics Enterprises in Zhejiang Province. November, 2020. p.21.

⁴ Ibid. p. 5.

packaging, circulation processing, distribution, information processing and the like.”⁵ Green logistics are applicable to the five main components of the logistics system: transportation, warehousing, packaging, distribution, and waste management.⁶

Zhejiang Province is pursuing a model of green and sustainable development denominated the “New Zhejiang Model”. Under this model, the development of a green logistics sector in the province is critically important, not only to reduce greenhouse gas (GHG) emissions and other environmental impacts, but also to increase the overall competitiveness of businesses in Zhejiang. As reported by the Zhejiang Economic Information Center, an environmentally sustainable or green logistics sector contributes to (i) reducing the operating costs for small- and medium-sized enterprises; (ii) improving the competitive advantages of logistics companies; (iii) accessing markets with high environmental standards; and, (iv) reducing the environmental impact of economic activities.⁷

3.3. Problems that the project sought to address

The project aimed at improving the efficiency of the logistics industry in Zhejiang Province. According to the ProDoc, the logistics sector had experienced a rapid growth over the two previous decades, supported by large public investments in transport infrastructure. However, the pace of adoption of efficient technologies and practices by the industry had proceeded at a slower pace. As a result, the industry was characterized by low efficiency, high operational costs, and comparatively large environmental impacts. The ProDoc cites as evidence the fact that the contribution of the logistics sector in China was equivalent to 18% of the country’s GDP, a fraction that was estimated to be twice the contribution that this sector makes to the economies of developed countries.⁸

The project’s strategy consisted of a barriers removal approach to address the major barriers for the adoption of green logistics techniques and practices.⁹ The main barriers reported in the ProDoc are:

- Lack of comprehensive, consistent, and enforced policies (and implementation and institutional arrangements) supporting the application of green logistics systems in the logistics industry;
- Low level of confidence of the logistics industry on the viability of green logistics applications and infrastructures;
- Low level of capacity, knowledge, and skills of and cooperation among the relevant government entities, manufacturing and logistics industries on the application, design, and operationalization of green logistics systems, as well as in the application of energy conservation and operational efficiency in the logistics industry; and,
- Lack of an effective information platform to share the successful experiences in the design, development, and operation of green logistics systems.¹⁰

⁵ As cited in: Tianjin Climate Exchange Co., Ltd. Green Finance for Green Logistics in Logistics SME: Support Assessment and Suggestions. December 2019. p.8.

⁶ Zhejiang Economic Information Center. Green Technology Application and Practice Guide for Zhejiang Logistics Enterprises. No date. p.1.

⁷ Ibid. pp.7 - 8.

⁸ ProDoc, p. 1.

⁹ ProDoc, p. 13

¹⁰ ProDoc, p. 7

According to the project’s ProDoc and CEO endorsement request, the project was aligned to objectives 2 and 4 of the climate change focal area under GEF-5 (CCM-2 and CCM-4).¹¹ The scope of CCM-2 was to promote market transformation for energy efficiency in industry and the building sector; and the scope of CCM-4 was to promote energy efficient, low-carbon transport and urban systems. The project sought to contribute to these objectives by improving the efficiency of and reducing GHG emissions from the logistics industry in Zhejiang Province.

3.4. Immediate and development objectives of the project

The objective of the project was to promote the adoption of energy efficient green logistics technologies and practices in the logistics industry in the Chinese province of Zhejiang.¹² The ultimate goal of the project was to reduce GHG emissions attributable to the logistics industry and the transport sector of the province.¹³ The project proposed to transform the logistics industry in Zhejiang Province based on three principles of urban green logistics: mobility, sustainability and livability. These principles are underpinned by requirements on operational efficiency, environmental performance, and energy efficiency/conservation.¹⁴

3.5. Expected results

In the ProDoc, the expected results of the project were defined in terms of energy savings and GHG emissions reductions:

Table 5. Expected results

| Results | Baseyear | End of project | End of project + 10 years | End of project + 15 years |
|---|----------|----------------|---------------------------|---------------------------|
| Annual energy consumption (ktoe/year) | | | | |
| Baseline | 8,146.90 | 10,397.73 | 16,936.81 | 22,696.95 |
| Project | 7,848.42 | 10,175.12 | 16,591.82 | 22,234.18 |
| Annual energy savings, (ktoe/year) | | | | |
| Zhejiang Province | - | 222.62 | 344.99 | 462.77 |
| Attributable to the project | - | 80.06 | 122.62 | 164.69 |
| Annual GHG emissions reductions (tCO₂/year) | | | | |
| Zhejiang Province | - | 1,135,450 | 1,637,830 | 2,196,240 |
| Attributable to the project | - | 471,360 | 665,120 | 892,430 |
| Cumulative GHG emissions reductions attributable to the project (tCO ₂) | - | 1,749,270 | 7,121,410 | 11,876,480 |

Source: ProDoc, p.17

3.6. Main stakeholders

Table 6 lists the main project stakeholders, as presented in the ProDoc.

¹¹ Paragraph 29 of the ProDoc refers only to aligning the project to CCM-2, however, in the next paragraph (30) the ProDoc refers to the outcomes and outputs of CCM-4, too.

¹² ProDoc, p. 19

¹³ Op.cit.

¹⁴ ProDoc, p. 14

Table 6. Project stakeholders, roles and responsibilities

| Stakeholder | Roles and Responsibilities in Project Implementation |
|--|---|
| Zhejiang Provincial Development and Reform Commission | Main implementing partner for the implementation of the GLIZP project in connection with the overall project direction and management, organizational, financial and administrative support, capacity development activities of the staff involved under the project, policy and decision making, achievement of the expected outputs, monitoring and documentation of results, sustainability of activities and outputs in ensuring attainment of expected outcomes during and after the project and liaison and coordination with the other stakeholders and beneficiaries. ZPDRC had a leadership role in coordinating and motivating the players of the logistics industry towards its goals in the materials management and physical distribution. |
| Fuyang City Government | Project partner in the identification, design, and demonstration of applications of green logistics technologies, techniques, and practices in logistics operations in Fuyang City and related capacity development. Fuyang City Government in cooperation with the ZPDRC contributed to resource mobilization and investment in the required demonstration facilities for green logistics in the materials management and physical distribution, including combined road and water transport. |
| Zhejiang Fuyang Port International Co. Ltd. | Project partner in the identification, design, and demonstration of green logistics applications in materials management operations and related capacity development. This involved the installation and operation of the specific requirements in modernizing and equipping the system on reliable information technology application in various phases of operations by increasing the container full-load rate from the current low load rate. |
| Fuyang Hangzhou Transfar Logistics Base Co., Ltd. | Project partner in the identification, design, and demonstration of green logistics applications in physical distribution operations and related capacity development. This involved the systematic and efficient scheduling of transport modes and combined road and water transport in a centralized platform by addressing the problem of asymmetric information, and improving goods-vehicles matching efficiency, and reducing truck empty-loaded rate based on highway port network information platform. |
| Other Zhejiang Province-based logistic service providers | Project participants in the identification, development and provision of incremental technical assistance, capacity development, information and promotion activities of the project. |

Source: Reproduced from ProDoc, pp. 8 – 9

3.7. Theory of change

The ProDoc did not include a discussion of the formal aspects of the project's ToC. The MTR assessed the quality of project design and the suitability of indicators and targets in the PRF, but it did not discuss the project's ToC and made no attempt at reconstructing it. For this TE, the ToC was reconstructed based on the descriptions ProDoc and the PRF and is represented graphically in Figure 1. The PRF, as presented in the ProDoc, is reproduced in Annex L of this report.

The ProDoc states that the project's overall goal was the "reduction of GHG emissions in the logistics industry and freight transport sector of Zhejiang Province", and that the project's objective was the "widespread application of energy efficient green logistic techniques and practices in the logistics industry in Zhejiang Province". In the reconstructed ToC, the former is restated as the impact of the project, and the later as an intermediate state, which was not included in the ProDoc, but is required to connect the project stated outcomes with the project impact/goal.

The project's strategy included three causal pathways that converged to enable the adoption of energy efficient logistic practices and technologies. The first causal pathway, pursued under component one, aimed at removing policy and regulatory barriers, and proposed the adoption of enabling policies, regulations, and incentives for the adoption of green logistic practices and technologies. This pathway included actions for the design and adoption of, inter alia, a pilot financial scheme to incentivize investments in green logistics by small- and medium-sized LSPs, and policies, regulations, and standards to govern the development and adoption of green logistics in Zhejiang Province. This pathway led to a direct outcome defined as "established and enforced policy and regulations on the application and operation of green logistics systems in the logistics industry in Zhejiang Province". An underlying assumption (assumption one in Figure 1) was that the project could (through activity 1.1.2.) effectively identify the existing policies and regulations that impeded the adoption of green logistics technologies and practices, and (through activity 1.2.3.) facilitate the adoption of new or revised policies and regulations to address such barriers.

The second causal pathway, under component two, addressed barriers related to (i) low levels of confidence on green logistics solutions, and (ii) lack of systematic recording and dissemination of successful experiences with the adoption energy efficient logistic practices and technologies. The second causal pathway relied on the design, implementation and monitoring of two pilot projects on (i) energy efficient materials management, and (ii) energy efficient physical distribution systems. This pathway resulted in a second direct outcome stated as "improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province". The outcome, as originally stated, goes beyond the expected results from the implementation of the project and describe the final state of the logistics industry in Zhejiang Province. The outcome has been rephrased as "demonstrated technologies and practices for improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province". An assumption to deliver the outcome, as revised, required that the technologies, implemented in partnership with companies implementing demonstration projects, would perform as anticipated and that these results would occur early enough during the project implementation to allow for meaningful monitoring, evaluation, and dissemination (assumption 2).

The third causal pathway, under component three, addressed three barriers on (i) low levels of capacity, skills, knowledge, and cooperation related to green logistics, (i) low levels of confidence on green logistics solutions, and (ii) lack of systematic recording and dissemination of successful experiences with the adoption energy efficient logistic practices and technologies. Along this pathway, the project built the technical capacities of stakeholders, providing training and training materials to personnel from LSPs and government agencies. The proposed direct outcome under this pathway was defined in the ProDoc as

“increased application and utilization of energy efficient materials management and physical distribution techniques, technologies and practices in the logistics and manufacturing industries in Zhejiang Province”. This definition, however, does not adequately reflect the expected results from the implementation of the proposed project activities and the delivery of outputs. Instead, the reconstructed ToC redefined this outcome as “improved capacities and access to information on green logistics systems among authorities and LSPs in Zhejiang Province”. An assumption that was required to reach outcome 3 was related to the project’s capacity to generate effective partnerships for the delivery of training activities that would reach a significant number of LSPs and stakeholders in Zhejiang Province, and that those training activities would effectively build the capacities of these stakeholders (assumption 3).

Collectively, the three project outcomes, as revised, led to a state where green technologies and practices have been enabled by appropriate policies and financial incentives, and the feasibility and advantages of (some) technologies and practices have been demonstrated by pilot projects. Training and dissemination activities have raised awareness on green technologies and have developed the skills to facilitate their adoption. Beyond this state, the path to reach the project’s goal requires an intermediate state characterized by a situation in which green technologies and practices are extensively adopted by the logistics industry in Zhejiang Province. For the logistics industry in Zhejiang Province to reach that state, it is necessary that the technologies and practices demonstrated by the project are replicated at scale by a larger group of LSPs, and that additional technologies, so far untested in Zhejiang Province, are demonstrated and the results from those experiences are shared with the industry (assumption 4). As indicated above, the goal of the project was the reduction of GHG emissions through the widespread adoption of green logistics technologies and practices. That goal would follow the impact from the project if there are no major structural changes to the logistics industry in China that could shift logistics activities to other regions in the country and provided that the energy sources available to LSPs do not transition to more carbon intensive sources, undermining the gains in energy efficiency achieved by the logistics industry (assumption 5).

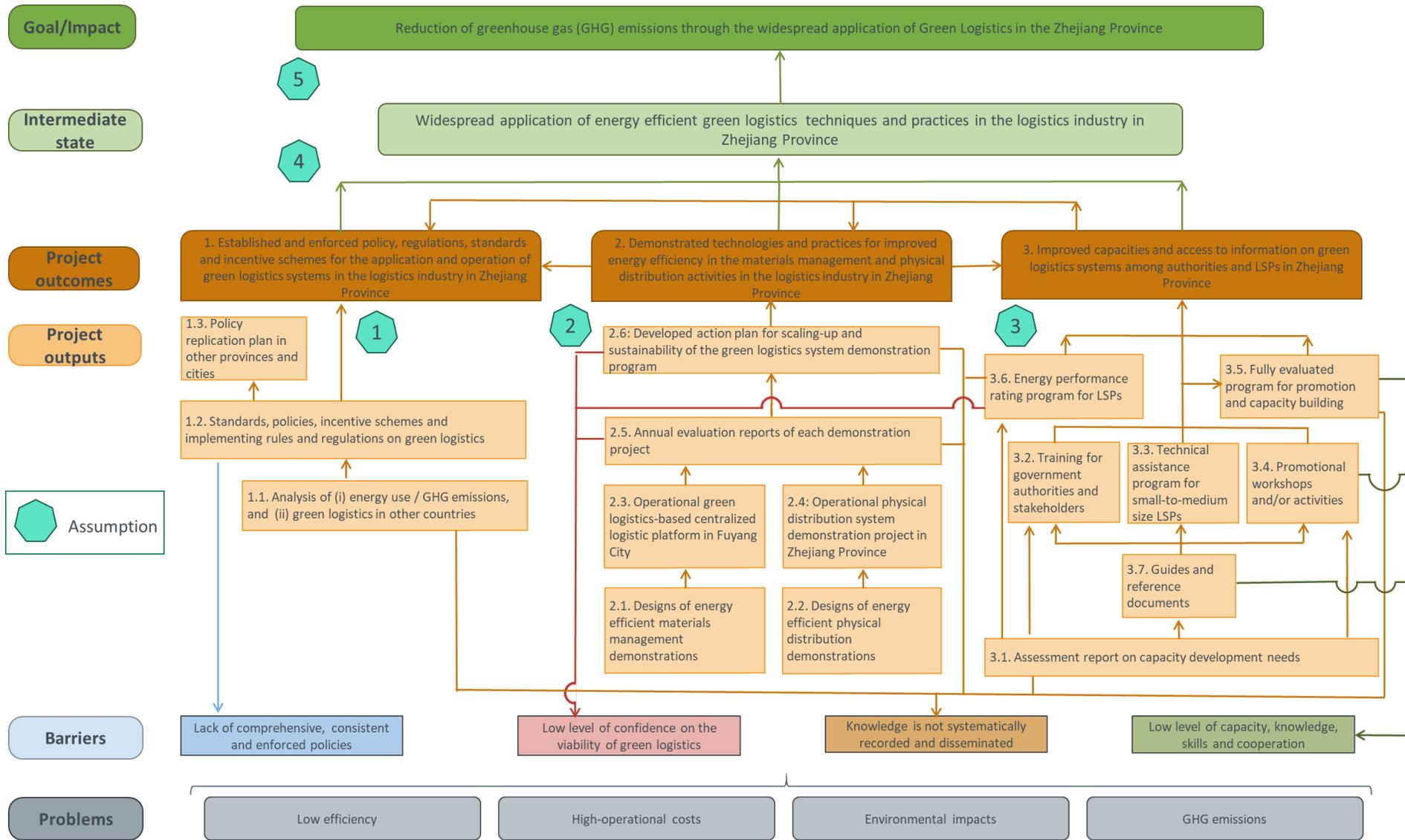


Figure 1. Reconstructed theory of change

As discussed above, the reconstructed ToC required adjustments to the PRF, including making changes to clarify definitions and reorganizing some outputs. The changes to the PRF are described in Table 7.

Table 7. Changes to the project results framework and justification

| Result | Description in the Project Document | Description in the reconstructed ToC | Justification |
|---------------------------|---|--|---|
| Impact | Goal. Reduction of greenhouse gas emissions in the logistics industry and freight transport sector of Zhejiang Province | Impact. Reduction of greenhouse gas emissions in the logistics industry and freight transport sector of Zhejiang Province | The impact of the project is related to reduced GHG emissions from the logistics sector. The impact will be achieved if LSPs adopt and maintain at large scale green logistics technologies and practices. |
| Intermediate state | Objective. Widespread application of energy efficient green logistics techniques and practices in the logistics industry in Zhejiang Province | Intermediate state. Widespread application of energy efficient green logistics techniques and practices in the logistics industry in Zhejiang Province | The intermediate state will be achieved if the enabling environment created by the project is sufficient to incentivize a large number of LSPs to adopt green logistics technologies and practices. |
| Outcomes | 1. Established and enforced policy and regulations on the application and operation of green logistics systems in the logistics industry in Zhejiang Province | 1. Established and enforced policy, regulations, standards and incentive schemes for the application and operation of green logistics systems in the logistics industry in Zhejiang Province | As originally stated, the definition of outcome 1 may restrict the results from component 1 to <i>policies and regulations</i> . However, a detailed inspection of the activities and outputs described in the ProDoc and reported by the project, it becomes clear the intended purpose of outcome 1 was to develop a broader range of instruments, including <i>standards and incentive schemes</i> . |
| | 2. Improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province | 2. Demonstrated technologies and practices for improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province | As originally stated, outcome 2 goes beyond the expected results from component 2 and describes the final state of the logistics industry Zhejiang Province, by the time the goal is achieved. |
| | 3. Increased application and utilization of energy efficient materials management | 3. Improved capacities and access to | As originally stated, outcome 3 is a |

| Result | Description in the Project Document | Description in the reconstructed ToC | Justification |
|----------------|--|--|--|
| | and physical distribution techniques, technologies and practices in the logistics and manufacturing industries in Zhejiang Province | information on green logistics systems among authorities and LSPs in Zhejiang Province | rephrasing of outcome 2 and, like outcome 2, goes beyond the expected results from component 3. |
| Outputs | 1.1. Completed analysis of: (1) the energy use trends and GHG emissions from the operation of the logistics industry (materials management and physical distribution) in Zhejiang Province as basis for formulating policies; and, (2) green logistics systems developed and implemented in other countries and the performance and results of their applications. | No recommended changes. | N.A. |
| | 1.2. Formulated, recommended, and implemented standards, policies, incentive schemes and implementing rules and regulations on the promotion and adoption of green logistics the logistics industry in Zhejiang Province. | No recommended changes. | N.A. |
| | 1.3. Published and disseminated guides and reference documents for the application of energy conserving and energy efficient practices in the logistics industry | 3.7. Published and disseminated guides and reference documents for the application of energy conserving and energy efficient practices in the logistics industry | Output 1.3., as described in the ProDoc, is better listed under component 3 as it contributes to the causal pathway on improved access to knowledge. |
| | 1.4. Approved follow-up plan for the replication of the applications of the piloted green logistics policies in Zhejiang Province in other provinces and cities | 1.3. Approved follow-up plan for the replication of the applications of the piloted green logistics policies in Zhejiang Province in other provinces and cities. | Renumbering of the output, after moving output 1.3. to component 3. |
| | 2.1. Completed designs of energy efficient materials management demonstrations focusing on using energy efficient materials management systems in packaging, warehousing, cold storage, etc., in the logistics industry in Zhejiang Province | No recommended changes. | N.A. |
| | 2.2. Completed designs of energy efficient physical distribution demonstrations focusing on integrated multi-modal transport systems and reduction of empty load rates in the freight transport operations of the logistics in Zhejiang Province | No recommended changes. | N.A. |

| Result | Description in the Project Document | Description in the reconstructed ToC | Justification |
|--------|--|--|-------------------------------------|
| | 2.3. Installed and fully operational green logistics-based centralized logistic platform in Fuyang City, Zhejiang Province | No recommended changes. | N.A. |
| | 2.4. Operational green logistics-based physical distribution system demonstration project in Zhejiang Province | No recommended changes. | N.A. |
| | 2.5. Documented annual evaluation reports on the energy performance and environmental impacts of each demo project in materials management and physical distribution, and documented and disseminated demo project results | No recommended changes. | N.A. |
| | 2.6. Developed action plan for sustainability of the green logistics system demonstration program | No recommended changes. | N.A. |
| | 3.1. Completed assessment report on capacity development needs in the area of green logistics and developed green logistics capacity building program | No recommended changes | N.A. |
| | 3.2. Completed green logistics training courses for government authorities and relevant stakeholders in the logistics and manufacturing industries in Zhejiang Province (e.g., concepts, practices, methodologies) | No recommended changes | N.A. |
| | 3.3. Completed technical assistance program for assisting small-to-medium size LSPs on the application of green logistics systems | No recommended changes | N.A. |
| | 3.4. Completed promotional workshops and/or activities to enhance awareness and knowledge in green logistics systems | No recommended changes | N.A. |
| | 3.5. Completed and fully evaluated program for the promotion and capacity building of green logistics systems | No recommended changes | N.A. |
| | 3.6. Designed, endorsed and implemented an energy performance rating program and green logistics information sharing system for LSPs in Zhejiang Province | No recommended changes | N.A. |
| | - | 3.7. Published and disseminated guides and reference documents for the application of energy conserving and energy efficient practices in the logistics industry | Output moved from component 1 to 3. |

4. Findings

4.1. Project Design/Formulation

4.1.1. Analysis of project results framework

The project followed a conventional strategy for barriers removal based on three main types of interventions that were grouped in three components on: (1) *policy and regulatory support* aimed at removing policy and regulatory barriers; (2) *demonstration of green logistics systems* designed to remove barriers related to low levels of capacity, knowledge, skills, and cooperation among stakeholders in the logistics industry, and to increase the level of confidence on the feasibility of green logistics techniques and practices, and (3) *capacity building and promotion of green logistic and systems*, aimed at improving access to information on the design, development, and operation of green logistics, and to contribute to the removal of the barrier related to low levels of capacity, knowledge, skills and cooperation among stakeholders.¹⁵ The TE concluded that this strategy is adequate to address the problems described in the ProDoc and to reach the proposed project objectives.

The ProDoc made a solid presentation of the problems to be addressed by the project, providing evidence of the observed situation in Zhejiang Province and in China. While the ProDoc did not include a formal discussion of the project's ToC, the structure and description of the project's components, outputs and activities are logic and presented in a clear and concise manner. The linkages and sequencing of activities and outputs were described explicitly in the narrative provided in section 2.5 of the ProDoc. Key assumptions were listed in the PRF in section 4.

The PRF included SMART indicators at the goal, objective, and outcome level. Indicators and targets for component two were defined only in terms of fuel savings and GHG emissions reductions. As discussed in section 4.2.3, while these indicators are valid and necessary, a combination of these indicators with indicators at a lower level (e.g. output level) would have been more effective at supporting project management, monitoring and reporting.

4.1.2. Assumptions and risks

Critical assumptions were listed in the PRF and a risk analysis was summarized in a risk log included in Annex I of the ProDoc. The assumptions listed were reasonable and sound. The risks registered in the risk log are reasonable and the proposed risk management measures are adequate. The analysis did not include risks related to externalities that could have a large disruptive effect on project implementation. In hindsight, it is evident that the global COVID-19 pandemic and the ensuing economic slowdown impacted project implementation and evaluability but, for obvious reasons, the pandemic could not have been predicted during project design.

4.1.3. Lessons from other relevant projects incorporated into project design

Implicit in the project design is the years-long experience of UNDP and other GEF implementing agencies on the implementation of the barriers-removal approach in different contexts. The ProDoc also lists, on paragraph 25, seven projects on transportation and logistics that were used as reference for the design of the proposal. However, no details were included on how experiences with those projects were incorporated in the project design.

¹⁵ ProDoc, section 2.6, pp. 20 - 38

At the time of project design, climate change mitigation in the logistics sector in developing countries was a relatively novel topic, especially under GEF, and few directly relevant project examples could have been referenced. However, initiatives to reduce the environmental impact of the logistic industry in developed country did exist (e.g. U.S. Environmental Protection Agency programme “SmartWay”), and those experiences could have been used as an input to project design. On the other hand, the project design did include an output related to the analysis of green logistics in countries other than China (output 1.1.).

4.1.4. Planned stakeholder participation

In section 1.3., the ProDoc listed stakeholders and their roles and responsibilities under the project (see also section 2 of this TE report on main stakeholders). Five main stakeholders were included: (i) Zhejiang Provincial Development and Reform Commission, (ii) Fuyang City Government, (iii) Zhejiang Fuyang Port International Co. Ltd., (iv) Fuyang Hangzhou Transfar Logistics Base Co., Ltd., and (v) other Zhejiang Province-based logistic service providers. The first four stakeholders on the list had direct roles in project implementation, provided cofinancing resources, and were members of the PSC. The project included activities to engage with the fifth stakeholder listed (LSPs in Zhejiang Province), mainly through training and knowledge dissemination activities. The analysis included in the ProDoc did not include stakeholders that had important roles during project implementation (e.g. Zhejiang Logistics Association, Zhejiang Gongshang University, Zhejiang Standardization Research Institute, etc.). The ProDoc did not include a stakeholder engagement plan, but such a plan was not mandatory at the time the document was produced.

4.1.5. Linkages between the project and other interventions within the sector

The ProDoc listed various investment and initiatives in the logistics sector of Zhejiang Province as part of the project’s baseline:

- Transformation of Road and Port Logistics Project;
- International Port Logistics Project;
- Stage out Action Plan for Rejuvenation of Inland Water Navigation in Zhejiang Province;
- 13th Five-Year Plan for the Development of Modern Logistics Industry in Zhejiang Province;
- Setting of the Standards of Zhejiang Province Green Logistics;
- Hangzhou Modern Logistics Development Plan;
- Transportation Information Platform; and,
- Improvement of Container Full-Load Rate and Implementation of the Water-Land Transshipment Project;

As part of the project’s baseline, these project and initiatives contributed towards cofinancing targets and to the achievement of project results.

4.1.6. Gender responsiveness of project design

The project design included no considerations on gender other than general observations in the social and environmental screening about improved environmental quality that could benefit women, and about the project creating job opportunities for women. The CEO endorsement request indicated that the project would promote job opportunities for women through training activities under component 3.

No gender analysis or action plan were included in the project design, although a gender action plan was not a mandatory component of UNDP/GEF proposal at the time the project was formulated.

4.1.7. Social and Environmental Safeguards

The ProDoc included the standard UNDP social and environmental screening report in Annex X. The project was classified as low risk and no specific risks related to social and environmental safeguards were identified.

4.2. Project Implementation

4.2.1. Adaptive management

During the inception workshop, held on 24 March 20017, stakeholders identified changes to the project context and noted that the project scope had to change to reflect these new circumstances: “Since the Project Concept Paper has been submitted to and approved by GEF in February 2014, some major senior beneficiary demands changed before the project is finally approved by UNDP in December 2016. So the project scope and content are quite different with what is originally designed. Significant changes and adjustments are necessary to be reviewed and identified to ensure a clear project operation procedure and successful project implementation.”¹⁶ The workplans for the first year of implementation of the project and for the entire four years of the project’s lifetime that were included in annexes 4 and 5 of the inception workshop report had little resemblance to the project described in the ProDoc. No formal approval of the changes discussed during the inception workshop was recorded by UNDP’s country office in China.

The MTR produced ten recommendations that are presented in Table 8, together with their respective management response and observations from the evaluation team. As shown in Table 8, the recommendations from the MTR and the actions to respond to these recommendations were not particularly effective since: (i) some recommendations were not applicable due to time or resource constraints (e.g. A.2., B.6., B.7.), (ii) some recommendations pointed to issues that had already been identified and reacted to (e.g. A.3. B.1.), and/or (iii) responses to some recommendations were not implemented (A.1., B.1.)

Table 8. Recommendation from mid-term review

| Recommendations [†] | Management response [‡] | Comments |
|--|--|--|
| A. Project design, objective and strategy | | |
| A.1. “As the GLIZP project document was made several years ago, and the provincial logistics industry has undergone changes, it is recommended that the project use an updated methodology to calculate the fuel and GHG emissions reductions, as is being used by the PMU. This methodology is aligned with the original goal, objective, and output of the project.” | “Agreed. PMU will continue to use the new method to calculate fuel and greenhouse gas emissions reductions over the next project implementation period” | The calculation of GHG emissions reductions by the project had major shortcoming that were not properly identified and corrected. It remains unclear how and when the methodology was updated. Changes to the methodology to assess fuel savings and GHG emissions reductions were not reflected in the targets and indicators reported in PIRs. |
| A.2. “As fuel consumption constitutes a large fraction of the total energy consumption in the logistics industry, particularly in physical distribution of goods, it is | “Agreed. 1. At present, PMU mainly adopts measures such as optimizing the transportation structure, establishing a freight dispatch | The project had approximately 18 months left when the recommendation was made, making the implementation of the |

¹⁶ Inception report, p. 6

| Recommendations [†] | Management response [‡] | Comments |
|--|---|---|
| recommended that green or low-carbon mobility be an important component of the GLIZP project, such as through the promotion of widescale adoption/upgrading of new energy vehicles in the logistics industry.” | platform, and management innovation to reduce energy consumption in the transportation link. 2. Due to the limitation of technology and cost, it is impossible to replace all fuel-powered trucks with new energy vehicles in the short term. But we can start from the field of physical distribution of goods in stages, and gradually increase the proportion of new energy vehicles in the physical distribution of goods.” | recommendation an almost impossible task. |
| A.3. “The GLIZP project can explore opportunities for influencing improvements in resource and energy efficiency and circular economy in upstream and downstream areas of physical distribution and materials management, such as in recycling of packaging materials, reducing water consumption and using energy saving and monitoring devices at material storage facilities, and engaging LSPs and shippers/receiver in choosing green logistics solutions.” | “Agreed. Fuyang port implemented the "Box-Callback", which means the red wine box recycling measures. Consumers will send the used red wine wooden box to Fuyang port red wine store, so as to obtain special low-carbon and environmental protection coupons in exchange for red wine.” | The concepts recommended by the MTR were already part of the green technologies and practices proposed by the project (e.g. description of outputs 2.1. and 2.3. on section 2.6 of the ProDoc). These concepts were also discussed in at least one of the project’s outputs on green logistics technologies. ¹⁷ Moreover, as indicated by the management response, the concepts were already demonstrated by one of the pilot projects. |
| A. Project implementation and adaptive management | | |
| B.1. “In the remaining duration of the GLIZP project, the PMU can consider the preparation of case studies on the successful implementation of activities and achievement of outputs/outcomes, such as the demonstration of low-carbon materials storage system at the Zhejiang Fuyang Port International Logistics Port Co. with integrated application of low-cost green technologies and the green logistics accounting systems, and the reductions in the GHG emissions through the use of multi-modal transport for physical distribution of goods. These case studies can substantively inform local/-sub-national efforts for | “Agreed. 1. 1. In September 2019, PMU implement projects such as "Green logistics policy promotion mode research and promotion plan formulation project" and "Zhejiang and Shanghai integration green logistics policy pilot demonstration research project", systematically summarized the experience of demonstration projects, provided the reference for the state to formulate green logistics policy, and put forward promotion suggestions. 2. 2020 plans to research green management system of small and medium-sized logistics enterprises, and further study the green logistics | The case studies that the MTR refers could correspond to project output 2.5. on “documented annual evaluation reports on the energy performance and environmental impacts of each demo project in materials management and physical distribution, and documented and disseminated demo project results”. While the performance of two pilot projects were monitored, the project did not produce case studies of these experiences for widespread dissemination, as recommended by the MTR. |

¹⁷ Zhejiang Economic Information Center. Green Technology Application and Practice Guide for Zhejiang Logistics Enterprises. No date.

| Recommendations [†] | Management response [‡] | Comments |
|---|--|---|
| supporting/developing policy and regulatory environments and technical standards for green logistics within China.” | management experience of demonstration enterprises, to promote the application in more enterprises.” | |
| B.2. “The PMU can consider focusing its efforts on the incorporation of the Green Logistics Development Index System in local/provincial plans, policies, and programs for supporting the development of the green logistics industry in Zhejiang Province, and influence national policies and programs for green economic development.” | “PMU has been committed to promoting the development index system of green logistics into the planning, policies, and programs supporting the development of green logistics industry in Zhejiang Province, and has achieved certain results. Firstly, the proposal on the normalized release of green logistics index to promote the high-quality development of modern logistics in Zhejiang Province submitted by PMU was approved by Feng Fei, executive vice governor of Zhejiang Province. Secondly, the provincial development and Reform Commission has also issued the Zhejiang green logistics development index regularly. Thirdly, the establishment of green logistics monitoring system has been added to the development plan of the logistics industry in Zhejiang Province during the 14th Five-Year Plan period. Next, PMU will work hard to promote the government departments in charge of developing the green logistics development index system into the "14th Five-Year" logistics development plan of Zhejiang province.” | Stakeholders interviewing for the TE agreed that the inclusion of green logistics concepts in the 14 th Five-Year Plan by the Government of Zhejiang Province was an important achievement of the project. |
| B.3. “As most of the capacity building activities will be carried out in the remaining duration of the GLIZP project, the PMU and ZPDRC can consider engaging with other provincial/local governments in China for participating in the capacity building activities and sharing the experience of the project’s successful implementation of demonstrations to replicate and scale-up green logistics industry development activities in China.” | “Agreed. PMU plans to cooperate with Shanghai to carry out green logistics capacity building activities in Shanghai and share the experience of successful implementation demonstration of the project.” | Interviews with stakeholders indicated that the project had implemented capacity building activities in collaboration with stakeholders in Shanghai. These activities, however, were not documented. |
| B.4. “The demonstrations on low-carbon materials | “PMU has been committed to promoting green warehouse | Apparently, the MTR failed to identify the issues with the |

| Recommendations [†] | Management response [‡] | Comments |
|--|--|---|
| <p>storage/warehousing system can be replicated to increase annual fuel saving and reductions in GHG emissions in the logistics industry in Zhejiang Province. Presently, although the EOP target has been met for the annual fuel savings and GHG emissions reductions through improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province, the actual fuel savings and GHG emissions reductions in materials management are less than expected and are being compensated by higher-than-expected fuel savings and GHG emissions reductions in physical distribution.”</p> | <p>construction and operation experience in Zhejiang Province. At present, PMU mainly adopts the following measures to promote the green warehouse construction and operation experience of demonstration enterprises: first, organize capacity-building activities, invite main management personnel of demonstration enterprises to carry out propaganda activities and share green storage construction and operation experience of demonstration enterprises with small and medium-sized logistics enterprises in Zhejiang Province; second, organizing small and medium-sized logistics enterprises in Zhejiang Province to visit and inspect green warehousing of demonstration enterprises, Third, cooperate with other provinces and cities in China (Shanghai), select local small and medium-sized logistics enterprises, and promote green logistics pilot in Zhejiang Province.”</p> | <p>estimation of GHG emissions reductions by the project. As discussed in section 4.3.2., the two demonstration projects delivered only 1% of the project’s target for GHG emissions reductions under component 2. The extrapolation of the results from these two pilots to the rest of the logistics industry in Zhejiang Province is not an accurate estimation of the project’s indirect impacts.</p> |
| <p>B.5. “The successful demonstrations from the GLIZP project can serve as useful examples for the China’s international Belt and Road Initiative (BRI); logistics and related infrastructure is the largest component of BRI and there is tremendous potential for green logistics to be a medium of creating sustainable development outcomes both nationally and internationally, as well as for South-South cooperation for sharing China’s tested and validated solutions and technologies for green logistics. In this regard, the PMU and ZPDRC can engage with the relevant national agencies/institutions to incorporate green logistics demonstrations and capacity building activities in the BRI, as well as facilitate the participation of personnel from BRI countries in the GLIZP project capacity building activities”</p> | <p>“We agree with you very much and we have been trying to achieve it. We have been in good cooperation with specific countries along the Belt and Road is in the low carbon sector. For example, we successfully hosted one exhibition about the Zhejiang low carbon technology which included the "The Belt and Road" cooperation project and the conference. Over 30 technical officials from 18 countries along the Belt and Road attended the meeting. At the same time, we shared the experience of low carbon development in Zhejiang Province, including green logistics, and organized their field visits to Zhejiang's low-carbon industries.”</p> | <p>No comment.</p> |

| Recommendations [†] | Management response [‡] | Comments |
|---|---|--|
| <p>B.6. “The PMU/ZPDRC/UNDP can consider including in the remaining two-year work plan an activity on researching what kinds of new jobs are employing women in the green logistics industry due to the GLIZP project’s implementation.”</p> | <p>“Due to the implementation of the green logistics policy, a lot of new work has been added. For example, because of the adjustment of transport structure, the transportation of highways to waterways has created more job opportunities for the wharf operators and crew members. Because of the relatively short duration of the project, PMU is considering joining this activity in the next phase of the project.”</p> | <p>Noting that gender considerations had not been included in the project design and implementation was an adequate observation of the MTR. However, given that most training activities were going to be completed during the last months of the project, a better recommendation and response would have been to develop targeted training activities for women and thus have an incidence on how women benefit from the project activities and on how the role of women is perceived in the logistics industry.</p> |
| <p>B.7. “The PMU, NDRC, and UNDP can consider incorporating within the work plan, a project activity that focuses on researching and providing recommendations for policy integration at the local/provincial/national levels, such as between policies for green logistics development and promotion of new energy vehicles, and green logistics development and promotion of energy efficiency/conservation devices.”</p> | <p>“Green logistics is a systematic project involving many the upstream and downstream industries and all aspects of residents' life. Besides, at the management level, it involves multiple departments such as development, business, transportation, and so on. It needs to integrate multi-sector policies and form a policy force to jointly promote the development of green logistics. In the course of project development, we have also been paying attention to the change of green logistics policy. For example, in the study of green logistics policy promotion mode, we have summed up the practice of integrating green logistics policies in some provinces and cities. Because of the relatively short duration of the project, PMU is considering joining this activity in the next phase of the project.”</p> | <p>Mainstreaming green logistics in policies and plans was an important aspect the project. As indicated above, the inclusion of green logistics concepts in the 14th Five-Year Plan by the Government of Zhejiang Province was an important achievement of the project. An alternative approach to recommending a new activity, would have been to include the mainstreaming of green logistics in the scope of output 1.4. on an “approved follow-up plan for the replication of the applications of the piloted green logistics policies in Zhejiang Province in other provinces and cities.”. While a plan to promote green logistics in the Shanghai and Yangtze River Delta regions was proposed in March 2020, the plan does not elaborate on actions to mainstream green logistics in policies and development plans beyond the Zhejiang Province.¹⁸</p> |

[†] Quoted from Table 3 (pp. 6-7) of the MTR report.

[‡] Quoted from management response to the MTR.

¹⁸ Zhejiang Economic Information Development Co., Ltd. Green logistics policy promotion plan. March, 2020.

4.2.2. Actual stakeholder participation and partnership arrangements

The project developed effective partnerships with stakeholders, especially with businesses and business associations in the logistics industry in Zhejiang Province. Noteworthy partnerships included those with Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. who were instrumental in the implementation of the two demonstration projects. Additional partnerships that supported the implementation of the project, in particular for the elaboration of individual project outputs, included (in alphabetical order):

- China Quality Certification Center;
- Hangzhou Huancheng Environmental Technology Co., Ltd.;
- International Logistics Port Co., Ltd.;
- Shanghai Fuchi Business Information Consulting Co., Ltd.;
- Shanghai Information Center;
- Tianjin Emission Rights Exchange Co., Ltd.;
- Zhejiang Economic Information Development Co., Ltd.;
- Zhejiang Gongshang University Press Co. Ltd.;
- Zhejiang Industrial and Commercial University;
- Zhejiang Institute of Standardization;
- Zhejiang International Freight Forwarding Association;
- Zhejiang Logistics Association; and,
- Zhejiang Technology and Business University.

Partnership with the organizations listed above were, in most cases, based on contractual arrangements for the delivery of specific products commissioned by the project. Other types of collaboration were less frequent and could have been explored further, especially for outreach and dissemination purposes. Notably, the project did not set up a website, configured a newsletter, or disposed of other means to reach out to a broader audience inside and outside the logistics industry in Zhejiang Province. The project did, however, surveyed small- and medium-sized LSPs and provided training to staff of a number of these companies. The project also developed technical guidelines whose intended audience were small- and medium-sized LSPs.

The project's outreach, awareness and training activities did not include gender considerations, including actions to promote the participation of women or women groups.

4.2.3. Project finance and cofinance

The project received a grant from GEF for USD 2,913,700 and committed to mobilize USD 12,130,000 in cofinancing resources. Table 9 summarizes the confirmed financing sources at the start the project:

Table 9. Financing sources at project start

| Source | Name of Source | Type of Support | Amount (USD) |
|---------------------------------|---|-----------------|-------------------|
| GEF | GEF Trust Fund | Grant | 2,913,700 |
| <i>Sub-Total GEF</i> | | | 2,913,700 |
| Cofinancing | | | |
| Local Government | Zhejiang Provincial Government | Cash | 1,000,000 |
| Local Government | Zhejiang Provincial Government | In-kind | 300,000 |
| Local Government | Fuyang City Government | Cash | 2,000,000 |
| Local Government | Fuyang City Government | In-kind | 180,000 |
| <i>Sub-Total Government</i> | | | 3,480,000 |
| Private Sector | Fuyang Hangzhou Transfar Logistics Base Co., Ltd. | Cash/Grant | 210,000 |
| | | In-kind | 3,640,000 |
| Private Sector | Zhejiang Fuyang Port International Co. Ltd. | Cash/Grant | 2,730,000 |
| | | In-kind | 1,820,000 |
| <i>Sub-Total Private Sector</i> | | | 8,400,000 |
| GEF Implementing Agency | UNDP | Grant | 250,000 |
| Total Co-financing | | | 12,130,000 |
| Grand total | | | 15,043,700 |

Source: Report of inception workshop, page 25.

As of February 2020, the project had disbursed USD 2,870,261 (98.5%) of the GEF grant. The budget execution, as compared to planned budgets in annual work plans (AWP), was remarkably good, reporting execution ratios ranging from 84 to 100% (see Table 10). The small discrepancies between planned budgets in AWP and in the ProDoc are explained by a slow start of the project in 2017 and the efforts by the project team to accelerate implementation during 2018.

Table 10. Planned and actual disbursement of GEF resources

| Year | Planned budget in ProDoc (USD) | Planned budget in AWP (USD) | Actual expenditure (USD) | Execution ratio |
|--------------|--------------------------------|------------------------------|--------------------------|-----------------|
| 2017 | 701,000 | 210,000 | 196,000 | 93.3% |
| 2018 | 867,000 | 1,390,500 | 1,384,568 | 99.6% |
| 2019 | 648,500 | 821,100 | 686,208 | 83.6% |
| 2020 | 558,450 | 609,620 | 603,485 | 99.0% |
| Total | | 2,913,700[†] | 2,870,261 | 98.5% |

[†] Total GEF grant and not the sum of planned budgets since undisbursed amounts in previous years are budgeted again in subsequent years.

As noted in Table 9, planned cofinancing was USD 12.13 million from local (city and provincial) governments, private companies and UNDP. During project implementation, no records were maintained of disbursed cofinancing resources and these were not reported in progress reports, either (e.g. QPR, APR, and PIRs). Figures on cofinancing reported by MTR do not seem to have been supported by adequate evidence. The amount of cofinancing realized reported in the GEF tracking tool seems to be mistaken, as it refers to the total project financing at project start (USD 15,043,700) and not to actual cofinancing. Some evidence of disbursed cofinancing could be produced upon request from the TE team, however, significant information gaps persisted and the uncertainty regarding effective cofinancing remained high.

Table 11 presents the best approximation to actual cofinancing that this TE could establish based on the available information. Grants from the Zhejiang Provincial Government and Fuyang City Government to support the implementation of demonstration projects were provided as planned and the evidence is conclusive. It remained unclear if the cash contribution by the Government of Zhejiang Province to policy development, capacity building and promotion activities was made effective. In-kind contributions from

the two private companies implementing demonstration projects were made effective and the demonstrations projects were implemented as planned. It remains unclear if the cash contributions towards trainings and workshops was provided. According to information provided by the project team, UNDP’s cofinancing resources were used to support the initiative on Jingong logistics base and to hire technical experts (including United Nations volunteers) to support the implementation of project activities.

By project end, the amount of actual cofinancing was estimated at USD 20.98 million, exceeding the planned amount of USD 12.13 million.

Table 11. Planned and actual cofinancing resources

| Cofinancing (type/source) | UNDP financing (USD million) | | Government (USD million) | | Private sector (USD million) | | Total (USD million) | |
|---------------------------|------------------------------|-------------|--------------------------|-------------|------------------------------|--------------|---------------------|--------------|
| | Planned | Actual | Planned | Actual | Planned | Actual | Planned | Actual |
| Grants | 0.25 | 0.26 | 3.00 | 3.62 | 2.94 | 0.00 | 6.19 | 3.88 |
| Loans/concessions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| In-kind support | 0.00 | 0.00 | 0.48 | 0.00 | 5.46 | 17.10 | 5.94 | 17.1 |
| Other | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total | 0.25 | 0.26 | 3.48 | 3.62 | 8.40 | 17.10 | 12.13 | 20.98 |

4.2.4. M&E: design at entry, implementation, and overall assessment

Design at entry. The total cost for M&E activities was estimated at USD 102,000, or 3.2% of the total GEF grant. The M&E plan did not allocate financial resources to the measurement of means of verification, which could be regarded as an omission given the complexity of some of the indicators included in the PRF (e.g. indicators on GHG emissions reductions and fuel savings). The M&E plan included in the ProDoc was discussed during the inception meeting held on 24 March 2017. At the workshop the activities and budget for M&E activities were agreed as follows:

- Project Inception Workshop and Report (estimate budget USD 10,000);
- Annual review reports;
- Project Implementation Review (PIR) report;
- Quarterly monitoring of project progress;
- Mid-Term Review (USD 40,000);
- Terminal Evaluation (USD 40,000);
- Project terminal report;
- Annual financial audit (USD 3,000/year); and,
- Site visits.

Implementation. During implementation, the project team prepared AWP’s for 2017-2018, 2018-2019, 2019-2020, and 2020; QPRs for the first three quarters of 2018, 2019, and 2020; APRs for 2017, 2018, and 2019; PIRs in 2019 and 2020. The MTR was conducted during July - August 2019 and finalized on 18 August 2019. The quality of progress reports (i.e. QPRs, APRs, and PIRs) was below average, with some reports missing relevant information. In most cases, reports were repetitive and often provided information without an adequate context. An important shortcoming of the project’s monitoring framework was that QPRs and APRs reported on a set of indicators and activities that did not correspond to the structure of outcomes/outputs/activities set in the ProDoc and made no reference to that structure. The set of indicators and activities used in QPRs and APRs also changed from one report to another. That monitoring and reporting framework is not conducive to effective project management as it does not facilitate the tracking

of progress and may prevent the timely identification of potential problems during project implementation. Only for the QPR for the third quarter of 2020 did project reporting refer to outputs and activities as they were originally formulated in the ProDoc.

The PRF included indicators on GHG emissions reductions and fuel savings at both the objective level and for outcome 2. As described in the MTR report, during project implementation, the methodology proposed in the ProDoc to estimate both emissions reductions and fuel savings was deemed impractical and was modified. The chosen approach for the estimation of GHG emissions reductions was based on a simple extrapolation of the results of the demonstration projects to a sample of LSPs. This method for the estimation of GHG emissions reductions attributable to the project is deemed inadequate since it is unlikely that the results from the demonstration projects could be replicated by a large sample of comparatively small LSPs. As reported by the project, the investments needed for the demonstration projects were substantial and most certainly out of the reach of the LSPs supported by the project. The approach for the estimation of GHG emissions reductions by the project was not documented and none of the inputs and assumptions were described and justified in the calculation spreadsheet. Considering the importance of indicators on GHG emissions reductions to the overall project monitoring and evaluation framework of the project, any changes to the calculation method should have been preceded by the formulation of a robust methodology and its submission to the PSC and GEF implementing agency for review and approval.

The project’s intention to estimate and track fuel savings and GHG emissions reduction is very valid and is worth implementing it in projects like this and others similar to it. However, the complexity of estimating fuel consumption/savings and GHG emissions and emissions reductions from complex logistics systems cannot be underestimated. In that context, a more appropriate approach to the task would have been to include, as part of the project, an output to implement a framework to prepare and update GHG inventories for the logistics industry in Zhejiang Province. That framework, often devised as a measurement, reporting and verification (MRV) system, would have resolved many of the M&E related issues of the project and would have represented a valuable product that would have remained in place after project end.

Ratings. The design, implementation, and overall quality of M&E practices of the project are evaluated on a six-point scale. The ratings are provided in Table 12, below. An explanation of the ratings scale is provided in Annex E.

Table 12. Evaluation ratings of monitoring and evaluation practices

| Monitoring and evaluation | Rating |
|---------------------------|--------|
| M&E design at entry | MS |
| M&E Plan Implementation | MS |
| Overall Quality of M&E | MS |

4.2.5. UNDP implementation/oversight and IP execution, overall project implementation/execution, coordination, and operational issues

UNDP implementation and oversight role. UNDP’s support during project preparation, appraisal and approval was adequate, with no significant delays to project-cycle milestones. No major issues that required UNDP’s intervention were identified during project implementation. The project team valued the support received from UNDP and considered that support in part responsible for the project successes. However, in light of the shortcomings of the project’s implementation of M&E activities, a closer support from UNDP

could have been warranted. Despite that, overall, UNDP’s role during implementation and providing oversight was adequate, timely, and contributed to the success of the project.

Implementing partner role. The project team was efficient and effective planning and implementing project activities. The team was also proactive in seeking, establishing, and maintaining partnerships with key organizations and stakeholders. Procurement processes were well understood by the project team, and there were no major issues implementing procurement processes. Risks were monitored periodically and, other than disruptions from the global COVID19 pandemic, there were no impacts to project implementation from other risks that had been identified in the project’s risk log or not. Internal organization changes within ZPDRC resulted in some delays in the initial appointment of a project manager.¹⁹

Ratings. The roles of UNDP and the implementing partner in project implementation are evaluated on a six-point scale. The ratings are provided in Table 13, below. An explanation of the ratings scale is provided in Annex E.

Table 13. Evaluation ratings of project implementation and oversight

| Project implementation and oversight | Rating |
|---|--------|
| Quality of UNDP Implementation/Oversight | S |
| Quality of Implementing Partner Execution | S |
| Overall quality of Implementation/Oversight and Execution | S |

4.2.6. Risk management

The project risk log had registered four risks related to: (i) stakeholders’ commitments, (ii) replication of project results, (iii) availability of cofinancing resources, and (iv) limits to effective coordination and participation due to conflicting interests. The risks in the project’s risk log were monitored and reported periodically in QPRs, APRs and PIRs. The risk from the global COVID19 pandemic was recorded in the risk log in the QPR for the third quarter of 2020. No other new risks were identified, and the existing risks were not revised during project implementation or during MTR. Other than the impacts from COVID19, no other risk had a significant impact on project implementation.

The actions proposed to manage the risk related to cofinancing (risk number three in the risk log) included the regular monitoring of the delivery of cofinancing resources. Since the monitoring by the project team produced little documentary evidence of the actual delivery of these resources, the implementation of this risk management measures can be regarded as less than satisfactory.

Naturally, the global COVID19 pandemic had an impact on project activities, including on training activities.²⁰ The economic slowdown caused by the pandemic had an impact on the activity-level of the logistics industry, making estimations of fuel consumption and GHG emissions for 2020 not directly comparable to previous years, therefore affecting the final measurement of key project indicators.

The project’s social and environmental safeguards review completed during project appraisal classified the project as low-risk and did not identify any specific risks related to safeguards that had to be monitored during project implementation. No issues related to safeguards were identified during project implementation or by the MTR, and no risks related to safeguards were identified and recorded in the project’s risk log.

¹⁹ Inception report, page 3.

²⁰ QPRs for the second and third quarters of 2020.

4.3. Project Results

4.3.1. Relevance

Energy consumption and GHG emissions from the production, storage, transportation, and delivery of commodities and goods in China are growing at a fast rate, reflecting the country’s rapid economic growth over the past decades and its predominant role as a global manufacturing center and distribution hub. The rapid growth of the logistics industry in the country has presented significant challenges for authorities, companies, and other stakeholder to keep up with the development of new, more efficient, and environmentally sustainable technology and practices. As a result, the logistics industry in China is characterized by lower efficiencies, higher costs and larger environmental impacts compared to industry standards in developed countries. Decoupling GHG emissions from economic growth requires the transformation of the logistics industry in China, to facilitate the adoption of green logistics technologies and practices.

Alignment with national priorities. The project was designed to be consistent with the objectives on energy efficiency and climate change mitigation set in China’s 12th Five-Year Plan (2011 to 2015). The project also considered the Five-Year Plan of the Ministry of Transport, that aimed at further developing the country’s freight and logistics industries. Furthermore, the project contributed to the Ministry’s energy efficiency plan for the road and waterways transportation sub-sector (2015 – 2020). At the Provincial level, the project was aligned to the 12th Five-Year Plan of the Department of Transport and Communications of Zhejiang Province. This plan aimed at reducing fuel consumption form transportation activities in the province.²¹

During project formulation and implementation, relevant policy and regulatory developments regarding green logistics were promoted in China and Zhejiang Province. Among others, during project implementation, green logistics were incorporated in the 14th Five-Year Plan by the Government of Zhejiang Province. Table 14, adapted from a project report on green logistic for small- and medium-sized LSPs²², summarizes other relevant developments.

Table 14. Policies and plans related to the logistics industry in China

| Policy / plan | Promulgation | Relevant provisions |
|--|---|---|
| Medium- and Long-Term Plan for the Development of the Logistics Industry (2014 2020) | State Council 4 October 2014 | Reduce logistics costs, strengthen logistics enterprises, build logistics infrastructure (incl. multimodal transport, logistics park, agricultural product logistics, manufacturing logistics, supply chain, etc.). |
| 13 th Five Year Plan for the Development of Trade Logistics | Ministry of Commerce, Development and Reform Commission, 19 January 2017 | Support to key initiatives including urban and rural logistics networks, logistics platforms, logistics parks, e-commerce logistics, and innovative technologies. |
| Standards for Vehicle-free Carriers | Ministry of Transport, 7 March 2017 | Standardize the monitoring and supervision of vehicle free carriers. |
| Opinions on Accelerating Development of Cold Chain Logistics to Ensure Food Safety and Promote Consumption Upgrade | Office of the State Council, 13 April 2017 | Improve cold chain infrastructure, expand use of information technologies, innovate cold chain logistics technologies, and improve the financial, land, energy price, vehicle traffic support systems. |

²¹ CEO Endorsement Request, Section B.1., pages 12 – 13.

²² China Quality Certification Centre. Energy Efficiency Evaluation Program and Plan for Small and Medium sized Logistics Enterprises in Zhejiang Province. November 2020

| | | |
|--|---|--|
| Action Plan for Promoting Healthy and Stable Development of Road Freight Industry (2017 - 2020) | Ministry of Transport, Development and Reform Commission, 19 September 2017 | Reduce the impacts of road freight transport, innovate freight technologies, maintain a clean environment, and improve working conditions. |
| Special Action Plan for Efficient Distribution in Urban and Rural Areas (2017 - 2020) | Ministry of Commerce, Ministry of Public Security, 19 December 2017 | Improve urban and rural distribution networks and organizations, strengthen technical standards, and promote green development. |
| Notice on Preferential Urban Land Use Tax Policies for Logistics Enterprises' Leasing of Land Used for Bulk Commodity Storage Facilities | Ministry of Finance and State Administration of Taxation, 20 June 2018 | Temporary reduction of land-use tax for bulk commodity warehousing (May 2018 to December 2019). |

Source: Adapted from: China Quality Certification Centre. Energy Efficiency Evaluation Program and Plan for Small and Medium sized Logistics Enterprises in Zhejiang Province. November 2020. pp.12-14.

UNDP strategic priorities. Most QPRs and APRs did not elaborate on the project’s alignment and contribution to UNDP’s strategic priorities. The APR for 2018 was an exception, as it described the project’s contribution to UNDP’s Country Programme Document (CPD) for China (2016 – 2020). Specifically, the project contributed to outcome 2: “More people enjoy a cleaner, healthier environment as a result of improved environmental protection and sustainable green growth.”²³ Furthermore, the QPR for the second quarter of 2020 provided additional details, linking the project achievements to output 2.1. of the CPD’s results framework on “China’s actions on climate change mitigation, biodiversity and chemicals across sectors are scaled up, funded and implemented”.²⁴ While not mentioned in project reports and difficult to quantify, the project did contribute directly to indicator 2.1. of the CPD as it tracks an expected reduction in carbon dioxide emissions per unit of GDP in China.²⁵

GEF focal area. As indicated in section 3.3, the project was aligned to the GEF-5 climate change focal area, specifically under objectives 2 (CCM-2 on energy efficiency in industry and the building sector), and 4 (CCM-4 on energy efficient, low-carbon transport and urban systems). Evidence shows that the project contributed to these focal area objectives as it improved the energy efficiency in buildings (e.g. wine warehouse) and transportation systems.

Sustainable Development Goals. The ProDoc does not discuss the project’s contribution to SDGs. However, the project’s design and results were in fact aligned to Agenda 2030 and contributed to several SDGs:

- SDG 7. Affordable and clean energy
 - Target 7.3. By 2030, double the global rate of improvement in energy efficiency.
- SDG 9. Industry, innovation and infrastructure
 - Target 9.1. Develop quality, reliable, sustainable, and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

²³ APR for 2018.

²⁴ QPR for second quarter of 2020.

²⁵ UNDP Country Programme Document (CPD) for China (2016 – 2020).

- Target 9.4. By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.
- SDG 11. Sustainable cities and communities
 - Target 11.6. By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
- SDG 12. Responsible consumption and production
 - Target 12.2. By 2030, achieve the sustainable management and efficient use of natural resources.
 - Target 12.5. By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.
- SDG 13. Climate action
 - Target 13.2. Integrate climate change measures into national policies, strategies and planning.

4.3.2. Effectiveness

The evaluation of the achievement of results at the outcome and output level is based on the PRF and the revised ToC developed for TE. This section presents a detailed description of the outcomes and outputs delivered under each project component, as defined in the revised ToC (Table 7, section 3.7. above).

Outcome 1. Established and enforced policy, regulations, standards and incentive schemes for the application and operation of green logistics systems in the logistics industry in Zhejiang Province

Table 15. Outcome 1 targets and indicators at end of project

| Outcome indicator and target by end of project | Reported outcome indicators at end of project |
|--|---|
| Indicator 1.1. No. of new provincial government legislation and policies that provide an enabling environment to support green logistics by EOP Baseline: 0 Target: 3 | The project reported four results under the target: ²⁶ <ol style="list-style-type: none"> 1. Zhejiang Green Logistics Development Index 2. Green Storage Comprehensive Energy Consumption and Carbon Dioxide Grade Classification 3. Evaluation Standards for Energy Saving and Carbon Reduction of Green Logistics in Zhejiang Province 4. Green Integrated Storage Carbon Dioxide Emission Accounting Method |

The first result reported under outcome 1, “Zhejiang Green Logistics Development Index” is in fact output 3.6. of the ProDoc on a “designed, endorsed and implemented energy performance rating program and green logistics information sharing system for LSPs in Zhejiang Province”. Without taking away the merit of this critically important project achievement, the index is not a policy or a piece of legislation, but an information and benchmarking tool. As such, the index should be reported as a result under outcome 3 on the improvement of capacities and access to information on green logistics, as originally intended in the ProDoc.

²⁶ PIR for 2020 p. 5.

In a strict sense, results two, three and four reported under outcome 1 are not policies or pieces of legislation, but standards. While the original formulation of the outcome indicator refers exclusively to new “legislation and policies”, a closer review of output 1.2. and activity 1.2.3. clarifies the underlying intentions in the ProDoc, as the description of the output and activity explicitly refers to “standards” in addition to new policies and legislation (see footnote 27). This understanding of the scope of outcome 1 was reflected in the reconstructed ToC prepared as part of this terminal evaluation (see section 3.7).

Under the definition of the scope of outcome 1 described in the preceding paragraph, the three standards produced with support from the project contribute to the target of indicator 1.1. 1: (i) Zhejiang Provincial Standard. Classification of comprehensive energy consumption and carbon dioxide emission of green storage (the second item reported by the project in Table 15), (ii) Evaluation Standards for Energy Saving and Carbon Reduction of Green Logistics in Zhejiang Province (third item), and (iii) Carbon-dioxide emission accounting method of green integrated storage (fourth item).

Additional details on output 1.2. clarify that, as part of outcome 1 and through activity 1.2.2., the project was intended to implement pilot financial schemes to promote the adoption of green logistics by small- and medium-sized enterprises.²⁸ The project developed such a financial incentive plan for small- and medium-sized enterprises, and implemented it in partnerships with Huzhou bank.²⁹ While this financial incentive plan was not reported by the project a result under outcome 1, it should be counted towards its target. Also, according to interviews with members of the project management unit, as part of the work with Huzhou bank to develop financial products, the Tianjin Climate Exchange Co. supported activities to facilitate the participation of LSPs in emissions trading activities in China.

To conclude, four project results contribute to the target of indicator 1.1. under outcome 1:

1. Standard by the Zhejiang International Freight Forwarding and Logistics Association: “Evaluation Standards for Energy Saving and Carbon Reduction of Green Logistics in Zhejiang Province”;
2. Zhejiang Provincial Standard: “Classification of comprehensive energy consumption and carbon dioxide emission of green storage”;
3. Standard by the Zhejiang International Freight Forwarding and Logistics Association: “Carbon-dioxide emission accounting method of green integrated storage”; and,
4. Incentive plan for small- and medium-sized enterprises, implemented in partnerships with Huzhou bank.

Achievements

²⁷ Activity 1.2.3. is defined, in part, as: “Activity 1.2.3: Development and formulation of policies and implementing rules and regulations on the development and support of the logistics industry in Zhejiang Province. This activity involves the process of formulation and adoption of standards, policies and implementing rules that will govern the development and implementation of the green logistics program in Zhejiang Province based on the recommendations in Activity 1.1.1 and 1.1.2. ... The basic outputs of this activity will be incorporated in the Zhejiang Province Green Logistics Plan which will include appropriate standards, policies and implementing rules and regulations...” (ProDoc pp. 22-23).

²⁸ Activity 1.2.2. is defined, in part, as: “Activity 1.2.2: Design and implementation of a pilot financial incentives scheme for small-to-medium size to encourage them to adopt [energy conservation and energy efficiency] technologies and green logistic techniques. Based on the results of studies and recommendations in Output 1.1, a pilot incentive scheme will be set up for small and medium size LSPs to assist them in adopting [energy conservation and energy efficiency] techniques, in general, and green logistics techniques, in particular.”

²⁹ APR for 2019.

Output 1.1. Completed analysis of: (1) the energy use trends and GHG emissions from the operation of the logistics industry (materials management and physical distribution) in Zhejiang Province as basis for formulating policies; and, (2) green logistics systems developed and implemented in other countries and the performance and results of their applications

The project team reported that a survey of 500 small- and medium-sized LSPs (209 actual responses) had been completed in 2018 to evaluate the status of green logistics in Zhejiang Province. The team also visited 27 LSP that had implemented green logistics practices. The team used the information collected in the survey and site visits to assess how the operational and technological characteristics of LSPs had an impact on fuel consumption and GHG emissions.³⁰

The project also completed the following preparatory work related to the development of green policies, legislation, and standards in Zhejiang Province:

- Study on green logistic practices and technologies in China, Europe, Japan, and the United States of America;³¹
- Assessment of green logistics policies in China and other countries (“Research and analysis report on green logistics energy saving and emission reduction policies at home and abroad”);³²
- Evaluated the current status of green logistics in Zhejiang Province, provided arguments on the importance of promoting the adoption of green technologies and practices, and prepared policy-recommendations. The findings were included in a report on “Zhejiang Green Logistics Policy Research Report”;³³
- A summary of policy recommendations was published in a special issue on “Research and Recommendations” a publication of ZPDRC. The title of the article was “Exploration Practice and Countermeasures for Promoting Green Logistics in Our Province”;³⁴
- An assessment of the opportunities for the deployment of green logistic technologies and practices in the Longyou Port Area. The results of the assessment were compiled in a report on “Research Report on the Green Logistics System Planning of Zhejiang Longyou Port Area”;³⁵
- A research on green logistics standards in Zhejiang Province: “Research Project of Green Logistics Standard System of Zhejiang Province”;³⁶ and,
- A report on financing for green logistics in small- and medium-sized LSPs: “Green Finance Support Evaluation and Recommendation Report for the Green Development of Small and Medium-sized Logistics Enterprises”.³⁷

Output 1.2. Formulated, recommended, and implemented standards, policies, incentive schemes and implementing rules and regulations on the promotion and adoption of green logistics the logistics industry in Zhejiang Province.

³⁰ QPR for the second quarter of 2018. Section 4, no page numbers.

³¹ APR for 2017. Section 4, no page numbers.

³² APR for 2018. Section 4, no page numbers, and QPR for the second quarter of 2019. Section 4, no page numbers.

³³ APR for 2018, and QPR for the second quarter of 2019.

³⁴ APR for 2018.

³⁵ QPR for the third quarter of 2019, and APR for 2019.

³⁶ QPR for the first quarter of 2020.

³⁷ QPR for the first quarter of 2020.

As part the work on incentives for green logistics, the project completed the following products:

- An assessment of financial and operations aspects of a potential low-carbon fund to promote green logistics in Zhejiang Province (“Research Report on the Operation Mode of Green Logistics Low Carbon Fund”);³⁸
- A draft standard for energy efficient storage that builds on the experience from the pilot project in the wine warehouse operated by Zhejiang Fuyang Port International Logistics Co., Ltd (“Zhejiang Green Storage Energy Accounting Standard”);³⁹
- A standard on “Green Integrated Storage Carbon Dioxide Emission Accounting Method”;⁴⁰
- A financial incentive plan for the adoption of green logistics by small- and medium-sized companies. Huzhou bank was selected to provide financing for investments in green logistics;⁴¹ and,
- A standard on “Zhejiang Green Logistics Energy Conservation and Carbon Reduction”. The standard was adopted by the China National Institute of Standardization and published on the National Organization Standards Information Platform < <http://www.ttbz.org.cn/>>.⁴²

Output 1.3. Please refer to output 3.7.

Output 1.4. (1.3.) Approved follow-up plan for the replication of the applications of the piloted green logistics policies in Zhejiang Province in other provinces and cities

In 2019, the project completed a report and plan for the promotion of green logistics policies, focusing on the logistic network along the Yangtze River Delta, and covering the provinces of Zhejiang and Shanghai.⁴³ In 2020, the project completed research on the technical and economic feasibility of green logistics technologies and practices in the Yangtze River Delta region.⁴⁴ A “Green logistics policy promotion plan” was completed by the Zhejiang Economic Information Development Co., Ltd. in March 2020. In December 2020, the project facilitated a workshop with representatives from the national government of China and authorities from Zhejiang Province to discuss the project experience and options to replicate the project results in the wider Shanghai – Jiangsu – Zhejiang regions.⁴⁵

Outcome 2. Demonstrated technologies and practices for improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province

³⁸ APR for 2018.

³⁹ QPR for the third quarter of 2019, and APR for 2019.

⁴⁰ APR for 2019.

⁴¹ APR for 2019.

⁴² QPR for the second quarter of 2020.

⁴³ “Research on the Promotion Mode of Green Logistics Policy and Promotion Plan”, APR for 2019.

⁴⁴ QPR for first quarter of 2020.

⁴⁵ Interviews with project stakeholders.

Table 16. Outcome 2 targets and indicators at end of project

| Outcome indicator and target by end of project | Reported outcome indicators at end of project ⁴⁶ |
|--|---|
| Indicator 2.1. % empty load rate of freight transport in Zhejiang Province by EOP Baseline: 50% Target: 10% | 10% |
| Indicator 2.2. Annual fuel savings due to project intervention by EOP Target: 80.06 ktoe/yr | 758.45 ktoe/yr |
| Materials management Target: 30.06 ktoe/yr | 31.59 ktoe/yr |
| Physical distribution Target: 50.00 ktoe/yr | 726.86 ktoe/yr |
| Indicator 2.3. Annual GHG emission reduction by EOP, Target: 471.36 ktCO ₂ /yr | 2,541.97 ktCO ₂ /yr |
| Materials management Target: 317,15 ktCO ₂ /yr | 323.03 ktCO ₂ /yr |
| Physical distribution Target: 154,21 ktCO ₂ /yr | 2,218.94 ktCO ₂ /yr |

The measurement of indicator 2.1. required a new calculation methodology that, by June 2019, had not been developed.⁴⁷ The methodology and calculations of the indicator at the end of the project were not provided to the TE team, and therefore this target could not be evaluated.⁴⁸

The estimated impacts on fuel consumption and GHG emissions from the pilot projects are reported in the document prepared by the Zhejiang Economic Information Development Co., Ltd. in January 2020 and provided to the TE team under the title “2019 Energy Consumption and Carbon Emission Report of Green Logistics Demonstration Project”. The results from the estimations are included in Table 17. As shown in the table, annual fuel savings due to the project interventions were 1,360.85 toe/year, equivalent to 1.7% of the target of 80,060 toe/year recorded in the ProDoc and less than 0.2% of the value of 758,450 toe/year reported in the 2020 PIR. Similarly, annual GHG emissions reductions from demonstration projects were 4,312 tCO₂e/year, or 0.9% of the target of 471,360 tCO₂/yr, and again less than 0.2% of the reported value in the 2020 PIR: 2,541,970 tCO₂/yr.

⁴⁶ PIR for 2020 p. 6.

⁴⁷ PIR for 2019.

⁴⁸ The MTR concluded in July 2019 that the target for indicator 2.1. had been achieved, but the evidence to support that conclusion, if any, was not available during the TE.

Table 17. Fuel savings and GHG emissions reductions from project interventions

| Parameter | Pilot project | |
|--|--|---|
| | Materials management Zhejiang Fuyang Port International Logistics Co., Ltd | Physical distribution Hangzhou Fuyang Transfar Logistics Base Co., Ltd. |
| Baseline annual energy consumption⁴⁹ | | |
| Diesel oil | 1,970.17 t diesel oil/year | 575.89 t diesel oil/year |
| Electricity | 307.67 MWh/year | N.A. |
| Project annual energy consumption⁵⁰ | | |
| Diesel oil | 848.09 t diesel oil/year + | 362.82 t diesel oil/year |
| Electricity | 143.77 MWh/year | N.A. |
| Annual energy savings | | |
| Diesel oil | 1,122.08 t diesel oil/year | 213.07 t diesel oil/year |
| Electricity | 163.90 MWh/year | N.A. |
| Total (toe/year) | 1,145.65 toe/year ⁵¹ | 215.20 toe/year ⁵¹ |
| Annual GHG emissions reductions | | |
| tCO ₂ e/year | 3,641.94 tCO ₂ e/year | 669.66 tCO ₂ e/year |
| Totals | | |
| Annual energy savings | 1,360.85 toe/year | |
| Annual GHG emissions reductions | 4,311.6 tCO₂e/year | |

Source: Elaborated with information in Zhejiang Economic Information Development Co., Ltd. 2020. 2019 Energy Consumption and Carbon Emission Report of Green Logistics Demonstration Project.

The large discrepancies between the targets for fuel savings and GHG emissions reductions set in the ProDoc, and the actual results achieved by the project elicit two questions:

1. Were the targets in the ProDoc too ambitious? and/or,
2. Were the demonstration projects not properly selected?

Based on the evidence, the answer to both questions is most probably yes: targets were too ambitious and the scope of the demonstration projects too small to meet the proposed targets. In light of these facts, the next questions to be asked are:

1. Did the project's M&E framework correctly identify the issue on a timely manner? and/or,
2. Were changes to the project proposed and formally approved?

Based on the available evidence, the answer to both questions is no: neither PIRs, nor the MTR identified the issue and alerted project stakeholders on time. Also, no changes to the targets or activities were proposed and formally adopted to address the issue.

Output 2.1. Completed designs of energy efficient materials management demonstrations focusing on using energy efficient materials management systems in packaging, warehousing, cold storage, etc., in the logistics industry in Zhejiang Province

The pilot project on energy efficient materials management was implemented by Zhejiang Fuyang Port International Logistics Co., Ltd. in a wine warehouse.⁵² The project contributed experts who provided inputs

⁴⁹ Energy consumption and GHG emissions under the project scenario. No details are given on the baseline scenario.

⁵⁰ Energy consumption and GHG emissions under the project scenario. No details are given on the baseline scenario.

⁵¹ Conversion factors: 1 MWh = 0.0859 toe, 1 t diesel oil = 1.01 toe

⁵² QPR for the second quarter of 2018.

on energy efficiency aspects to the design of the warehouse.⁵³ The pilot project incorporated energy and water saving technologies for the building envelope, HVAC system, automatic lighting, temperature and humidity controls, rainwater collection and automatic solar irrigation systems, among others.

Output 2.2. Completed designs of energy efficient physical distribution demonstrations focusing on integrated multi-modal transport systems and reduction of empty load rates in the freight transport operations of the logistics in Zhejiang Province

The project contributed to the feasibility studies and implementation plans of the pilots on physical distribution at Zhejiang Fuyang Port International Logistics Co., Ltd. and Hangzhou Fuyang Transfar Logistics Base Co., Ltd. The former implemented actions for the distribution of merchandises along waterways, the later invested in road-based distribution assets.⁵⁴

The technologies installed by Zhejiang Fuyang Port International Logistics Co., Ltd. allow for the integration of different modes of transportation over sea, river, rail, and road, combined with information technologies to track cargo and optimize delivery taking into consideration parameters on energy consumption and GHG emissions. The pilot project implemented by Hangzhou Fuyang Transfar Logistics Base Co., Ltd. introduced a logistics information management system that optimizes train scheduling and tracking, reducing idling time and fuel consumption.

Output 2.3. Installed and fully operational green logistics-based centralized logistic platform in Fuyang City, Zhejiang Province

According to clarifications provided by project stakeholders, the proposed logistic platform was implemented as part of the demonstration projects on physical distribution systems by Zhejiang Fuyang Port International Logistics Co., Ltd. and Hangzhou Fuyang Transfar Logistics Base Co., Ltd. (see output 1.4).

Output 2.4. Operational green logistics-based physical distribution system demonstration project in Zhejiang Province

The pilot projects on physical distribution systems at Zhejiang Fuyang Port International Logistics Co., Ltd. and Hangzhou Fuyang Transfar Logistics Base Co., Ltd. were completed and commissioned in 2018.⁵⁵ Interviews with project stakeholders highlighted the innovative nature of the measures adopted by the demonstration projects.

Output 2.5. Documented annual evaluation reports on the energy performance and environmental impacts of each demo project in materials management and physical distribution, and documented and disseminated demo project results

In 2019, Hangzhou Fuyang Transfar Logistics Base Co., Ltd. and Zhejiang Fuyang Port International Logistics Co., Ltd. started estimating GHG emissions reductions from the demonstration projects.⁵⁶ A report on the environmental performance of the pilot project was completed later that year.⁵⁷

⁵³ QPR for the first quarter of 2018.

⁵⁴ QPR for the third quarter of 2018 and APR for 2018..

⁵⁵ APR for 2018.

⁵⁶ QPR for the first and third quarters of 2019.

⁵⁷ APR for 2019.

In 2020, the project completed energy and environmental performance reports for the demonstration projects in Zhejiang Fuyang Port International Logistics Co., and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Results were compiled in a report on “Energy Consumption and Carbon Emission Report for the Green Logistics Demonstration Project 2019”.⁵⁸

Output 2.6. Developed action plan for sustainability of the green logistics system demonstration program

A green logistics promotion plan was completed and in under implementation by the Shanghai Economic Information Center. The purpose of the plan is to promote green logistics technologies and practices in Shanghai Province.⁵⁹

Outcome 3. Improved capacities and access to information on green logistics systems among authorities and LSPs in Zhejiang Province

Table 18. Outcome 3 targets and indicators at end of project

| Outcome indicator and target by end of project | Reported outcome indicators at end of project ⁶⁰ |
|---|---|
| No. of logistics companies actively employing green logistics technologies and techniques in their materials management operations by EOP Baseline: 0 Target: 100 | 105 |
| No. of logistics companies actively employing green logistic technologies and techniques in their physical distribution operations by EOP Baseline: 0 Target: at least 50 | 99 |

As recorded in the ProDoc, the baseline value for the indicators on the number of LSPs employing green logistics practices and technologies was zero. However, a survey implemented by the project during the first quarter of 2018, showed that the levels of adoption of green logistics practices and technologies was higher than zero.⁶¹ These findings brought to light a causal attribution problem of the project design in the sense that, without clear criteria to count individual enterprises towards the targets of outcome 3, the project risked reporting impacts that should not be attributed to it. In other words, the project may have risked counting towards the target of outcome 3, companies that had adopted green logistics technologies and practices without an input from the project. The issue of causal attribution is further complicated by the fact that project reports describe how LSPs were selected as pilots, but not the type of support they received to adopt green logistics technologies and practices and therefore be counted towards the target of outcome. The methodology for this TE intended to address the causal attribution issue by means of a new survey of LSPs. Unfortunately, a list of LSPs that were counted towards the targets could not be produced by the project team.

⁵⁸ QPR for the second quarter of 2018.

⁵⁹ Interviews with members of the project management unit.

⁶⁰ PIR for 2020 p. 6.

⁶¹ QPR for the first quarter of 2020.

Output 3.1. Completed assessment report on capacity development needs in the area of green logistics and developed green logistics capacity building program

The project completed the assessment of capacity development needs in the logistics industry as part of the survey to LSPs completed in 2018 (see description under output 1.1.). An internal report of the findings of the survey was produced ("Zhejiang Province Green Logistics Capacity Building Demand Analysis Report")⁶², but it was not disseminated. The report was the basis for the definition of the contents of the training program to be provide to LSPs.

Output 3.2 Completed green logistics training courses for government authorities and relevant stakeholders in the logistics and manufacturing industries in Zhejiang Province (e.g., concepts, practices, methodologies)

Initial training sessions for LSPs were completed in 2018, in collaboration with the Zhejiang Province Association of Logistics and Purchasing. The topics of the training included green logistics policy, concepts, standards, technologies and practices. Approximately 70 LSPs participated in the training.⁶³

Additional training sessions for manager of LSPs were completed in October 2019, at the Zhejiang Vocational and Technical College of Communications⁶⁴, and in November 2020, in collaboration with the Zhejiang Economic Information Center and the Zhejiang Logistics Association.

Further training sessions were impacted by the global pandemic and had to postponed/cancelled.⁶⁵

Output 3.3. Completed technical assistance program for assisting small-to-medium size LSPs on the application of green logistics systems

As part of the training program, the project completed the following training materials:

- Training materials for the capacity building activities on green logistics for small- and medium-sized LSPs were completed in 2019.⁶⁶ The delivery of these materials could have been programmed earlier in the project implementation, since training activities had already started in 2018;
- A technical guide on green logistics technologies and practices prepared by the Zhejiang Economic Information Center and published as “Green Technology Application and Practice Guide for Zhejiang Logistics Enterprises”, in January 2020; and,
- An overview of the main concepts and status of implementation of green technologies and practices in Zhejiang Province. The overview was published under the title “Zhejiang Modern Logistics - Green Logistics Special Issue”.⁶⁷

Output 3.4. Completed promotional workshops and/or activities to enhance awareness and knowledge in green logistics systems

The knowledge and communication products delivered by the project include:

⁶² APR for 2018., and QPR for the second quarter of 2018.

⁶³ APR for 2018.

⁶⁴ APR for 2019.

⁶⁵ Interviews with PMU members.

⁶⁶ APR for 2019.

⁶⁷ APR for 2018.

- A video to promote green logistics: “Green Logistics in Zhejiang”;⁶⁸ and,
- A seminar on Zhejiang-Shanghai Integrated Green Logistics.⁶⁹

Considering the large number of LSP in Zhejiang Province and elsewhere in China, the project could have opted for maintaining a website to inform stakeholders of project activities, and to disseminate knowledge products.

Output 3.5. Completed and fully evaluated program for the promotion and capacity building of green logistics systems

The program on capacity building for the adoption of green logistics technologies and practices for small- and medium sized enterprises was completed in 2019.⁷⁰ That year, the project also completed an “Analysis and evaluation report on the effect of green logistics capacity building evaluation of the capacity building activities”⁷¹. Given that few of the project’s capacity building activities had taken place by that time, it isn’t clear what effects this evaluation could have captured and analyzed.

The project adopted an updated capacity building plan for 2020.⁷²

Output 3.6. Designed, endorsed and implemented an energy performance rating program and green logistics information sharing system for LSPs in Zhejiang Province

The “Zhejiang Green Logistics Development Index” was launched in March 2019 and a conference was organized to promote it. Representatives from UNDP China, the Provincial Development and Reform Commission, the Provincial Department of Finance, the Provincial Department of Transportation, the Provincial Statistics Bureau, and others, attended the event.⁷³ Later during 2019, the project participated in the preparation of a proposal for the publication of the index. The proposal was approved by the Deputy Governor of Zhejiang Province, acknowledging the innovative aspects of the work supported by the project.⁷⁴ A guide for the implementation of the index in small- and medium-sized LSPs was completed in 2019.⁷⁵ A conference on the index was also held in April 2020.⁷⁶

Output 3.7. Published and disseminated guides and reference documents for the application of energy conserving and energy efficient practices in the logistics industry (originally output 1.3)

The project completed the following products on the application of green logistics practices and technologies:

- “Energy conservation emission reduction accounting methods due to implementation of green logistics projects in Zhejiang Province”⁷⁷;

⁶⁸ QPR for the third quarter of 2019.

⁶⁹ Interview with members of PMU.

⁷⁰ APR for 2019.

⁷¹ APR for 2019.

⁷² “Green Logistics Capacity Building Plan for Zhejiang Small and Medium-sized Logistics Enterprises in 2020”, QPR for the first quarter of 2020.

⁷³ QPR for the first quarter of 2019.

⁷⁴ QPR for the third quarter of 2019, and APR for 2019.

⁷⁵ APR for 2019.

⁷⁶ QPR for the second quarter of 2020.

⁷⁷ APR for 2017.

- “Statistical methods for the total amount of greenhouse gas emissions from logistics enterprises in Zhejiang Province”⁷⁸;
- “Application guide for green logistics technology of small and medium-sized logistics enterprises in Zhejiang Province”⁷⁹; and,
- “Application guide of energy saving and carbon reduction technology for small and medium-sized logistics enterprises in Zhejiang Province”⁸⁰

Project objective and goal

Table 19. Project objective and goal targets and indicators at end of project

| Indicator and target by end of project | Reported indicators | |
|---|------------------------------------|-----------------------------------|
| | 2019 PIR ⁸¹ | 2020 PIR ⁸² |
| Project goal | | |
| Cumulative CO ₂ emission reduction by EOP Baseline: 0 Target: 1,749,270 tCO ₂ | 2,808,080 tCO ₂ | 5,083,670 tCO ₂ |
| Reduction in the annual growth rate of GHG emissions by EOP Baseline: 0 Target: 3% | 50% for two demonstration projects | 20% for two demonstration project |
| Project objective | | |
| Cumulative fuel savings due to project intervention by EOP Baseline: 0 Target: 296,240 toe | 765,370 toe | 1,516,911 toe |
| No. of jobs created with the application of green logistics techniques in the logistics industry in Zhejiang Province by EOP Baseline: 0 Target: at least 1,000 | 678 | 1,326 |

As described in section **Error! Reference source not found.**, during project implementation, the approach for the calculation of GHG emissions reductions was modified. The new approach, based on the extrapolation of results from the two demonstration projects, is not considered adequate for the estimation of GHG emissions reductions attributable to the project. Given that direct emissions reductions from the two demonstration projects were measured at 4,312 tCO₂e/year, it is unlikely that total annual GHG emissions reductions could have been more than 500 times higher than that, at 2,3 – 2.8 million tonnes of

⁷⁸ APR for 2017.

⁷⁹ APR for 2018.

⁸⁰ APR for 2019.

⁸¹ PIR for 2019.

⁸² PIR for 2020.

CO₂e per year. Likewise, since annual fuel savings from the demonstration projects were measured at 1,360.85 toe/year, it is not likely that total annual fuel savings due to the project could be 500 times that.

In conclusion, due to shortcoming of the project’s monitoring framework, this TE could not draw a conclusion about the project’s progress towards the goal of reducing GHG emissions.

4.3.3. Efficiency

Efficiency is a performance measure of the timeliness and cost-effectiveness of the implementation of planned activities and the delivery of outputs and outcomes. Efficiency gains can be achieved through the implementation of cost- and time-saving measures, the use of existing systems to support project implementation, securing the support from partnerships, and deploying human and financial resources wisely. Conversely, efficiency can be affected by factors including administrative and management delays, new or unfamiliar procedures, or skills gaps.

Overall, the project was implemented according to schedule, with only minor delays in the hiring of the project manager at project start, and inevitable impacts due to the global COVID-19 pandemic towards the end of the project. The development of standards under component one, progressed quickly so that they could be adopted and published within the project’s timeframe. Both demonstration projects were designed and implemented promptly, allowing time for the monitoring and reporting of their performance, which is considered a key project output (i.e. output 2.5.). Trainings under component 3 could have been delivered earlier, to better link the result from these training to activities to support the adoption of green logistics technologies and practices by LSPs. Likewise, training materials prepared under output 3.3. could have been produced earlier, to be used in training and awareness raising activities (for example, the “Green Technology Application and Practice Guide for Zhejiang Logistics Enterprises” was only published in 2020, when most trainings had been completed).

The project team was efficient planning and disbursing financial resources, resulting in satisfactory annual execution ratios between 84 and 100% (see section 4.2.3). The discussion of the applicable procurement and contract management procedures during project inception was a contributing factor to the satisfactory performance of the financial management aspects of the project.

The project team built effective partnership with project stakeholders that contributed to an efficient implementation of project activities and the delivery of project outputs. Among others, the partnerships with China Quality Certification Center, Zhejiang Economic Information Development Co., Ltd., and the Zhejiang Logistics Association contributed to the timely delivery of project outputs.

4.3.4. Overall project outcome

The overall project outcome is rated on a six-point scale, based on the ratings for relevance, effectiveness and efficiency. The ratings are provided in Table 20, below. An explanation of the ratings scale is provided in Annex E.

Table 20. Evaluation ratings of project relevance, effectiveness, efficiency, and overall outcome

| Assessment of outcomes | Rating |
|-------------------------|--------|
| Relevance | S |
| Effectiveness | S |
| Efficiency | S |
| Overall project outcome | S |

4.3.5. Sustainability: financial, socio-political, institutional frameworks and governance, environmental, and overall likelihood

Sustainability refers to the likelihood that the project's positive effects will be maintained after the project has closed, ending external funding and assistance. Sustainability is evaluated in terms of the identifiable risks that could affect the continuation of such positive effects. The risks to sustainability are assessed in four areas: (i) financial, (ii) socio-political, (iii) institutional frameworks and governance, and (iv) environmental.

Financial sustainability. Individual LSPs will continue to be the main driving force for the widespread adoption of green logistics technologies and practices. LSPs will make investment decisions based on the prevailing business environment and the available information available about the costs and comparative advantages of these technologies and practices. While the views from interviewees were not unanimous, most stakeholders consulted during this evaluation considered that, through pilot projects and research, the project has demonstrated the financial and operational benefits from green logistics. In the highly competitive environment of the logistics industry, those benefits are highly valued by enterprises and weigh heavily in their investment decisions. A decisive factor is, then, the degree to which the evidence of those benefits was disseminated among industry stakeholders and how easily they can incorporate that knowledge into their investment analysis. Evidence shows that, to a point, the project disseminated the knowledge generated by pilot demonstrations and research. Going forward, to ensure the sustainability of project results, project partners would need to play a role in disseminating this knowledge further, and in generating new information. Fortunately, the project built partnerships with key stakeholders (i.e. Zhejiang Logistics Association) who could play that role. Therefore, the rating for financial sustainability is likely (L).

Socio-political sustainability. Stakeholders, including LSPs and government authorities, have an interest in expanding the deployment of green logistics technologies and practices. As discussed above, these technologies and practices have financial and operational characteristics that the benefit enterprises that adopt them. Authorities are interested in the contribution of green logistics to business competitiveness, energy security, environmental quality, and climate change mitigation. The public's awareness and attitudes towards green logistics have not been assessed by the project or the evaluation team, but there is no evidence that they could be against it. The socio-political sustainability is rated as likely (L).

Institutional frameworks and governance. During the formulation and implementation of the project, the Government of China and the Government of Zhejiang Province incorporated concepts on green logistics in relevant policies and plans, including the 14th Five-Year Plan by the Government of Zhejiang Province⁸³ (Table 14 summarizes these developments). By themselves, these actions do not guarantee sustainability, but they signal a keen interest in furthering the adoption of green logistics technologies and practices. Interviewees considered that the inclusion of green logistics in the Province's Five-Year Plan will have a meaningful impact on the future of the energy efficiency performance of this industry.

Direct financial incentives played an important role in the implementation of pilot projects under component two of the project. Consultations with stakeholders during this TE pointed to a likely continuation of these benefits in the immediate future. For example, stakeholders indicated that there are now financial incentives from the government that are available to LSPs to investment in low-carbon vehicles. Providing technical assistance to LSPs (especially small- and medium-sized companies) is an important supporting role in the promotion of green logistics. Consultations with stakeholders did not

⁸³ APR for 2019.

identify a stakeholder who would likely take on this role in the future. The rating for sustainable regarding institutional frameworks and governance is moderately likely (ML).

Environmental. Green logistics technologies and practices have environmental benefits in terms of energy savings, air quality, and waste management. Practices related to green buildings have additional benefits on water efficiency, indoor-air quality, waste management, and others. No significant, negative environmental impact from green logistics and practices promoted in Zhejiang Province had been identified. In conclusion, the environmental sustainability is likely (L).

Each assessed area of sustainability is individually rated on a four-point scale from unlikely (U), to likely (L). Based on the rating of individual areas, the overall likelihood of sustainability is ranked on the same four-point scale. The ratings are provided in Table 21 Table 20, below. An explanation of the ratings scale is provided in Annex E.

Table 21. Evaluation ratings of sustainability

| Assessment of sustainability | Rating |
|---|-----------|
| Financial | L |
| Socio-political | L |
| Institutional frameworks and governance | ML |
| Environmental | L |
| Overall likelihood | L |

4.3.6. Country ownership

The Governments of Zhejiang Province and Fuyang City participated in the formulation and implementation of the project. Their support to the project has been demonstrated in many instances, for example, the Government of Zhejiang Province and Fuyang City contributed significant cofinancing resources for the implementation of demonstration projects. ZDRC was a member of the PSC and participated actively in meetings and decisions. At important milestones, including the launch of the Zhejiang Green Logistics Development Index, the Government of the Province expressed support for the project’s initiatives, including by the Deputy Governor and the Director of Development and Reform Commission.⁸⁴ As indicated in the preceding section on institutional frameworks and governance, the national Government and the Government of Zhejiang Province have included green logistics in key policies and plans. Results from the project, especially from pilot demonstration projects under component 2, were showcased at the Chinese pavilion at the 24th Conferences of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC).⁸⁵

4.3.7. Gender equality and women’s empowerment

The project did not have a strong focus on gender equality. The ProDoc only referred to gender issues when discussing environmental and social safeguards. Project reports discussed tangentially gender equality, with no specific actions to promote the participation of women in project activities, especially in training activities (reports on training activities do not present information on the gender distribution of participants). As discussed in Table 8 (section 4.2.1 on adaptive management), the issue of the role of

⁸⁴ QPR for the second quarter of 2019.

⁸⁵ APR for 2019 and interviews with PMU members.

women in the logistics industry was raised by the MTR, however, as it was presented in the MTR report, the recommendation was not conducive to corrective actions by the project within the available time frame.

4.3.8. Cross-cutting issues

As discussed in section 4.3.1, the project made direct contributions to outcome 2., output 2.1. and indicator 2.1. of UNDP's CPD for China (2016 – 2020) on environmental protection and green growth, climate change action, and GHG emissions, respectively. The project was not necessarily aligned with other priorities in the CPD, especially those under outcome 1 (i.e. poverty eradication, inequality reduction, disadvantage and vulnerable groups). The project did, however, took advantage of the opportunity to contribute to international and South-South cooperation (outcome 3 of the CPD). The project's results on the demonstration of green logistics are applicable to other countries, and the project team made efforts to disseminate best practices on green logistics in the context of activities for the promotion of the Belt and Road Initiative (see discussion in Table 8 on MTR recommendations and management responses).

As discussed in section 4.3.1., the project contributed to five SDG: SDG 7. Affordable and clean energy, SDG 9. Industry, innovation and infrastructure, SDG 11. Sustainable cities and communities, SDG 12. Responsible consumption and production, and SDG 13. Climate action

Since there were no risks from safeguards identified, the project had little opportunity to mainstream social and environmental priorities in the context of managing safeguards' risks.

4.3.9. GEF additionality

GEF additionally was not assessed since the project was approved before December 2018.

4.3.10. Catalytic role / replication effect

The project's approach to replication was based on two complementary strategies: mainstreaming green logistics in development plans and generating and disseminating knowledge on green logistics technologies and practices. The first strategy successfully incorporated concepts of green logistics in planning at the national and provincial level, including the 14th Five-Year Plan by the Government of Zhejiang Province⁸⁶ During project preparation and early implementation, a number of policies and plans were adopted by the national and provincial government to enable the adoption of green logistics and practices. Table 14 summarizes these policies and plans and the provisions that are relevant to the widespread adoption of green logistics.

The second strategy, on knowledge transfer, produced standards, guidelines, and evidence from demonstration projects. Examples of key knowledge products delivered by the project include:

- Evaluation Standards for Energy Saving and Carbon Reduction of Green Logistics in Zhejiang Province;
- Green Integrated Storage Carbon Dioxide Emission Accounting Method;
- Green Logistics Technology Application Guide for Zhejiang Logistics Enterprises; and,
- Zhejiang Green Logistics Development Index.

⁸⁶ APR for 2019.

4.3.11. Progress to impact

The evaluation found evidence that the project had a strong positive impact on the adoption of green technologies and practices in Zhejiang Province. Considerations on green logistics have been mainstreamed in planning process, including the 14th Five-Year Plan by the Government of Zhejiang Province, evidencing political support for these technologies, and providing a signal to stakeholders about the relevance of accelerating the transition to green logistics.

Stakeholders interviewed by the evaluation team described some aspects of the transformation process of the logistics industry in Zhejiang Province in recent years. This transformation has improved operational efficiency, resulting in lower energy consumption and GHG emissions. Most notably, stakeholders noted the industry's increasing reliance on information systems for the planning and monitoring of distribution operations. During interviews, members of the project team and stakeholders also indicated that they have already observed the changes in behaviors and attitudes towards green logistics that are required for the widespread adoption of green technologies and practices. For instance, interviewees cited increased awareness about green logistics among employees of pilot companies and the fact that these employees now routinely identify and implement measures to reduce energy consumption and GHG emissions. Interviewees had also observed that employees take pride in their own capacities to contribute to energy efficiency and climate change mitigation in their places of work.

As described in section 4.3.2, the evaluation could not verify the project's overall impact on GHG emissions reductions. However, the evaluation could verify a contribution to GHG emissions reductions at the output level, from the implementation of the two pilot projects on efficient materials management and physical distribution. While the impact from the pilot projects fell short of the estimates in the ProDoc, the evaluation did find evidence that green technologies and practices had been replicated by other LSPs in Zhejiang Province. The adoption of green technologies and practices by LSPs most likely contributed to GHG emissions reductions, even if a reliable, quantified estimation was not produced. As the transformation of the industry in Zhejiang Province towards green logistics continues, it is expected that it will have a positive effect on the trajectory of GHG emissions from the industry.

5. Conclusions, recommendations and lessons

5.1. Conclusions

The GLIZP project was conceived to accelerate the adoption of green logistics technologies and practices by the logistics industry in Zhejiang Province. This evaluation found evidence of the relevance of this objective to China's development and climate change priorities, to UNDP's strategic priorities in the country, and to GEF's strategy under the facility's climate change focal area. The project was found to be aligned to and having contributed to the objectives of development plans at the national and provincial level. Moreover, the project was able to have a positive influence on development planning processes, as it contributed to mainstreaming concepts on green logistics into policies and development plans, most notably the 14th Five-Year Plan by the Government of Zhejiang Province.

The project design chose a barriers removal approach that was implemented along three pathways: (i) removing policy and regulatory barriers, (ii) increasing the level of confidence about green logistic by, inter alia, on-the-ground piloting and evaluating the performance of green logistics technologies and practices, (iii) building the capacities of LSPs and improving access to knowledge related to green logistics. This evaluation concluded that the approach chosen by the project was sound and appropriate, and that the proposed outputs and activities were coherent and adequate to implement it.

This evaluation concluded that the project was implemented efficiently, adhering to AWP, achieving satisfactory disbursement rates, and without suffering major time delays. Interviews with project stakeholders indicated that the project team was skilled and effective at implementing the project activities and resolving emerging issues.

Effective partnerships with stakeholders were deemed central factors to the project's results and success. Both companies participating in demonstration projects under component two, Fuyang Hangzhou Transfar Logistics Base Co., Ltd. and Zhejiang Fuyang Port International Co. Ltd., showed diligence in the implementation of the pilot projects in their facilities, and openness to measuring and reporting the performance of their investments. The financial contributions to these demonstration projects by the Governments of Zhejiang Province and Fuyang City were materialized as planned. The partnership with Zhejiang Logistics Association was also fruitful, enabling the project's outreach to LSPs in Zhejiang Province and contributing to the strengthening of the capacities of LSPs to adopt green logistics technologies and practices. The collaboration with the Zhejiang Standardization Research Institute produced relevant technical standards, which turned out to be the key result under the project's component on removing policy and regulatory barriers.

Throughout the evaluation, it was observed that monitoring and reporting were the most significant weakness of the project design and implementation. The project's monitoring framework was found to have shortcomings that were not adequately identified and addressed during project implementation. The project did not include a detailed methodology for the estimation of GHG emissions reductions as part of the ProDoc and an robust methodology was not developed during project implementation. In the absence of such a methodology, the project did not adopt the necessary processes to capture information on GHG emissions from the logistics sector in Zhejiang Province. The shortcomings of the project's approach to assess GHG emissions and emissions reductions did, unfortunately, obscure the real positive impacts from the project activities on the GHG emissions trend of the logistics industry in Zhejiang Province. The project's framework for measuring and reporting progress under component three was also found to have shortcoming. The project's proposed approach of tallying LSPs that had adopted green logistics technologies and practices should have been adjusted during project implementation as it became evident, through project surveys, that the baseline of companies having adopted these technologies was not zero as originally proposed in the ProDoc. Confronted with this evidence, the approach to measuring results under component three should have been revised to prevent the causal attribution issue that was identified during this evaluation. Lastly, reporting processes, including the preparation by the project team of QPRs, APRs, and PIRs and their review by UNDP, produced reports with substantial weaknesses. QPRs and APRs reported against indicators that did not relate directly to indicators, outputs or activities that were contained in the ProDoc and especially not in the PRF. Reports were also repetitive and in several cases were missing relevant information or provided information without adequate context.

The sustainability of the project outcomes was deemed as likely by this evaluation. The evaluation found evidence, including through interviews with various stakeholders, that the transformation of the logistics industry in Zhejiang Province towards green technologies and practices is well underway and expected to persist. The project made meaningful contributions to this transformation and, through partnerships with stakeholders, these contributions are likely to have lasting effects. To ensure that this is the case, this evaluation recommends that the project team and stakeholders formulate and agree on a written exit strategy for the project that lays out the tasks and responsibilities of project partners following project closure.

5.2. Recommendations

Table 22 summarizes the recommendations that the evaluation team would like to put forward for the consideration of the project team and UNDP.

Table 22. Recommendations summary table

| No. | Recommendation | Entity Responsible | Timeframe |
|-----|---|---------------------------------|------------------------|
| 1 | <p><u>Finalize project completion report</u> The experiences by the project have a remarkable potential for replication within China and abroad. The approaches to the promotion of green logistics pioneered by the project could be readily upscaled with support from national governments, national or multilateral development banks, and sources of international climate finance such as the Green Climate Fund. The evaluation team recommends that, to contribute to the achievement of this potential, the project team finalizes a comprehensive and well-written project completion report. The report should provide a critical review of the project experiences, emphasizing on lessons learned, and opportunities for improvement by subsequent replication initiatives. The completion report should be professionally translated and be widely disseminated, with support from UNDP.</p> | Project team, supported by UNDP | Before project closure |
| 2 | <p><u>Formulate exit strategy</u> The terminal evaluation concluded that it is likely that project results will remain after project's end. However, there is no formal plan to secure that this will be the case. Also, the sustainability of some specific elements of the project's strategy is more uncertain – for example, the provision of technical assistance to small- and medium-sized logistics services providers –. The evaluation team recommends that the project team convenes project stakeholders to discuss and adopt an exit strategy that clarifies the objectives and roles for the continuous support to the adoption of green logistics technologies and practices after project closure.</p> | Project team, supported by UNDP | Before project closure |
| 3 | <p><u>Strengthen reporting processes</u> UNDP has an opportunity to review and strengthen their role supporting project teams monitoring and reporting project progress. The evaluation team suggests that, as part of the proposed review, UNDP discuss procedures to improve, inter alia, (i) the validation of monitoring and evaluation frameworks, including baselines, at project inception; (ii) the periodic monitoring and reporting of the contribution of cofinancing resources, including the recording of appropriate evidence; and (iii) the preparation and communication of high-quality quarterly and annual progress reports that effectively support project management and oversight.</p> | UNDP | 2021 |

5.3. Lessons learned

The project on “Greening the Logistics Industry in Zhejiang Province” generated experiences and lessons that are relevant for future projects on green logistics and other emerging fields for the deployment of low-carbon technologies. Some of the lessons learned from the project include the following:

- Partnerships with strong champions within the industry were a key success factor for the project in Zhejiang Province. These partnerships enabled the efficient implementation of the demonstration projects, which were seen by stakeholders as the main result from the project. The demonstration projects contributed to improving the understanding of green logistics technologies and practices in a novel context and served as an example to other early adopters. Securing these partnerships during project preparation prevented delays during implementation and is an approach to be followed by other projects demonstrating new technologies under time constraints.
- Stakeholders noted that the project focused on a limited number of different types of LSPs, therefore only a fraction of all possible applications of green technologies and practices could be evaluated and promoted. Future initiatives on the promotion of green logistics would benefit from completing during project design an overview of green technologies and practices that maps existing experiences and identifies candidate technologies for demonstration with the best potentials for success and replication.
- International chief technical advisors (CTAs) advise project management units and provide technical expertise to ensure high-quality project activities and results. CTAs can also recommend international best practices, facilitate partnerships to exchange knowledge and experience, and support the monitoring and reporting functions of a project. CTAs can support monitoring functions, including the development of robust methodologies for measuring key project indicators (incl. GHG emissions). The evaluation team recommends that projects implementing activities in innovative areas, such as the GLIZP project, consider the option of including the role of international CTAs as part of their implementation arrangements.
- Indicators in the project results framework of the GLIZP project had a strong focus on higher level results in terms on fuel savings and GHG emissions reductions. While these are critically important parameters to evaluate the cost-effectiveness of climate change mitigation projects and to track their progress towards results, the evaluation team considers that these indicators should also be accompanied by other indicators at lower levels to track the delivery of key outputs and to measure shorter-term results. Such a balanced set of indicators support project teams during implementation as they provide a better structured framework for planning and implementing activities. A balanced set of indicators also facilitates the oversight function by implementing agencies.

Annex A. Terminal evaluation terms of reference

Terms of Reference for the Terminal Evaluation

1. Introduction

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 Greening the Logistics Industry in Zhejiang Province (GLIZP) (PIMS #5238) implemented through the Zhejiang Economic Information Center (Zhejiang Project Office). The project started on the 3rd Jan 2017 and is in its fourth year of implementation. The TE process must follow the guidance outlined in the document ‘Guidance for Terminal Evaluations of UNDP-supported GEF-financed Projects’.

2. Project Background and Context

For a country like China, which for the past 2 decades has been experiencing rapid economic growth, activities such as the production, handling, storage, and physical delivery of products/goods (including raw materials) have increased significantly. Trucking, the most common, yet the most energy inefficient form of freight/cargo transport, accounts for 75% of the annual total volume of freight transport in China (compared to 75% by rail in the USA). Currently, the logistics industry in China faces lots of problems, including non-standard supply chain equipment, low truck availability, low quality of diesel fuel due to the difference between China’s crude oil standards and international standard and long loading time. As a result, operational expenses (mainly on energy consumption for physical distribution, i.e., freight transport; and materials management, i.e., inventory carrying) in China’s logistics industry account for 18.3% of the GDP, compared with 6% in Germany and 5% in France.

To cope up with the rapid economic growth, logistics infrastructure investments have been spectacular; in the last five years. China has spent more than about US\$1.5 trillion on 639,000 km of new roads, 33,000 km of new freeways and 15,500 km of new railway lines. It has created 1,700 deep water ports and 170 airports. But all of these are not integrated. As a result, despite of these huge investments, the logistics efficiency in China is very low compared to that in other countries. National average empty truck load is 50% to 60%. Also, average fuel consumption per distance by trucks is about 30% higher than those in the developed countries. The logistics across China cost a massive 18% of GDP in Q1 2012, about double that of developed countries. China’s higher logistics cost is related to the capacity and skills of its logistics services providers (LSPs). The country’s LSPs are yet to progress further towards added value and more sophisticated services. The logistics industry is fragmented, with more than 1,000 “unskilled providers”.

China’s total social logistics cost exceeded 10 trillion RMB in 2013, making up 18% of GDP. Logistics energy consumption remained high, amounting to 272.3 million tce to 311.2 million tce (ton of coal equivalent) in the same year. In general, energy takes up 27% - 31% of operating cost of the China’s logistics industry. According to rough estimates, energy consumption cost has climbed to 40% or even 80% of total cost for transport LSPs. With the dawning of rapid-development phase for modern logistics in China, reliance by the logistics industry in petroleum has become irreversible. The high petroleum price contributes to the rising transportation cost, which significantly adds to logistics cost. As energy price fluctuates, this certainly exerts certain impacts on logistics enterprises and industry in terms of rising of operating cost, shrinking of profit and capital shortage of domestic LSPs.

Out of the China’s total energy consumption reaching 3.89 billion tce in 2013, the logistics industry share was 7% to 8%, which is equivalent to 272.3 million to 311.2 million tce. The estimated overall energy consumption of China’s logistics industry is 4.79 to 5.47 tce/10,000 RMB GDP, with reference to the

corresponding total GDP of 56.9 trillion RMB of China. Based on the data from National Bureau of Statistics, China's transportation, warehousing, and post sectors consume 10% of overall energy.

Effective logistics provision is among the most critical factors for China's economic development, and in some particular circumstances, it could be the very important consideration. Modernization of logistics operations can effectively enhance a country's industrial structure and improve quality of economic operation. As a result of the shift in global energy supply forms and the enhanced green energy awareness in recent years, energy supply has become a key element that can potentially affect the development of the country's logistics industry

Project Summary

GLIZP is aimed at widespread application of energy efficient green logistics technology (techniques and practices) in the logistics industry in Zhejiang Province. A barrier removal approach will be applied to achieve effective and extensive application of green logistics concepts in the province's logistics industry. The project is expected to transform the logistics industry in Zhejiang Province into one where the interplay of operational efficiency, environmental friendliness and energy efficiency/conservation ensures sustainable operation and development of the logistics industry in serving the commercial and manufacturing sectors in the province in the collection, storage and delivery of goods in an efficient, energy conserving, waste-reducing manner. This will be achieved through the implementation of activities grouped into three project components: (1) Policy and Regulatory Support for Green Logistics, (2) Green Logistics Systems Demonstration, and (3) Capacity Building and Promotion of, Green Logistics Systems.

Expected outcomes:

1. Established and enforced policy and regulations on the application and operation of green logistics systems in the logistics industry in Zhejiang Province. 1) Completed analysis of: (1) the energy use trends and GHG emissions from the operation of the logistics industry (materials management and physical distribution) in Zhejiang Province as basis for formulating policies; and, (2) green logistics systems developed and implemented in other countries and their utilization performances; 2) Formulated, recommended and implemented standards, policies, incentive schemes and implementing rules and regulations on the promotion and adoption of green logistics in Zhejiang Province; 3) Published and disseminated guides and reference documents for the application of energy conserving and energy efficient practices in the logistics industry; 4) Approved follow-up plan for the replication of the applications of the piloted green logistics policies in Zhejiang Province in other provinces and cities;
2. Improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province. 1) Completed designs of energy efficient materials management demonstrations focusing on using energy efficient materials management systems in packaging, warehousing, cold storage, etc., in the logistics industry in Zhejiang Province; 2) Completed designs of energy efficient physical distribution demonstrations focusing on integrated multi-modal transport systems and reduction of empty load rates in the freight transport operations of the logistics industry in Zhejiang Province; 3) Installed and fully operational green logistics-based centralized logistic platform in Fuyang City, Zhejiang Province; 4) Operational green logistics-based physical distribution system demonstration project in Zhejiang Province; 5) Documented annual evaluation reports on the energy performance and environmental impacts of each demo project in materials management and physical distribution, and documented and disseminated demo project results; 6) Developed action plan for scaling-up and sustainability of the green logistics system demonstration program;
3. Increased application and utilization of energy efficient materials management and physical distribution techniques, technologies and practices in the logistics and manufacturing industries in Zhejiang Province. 1) Completed assessment report on capacity development needs in the area of green logistics

and developed green logistics capacity building program; 2) Completed green logistics training courses for government authorities and relevant stakeholders in the logistics and manufacturing industries in Zhejiang Province (e.g., concepts, practices, methodologies; 3) Completed technical assistance program for assisting small-to-medium size LSPs on the application of green logistics systems; 4) Completed promotional workshops and activities for enhancing awareness and knowledge in green logistics systems; 5) Completed and fully evaluated program for the promotion and capacity building of green logistics systems; 6) Designed, endorsed and implemented an energy performance rating program and green logistics information sharing system for LSPs in Zhejiang Province;

Implementation Period: 2017-2020

NOTE: Include details (a paragraph) on the impact of COVID-19 both on the country as a whole (number of cases, deaths, lockdown dates etc.) as well as the impact on the implementation of the project/ program/ outcome being evaluated, if any.

3. Terminal Evaluation Purpose

The objective of the TE is to 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 report promotes accountability and transparency and assesses the extent of project accomplishments.

The TE will identify potential project design problems, assess progress towards the achievement of the project objective, identify and document lessons learned (including lessons that might improve design and implementation of other UNDP-GEF projects), and make recommendations regarding specific actions that should be taken to improve the project. The TE will assess early signs of project success or failure and identify the necessary changes to be made. The project performance will be measured based on the indicators of the project's logical framework and various Tracking Tools.

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

1. UNDP staff who have project responsibilities;
2. Executing agencies (including but not limited to senior officials and task team/ component leaders: ZDRC, key experts and consultants in the demonstration areas, PSC members;
3. The Chair of Project Steering Committee
4. Project stakeholders, to be determined at the TE inception meeting; including academia, local government, and CBOs

The team will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the team considers useful for this evidence-based review.

4. TE Approach & Methodology

The TE report 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 Advisor, direct beneficiaries and other stakeholders.

Engagement of stakeholders is vital to a successful TE. Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to; 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.

The TE Team will conduct an online meeting with UNDP, National Project Director (NPD), Project Management Office (PMO). An “exit” interview will also be held to discuss the findings of the assessment prior to the submission of the draft Final Report.

Prior to engagement and visiting the PMO, the TE Team shall receive all the relevant documents including at least:

- The Project Document and Project Brief
- Inception Report
- Annual Work and Financial Plans
- Annual Project Report/Project Implementation Review (APR/PIR) for 2017,2018 and 2019

To provide more details, as may be needed, the following will be made available for access by the TE Team:

- Executive summary of all quarterly reports
- Internal monitoring results
 - Terms of Reference for past consultants’ assignments and summary of the results
- Past audit reports

All additional material related to the project management and implementation and held by the PMO and their subcontracts will be available for review at the discretion of the Evaluation Team.

The TE Evaluation Team should at least interview (online) the following people:

- National Project Director
- National Project Coordinator
- PMO Director
- International Chief Technical Advisor
- Project Financial Officer
- A representative of the Project Steering Committee
- UNDP Country Office in China in-charge of the Project

It is also anticipated that the TE will interview a number of sub-contractors and recipients of services and make site visits to implementation areas. However, the degree to which such interactions are required will be at the discretion of the Evaluation Team.

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 must be clearly outlined in the TE Inception Report and be fully discussed and agreed between UNDP, stakeholders and the TE team.

The final report must 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.

❖ *Additional Text to incorporate into this section, as relevant (please adjust as needed):*

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 XX/XXXX 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.

5. Detailed Scope of the Evaluation

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 (http://web.undp.org/evaluation/guideline/documents/GEF/TE_GuidanceforUNDP-supportedGEF-financedProjects.pdf). 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

- i. 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

- ii. 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

- iii. 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 below:

ToR Table 2: Evaluation Ratings Table for (project title)

| | |
|---|----------------------|
| Monitoring & Evaluation (M&E) | Rating ⁸⁷ |
| M&E design at entry | |
| M&E Plan Implementation | |
| Overall Quality of M&E | |
| Implementation & Execution | Rating |
| Quality of UNDP Implementation/Oversight | |
| Quality of Implementing Partner Execution | |
| Overall quality of Implementation/Execution | |
| Assessment of Outcomes | Rating |
| Relevance | |
| Effectiveness | |
| Efficiency | |
| Overall Project Outcome Rating | |
| Sustainability | Rating |
| Financial resources | |
| Socio-political/economic | |
| Institutional framework and governance | |
| Environmental | |
| Overall Likelihood of Sustainability | |

The TE will assess the Project implementation taking into account the status of the project activities and outputs and the resource disbursements made up to the point of the start of the review

The evaluation will involve analysis at two levels: component level and project level. On the component level, the following shall be assessed:

- Whether there is effective relationship and communication between/among components so that

⁸⁷ Outcomes, Effectiveness, Efficiency, M&E, I&E Execution, Relevance are rated on a 6-point rating scale: 6 = Highly Satisfactory (HS), 5 = Satisfactory (S), 4 = Moderately Satisfactory (MS), 3 = Moderately Unsatisfactory (MU), 2 = Unsatisfactory (U), 1 = Highly Unsatisfactory (HU). Sustainability is rated on a 4-point scale: 4 = Likely (L), 3 = Moderately Likely (ML), 2 = Moderately Unlikely (MU), 1 = Unlikely (U)

data, information, lessons learned, best practices and outputs are shared efficiently, including cross-cutting issues during project implementation.

- Whether the performance measurement indicators and targets used in the project monitoring system were adequately used in monitoring and gauging the achievement of the project outputs and outcomes.
- Whether the end-of-project targets for each objectively verifiable indicator of the project objective and each project outcome were achieved.
- Estimated % removal of the barriers that are intended to be removed in each project component.
- Whether the use of consultants has been successful in achieving component outputs.
- Whether the quality of the outputs of consultants whose services were engaged by the project is of the required quality, were useful to the realization of the project outcomes, and were delivered in a timely manner.
- Whether the appropriate resource inputs to deliver the outputs were adequately provided.

The evaluation will include such aspects as appropriateness and relevance of work plan, compliance with the work and financial plan with budget allocation, timeliness of disbursements, procurement, coordination among project team members and committees. Any issue or factor that has impeded or accelerated the implementation of the project or any of its components, including actions taken and resolutions made should be highlighted.

On the project level, it will assess the project performance in terms of: (a.) Progress towards achievement of results, (b.) Factors affecting successful implementation and achievement of results, (c.) Project Management framework, and (d.) Strategic partnerships.

Progress towards achievement of results (internal and within project's control)

- Has the Project made satisfactory progress in achieving project outputs vis-à-vis the targets and related delivery of inputs and activities?
- Were the direct partners and project consultants able to provide necessary inputs or achieve results?
- Given the level of achievement of outputs and related inputs and activities, is the Project likely to achieve its expected outcomes and objective? Is the project contributing to the achievement of its goal?
- Are there critical issues relating to achievement of project results that have been pending and are not resolved? What are the impacts of such pending or unresolved issues?
- What is the planned exit strategy for the project? What is the plan for sustaining and maintaining the implementation of the various frameworks (policy/regulatory and institutional) and systems, best practices that the project has established and operationalized after the project completion?

Factors affecting successful implementation and achievement of results (beyond the Project's immediate control or project-design factors that influence outcomes and results)

- Has the project implementation and achievement of results proceeding well and according to plan, or are there any outstanding issues, obstacles, bottlenecks, etc. on the consumer, government or private sector or other organizations that are affecting the successful implementation and achievement of project results?
- To what extent does the broader policy environment remain conducive to achieving expected project results, including existing and planned legislations, rules, regulations, policy guidelines and government priorities?

- Has the project logical framework and design been relevant in the light of the project experience to date? Has the project logical framework and design adjusted to adapt to changing conditions and circumstances?
- To what extent do critical assumptions/risks in project design held true under the circumstances the project implementation has been through? Validate these assumptions as presently viewed by the project management and determine whether there are critical assumptions that should have been raised?
- Does the project remain well-placed and integrated within the national government development strategies, such as community development, poverty reduction, etc., and related global development programs to which the project implementation should align?
- Are the Project's institutional and implementation arrangements still relevant and helpful in the achievement of the Project's objective and outcomes or are there any institutional concerns that hinder the Project's implementation and progress.

Project management (adaptive management framework)

- Are the project management arrangements adequate and appropriate?
- How effectively is the project managed at all levels? Is it results-based and innovative?
- Do the project management systems, including progress reporting, administrative and financial systems and monitoring and evaluation system, operate as effective management tools, aid in effective implementation and provide sufficient basis for evaluating performance and decision making?
- Has the technical assistance and support from project partners and stakeholders been appropriate, adequate, and timely?
- Validate whether the risks originally identified in the project document and, currently in the APR/PIRs, are the most critical and the assessments and risk ratings placed are reasonable.
- State the initial risks that were identified during project design and start that have been removed during the project implementation period and described how each of these were removed, i.e., the risk mitigation measures that were applied. Identify those that were not removed or have persisted, as well as any additional risks that may have arose during the project implementation (if any).
- Assess the use of the project logical framework and work plans as management tools and in meeting with UNDP-GEF requirements in planning and reporting.
- Assess the use of electronic information and communication technologies in the implementation and management of the project.
- Are the project outputs (e.g., reports on studies and research conducted, capacity development activities conducted and evaluated, implemented demonstration activities, etc.) properly documented and are available with the Implementing Partner and UNDP-China? Are the physical assets particularly those involved in the project demonstration activities properly accounted for?
- On the financial management side, assess the cost effectiveness of the resource inputs to each activity, or set of activities, and note any irregularities.
- Assess how the applied process for the procurement/supply of required resource inputs, covering the RFP and TOR preparation, bidding, bid selection and awarding, and note any irregularities.
- How have the APR/PIR process helped in monitoring and evaluating the project implementation and achievement of results?

3.1 Strategic partnerships (project positioning and leveraging)

- Asses how project partners, stakeholders and co-financing institutions are involved in the implementation of project activities.
- Assess the realization of the committed co-financing for the project.
- Assess how the results of co-financed and subsumed baseline activities are reported to the project management office. Note that the project is comprised of baseline (co-financed) and incremental (GEF-funded) activities.
- Assess how project partners, stakeholders and co-financiers are involved in the Project’s adaptive management framework.
- Identify opportunities for stronger collaboration and substantive partnerships for future projects to ensure successful achievement of the results and outcomes of such projects.
- Are the project information and progress of activities disseminated to project partners and stakeholders? Are there areas to improve in the collaboration and partnership mechanisms?

NOTE: Detail any COVID-19 project interventions that should be included in the scope of the evaluation.

6. TIMEFRAME

NOTE: Flexibility and delays should be included in the timeframe for the TE, with additional time for implementing the TE virtually recognizing possible delays in accessing stakeholder groups due to COVID-19. Consideration may be given to a time contingency should the evaluation be delayed in any way due to COVID-19.

The total duration of the TE will be approximately 25 working days over a time period of approximately 15 weeks. The tentative TE timeframe is as follows:

| Tentative Timeframe | Activity |
|--|---|
| 6-Nov-2020 | Application closes |
| 30-Nov-2020 | Selection of TE team |
| 8-Dec-2020 (1 day) | Preparation period for TE team (handover of documentation) |
| 9 to 10-Dec-2020 (2 days) | Document review and preparation of TE Inception Report |
| 11 & 14-Dec-2020 (2 days) | Finalization and Validation of TE Inception Report; latest start of TE mission |
| 15-Dec-2020 to 15-Jan-2021 (9 days within time period) | TE mission: stakeholder meetings, interviews, field visits, etc. |
| 15-Jan-2021 | Mission wrap-up meeting & presentation of initial findings; earliest end of TE mission |
| 16-Jan-2021 to 19-Feb-2021 (5 days) | Preparation of draft TE report |
| 22 to 26-Feb-2021 | Circulation of draft TE report for comments |
| 17 to 21-Mar-2021 (5 days) | Incorporation of comments on draft TE report into Audit Trail & finalization of TE report |
| 23-31 March 2021 | Preparation and Issuance of Management Response |
| TBD | Concluding Stakeholder Workshop (optional) |
| 23 March 2021(1 day) | Expected date of full TE completion |

Options for site visits should be provided in the TE Inception Report.

7. TE DELIVERABLES

| # | Deliverable | Description | Timing | Responsibilities |
|---|---------------------|--|--|--|
| 1 | TE Inception Report | TE team clarifies objectives, methodology and timing of the TE | No later than 2 weeks before the TE mission: 14-Dec- | TE team submits Inception Report to Commissioning Unit and project |

| | | | | |
|---|--------------------------------|--|-----------------------------------|---|
| | | | 2020 | management |
| 2 | Presentation | Initial Findings | End of TE mission: 15-Jan-2021 | TE team presents to Commissioning Unit and project management |
| 3 | Draft TE Report | Full draft report (<i>using guidelines on report content in ToR Annex C</i>) with annexes | 19-Feb-2021 | TE team submits to Commissioning Unit; reviewed by BPPS-GEF RTA, Project Coordinating Unit, GEF OFP |
| 5 | Final TE Report* + Audit Trail | Revised final report and TE Audit trail in which the TE details how all received comments have (and have not) been addressed in the final TE report (<i>See template in ToR Annex H</i>) | 23-Mar-2021 | TE team submits both documents to the Commissioning Unit |

*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.⁸⁸

8. TE ARRANGEMENTS

NOTE: Detail the role of the Commissioning Unit and Project Team in supporting the implementation of remote/ virtual meetings. An updated stakeholder list with contact details (phone and email) will need to be provided by the Commissioning Unit to the TE team. Adjust the text if a mission will not take place.

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

The Commissioning Unit will contract the evaluators 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.

9. TE Team Composition

NOTE: Provide additional details on management structures and implementation if the International Consultant will work with a National Consultant and/or if the International Consultant is to operate remotely. Include a provision for experience in implementing evaluations remotely.

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 (*add details, as appropriate, e.g. be responsible for the overall design and writing of the TE report, etc.*) The team expert will (*add details, as appropriate, e.g. assess emerging trends with respect to regulatory frameworks, budget allocations, capacity building, work with the Project Team in developing the TE itinerary, etc.*)

The evaluator(s) cannot have participated in the project preparation, formulation and/or implementation

⁸⁸ Access at: <http://web.undp.org/evaluation/guideline/section-6.shtml>

(including the writing of the project document), must not have conducted this project's Mid-Term Review and should 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: *(Adjust the qualifications as needed and provide a weight to each qualification. In most cases, the qualifications for the team leader and those for the team expert will differ. Therefore, there should be two different lists of qualifications or separate TORs.)*

The TE Team will be composed of one International Lead Consultant and one National Consultants. The team leader's responsibilities are outlined below. The team expert will *(add details, as appropriate, e.g. assess emerging trends with respect to regulatory frameworks, budget allocations, capacity building, work with the Project Team in developing the TE itinerary, etc.)*

The evaluator(s) cannot have participated in the project preparation, formulation and/or implementation (including the writing of the project document), must not have conducted this project's Mid-Term Review and should 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: *(Adjust the qualifications as needed and provide a weight to each qualification. In most cases, the qualifications for the team leader and those for the team expert will differ. Therefore, there should be two different lists of qualifications or separate TORs.)*

Education

- Master's degree in *(fill in)* or other closely related field;

Experience

- Minimum of ten years accumulated and recognized experience in the Energy Efficiency and climate change area
- Minimum of five-years experience of project evaluation and/or implementation experience in the result-based management framework
- Familiarity with China
- Experience with multilateral and bilateral supported project environments
- Comprehensive knowledge of international project best practices
- Very good report writing skills in English

Language

- Fluency in written and spoken English.

Responsibilities

- Define the evaluation methodology and schedule, and report to the PMO
- Documentation of the review
- Leading the TE Team in planning, conducting, and reporting on the evaluation
- Deciding on division of labor within the team and ensuring timeliness of reports
- Use of best practice evaluation methodologies in conducting the evaluation
- Leading presentation of the draft evaluation findings and recommendations in-country
- Conducting the debriefing for the UNDP China Office and the PMO
- Leading the drafting and finalization of the TE report

10. 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.

11. 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 TE reports).
- The Audit Trail includes responses to and justification for each comment listed.

NOTE: Include a provision for the impact of COVID-19 on the production of deliverables and any reduced payment should this occur.

❖ *Suggested additional text*

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.

12. APPLICATION PROCESS⁸⁹

Recommended Presentation of Proposal:

- a) **Letter of Confirmation of Interest and Availability** using the [template](#)⁹⁰ provided by UNDP;
- b) **CV and a Personal History Form** ([P11 form](#)⁹¹);
- c) **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)

⁸⁹ Engagement of evaluators should be done in line with guidelines for hiring consultants in the POPP <https://popp.undp.org/SitePages/POPPRoot.aspx>

⁹⁰<https://intranet.undp.org/unit/bom/psa/Support%20documents%20on%20IC%20Guidelines/Template%20for%20Confirmation%20of%20Interest%20and%20Submission%20of%20Financial%20Proposal.docx>

⁹¹ http://www.undp.org/content/dam/undp/library/corporate/Careers/P11_Personal_history_form.doc

- d) **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 to the address (insert mailing address) in a sealed envelope indicating the following reference “Consultant for Terminal Evaluation of (*project title*)” or by email at the following address ONLY: (*insert email address*) by (*time and date*). Incomplete applications will be excluded from further consideration.

Criteria for Evaluation of Proposal: 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.

13. TOR ANNEXES

- 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
- ToR Annex G: TE Report Clearance Form
- ToR Annex H: TE Audit Trail

ToR Annex A: Project Logical/Results Framework

ToR Annex B: Project Information Package to be reviewed by TE team

| # | Item (electronic versions preferred if available) |
|----|--|
| 1 | Project Identification Form (PIF) |
| 2 | UNDP Initiation Plan |
| 3 | Final UNDP-GEF Project Document with all annexes |
| 4 | CEO Endorsement Request |
| 5 | UNDP Social and Environmental Screening Procedure (SESP) and associated management plans (if any) |
| 6 | Inception Workshop Report |
| 7 | Mid-Term Review report and management response to MTR recommendations |
| 8 | All Project Implementation Reports (PIRs) |
| 9 | Progress reports (quarterly, semi-annual, or annual, with associated workplans and financial reports) |
| 10 | Oversight mission reports |
| 11 | Minutes of Project Board Meetings and of other meetings (i.e. Project Appraisal Committee meetings) |
| 12 | GEF Tracking Tools (from CEO Endorsement, midterm, and terminal stages) |
| 13 | GEF/LDCF/SCCF Core Indicators (from PIF, CEO Endorsement, midterm, and terminal stages); for GEF-6 and GEF-7 projects only |
| 14 | Financial data, including actual expenditures by project outcome, including management costs, and including documentation of any significant budget revisions |
| 15 | Co-financing data with expected and actual contributions broken down by type of co-financing, source, and whether the contribution is considered as investment mobilized or recurring expenditures |
| 16 | Audit reports |
| 17 | Electronic copies of project outputs (booklets, manuals, technical reports, articles, etc.) |
| 18 | Sample of project communications materials |
| 19 | Summary list of formal meetings, workshops, etc. held, with date, location, topic, and number of participants |
| 20 | Any relevant socio-economic monitoring data, such as average incomes / employment levels of stakeholders in the target area, change in revenue related to project activities |
| 21 | List of contracts and procurement items over ~US\$5,000 (i.e. organizations or companies contracted for project outputs, etc., except in cases of confidential information) |
| 22 | List of related projects/initiatives contributing to project objectives approved/started after GEF project approval (i.e. any leveraged or “catalytic” results) |
| 23 | Data on relevant project website activity – e.g. number of unique visitors per month, number of page views, etc. over relevant time period, if available |
| 24 | UNDP Country Programme Document (CPD) |
| 25 | List/map of project sites, highlighting suggested visits |
| 26 | List and contact details for project staff, key project stakeholders, including Project Board members, RTA, Project Team members, and other partners to be consulted |
| 27 | Project deliverables that provide documentary evidence of achievement towards project outcomes |
| | <i>Add documents, as required</i> |

ToR Annex C: Content of the TE report

- i. Title page
 - Title of UNDP-supported GEF-financed project
 - UNDP PIMS ID and GEF ID
 - TE timeframe and date of final TE report
 - Region and countries included in the project
 - GEF Focal Area/Strategic Program
 - Executing Agency, Implementing partner and other project partners
 - TE Team members
- ii. Acknowledgements
- iii. Table of Contents
- iv. Acronyms and Abbreviations
1. Executive Summary (3-4 pages)
 - Project Information Table
 - Project Description (brief)
 - Evaluation Ratings Table
 - Concise summary of findings, conclusions and lessons learned
 - Recommendations summary table
2. Introduction (2-3 pages)
 - Purpose and objective of the TE
 - Scope
 - Methodology
 - Data Collection & Analysis
 - Ethics
 - Limitations to the evaluation
 - Structure of the TE report
3. Project Description (3-5 pages)
 - Project start and duration, including milestones
 - Development context: environmental, socio-economic, institutional, and policy factors relevant to the project objective and scope
 - Problems that the project sought to address: threats and barriers targeted
 - Immediate and development objectives of the project
 - Expected results
 - Main stakeholders: summary list
 - Theory of Change
4. Findings

(in addition to a descriptive assessment, all criteria marked with (*) must be given a rating⁹²)

 - 4.1 Project Design/Formulation
 - 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
 - 4.1 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

⁹² See ToR Annex F for rating scales.

- Monitoring & Evaluation: design at entry (*), implementation (*), and overall assessment of M&E (*)
- UNDP implementation/oversight (*) and Implementing Partner execution (*), overall project implementation/execution (*), coordination, and operational issues

4.2 Project Results

- Progress towards objective and expected outcomes (*)
- Relevance (*)
- Effectiveness (*)
- Efficiency (*)
- Overall Outcome (*)
- Country ownership
- Gender
- Other Cross-cutting Issues
- Social and Environmental Standards
- Sustainability: financial (*), socio-economic (*), institutional framework and governance (*), environmental (*), and overall likelihood (*)
- Country Ownership
- Gender equality and women's empowerment
- Cross-cutting Issues
- GEF Additionality
- Catalytic Role / Replication Effect
- Progress to Impact

5. Main Findings, Conclusions, Recommendations & Lessons

- Main Findings
- Conclusions
- Recommendations
- Lessons Learned

6. Annexes

- TE ToR (excluding ToR annexes)
- TE Mission itinerary
- List of persons interviewed
- List of documents reviewed
- Summary of field visits
- Evaluation Question Matrix (evaluation criteria with key questions, indicators, sources of data, and methodology)
- Questionnaire used and summary of results
- Co-financing tables (if not include in body of report)
- TE Rating scales
- Signed Evaluation Consultant Agreement form
- Signed UNEG Code of Conduct form
- Signed TE Report Clearance form
- *Annexed in a separate file:* TE Audit Trail
- *Annexed in a separate file:* relevant terminal GEF/LDCF/SCCF Core Indicators or Tracking Tools, as applicable

ToR Annex D: Evaluation Criteria Matrix template

NOTE: Include COVID-19 specific questions, as needed.

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|--|--|---|---|
| Relevance: How does the project relate to the main objectives of the GEF Focal area, and to the environment and development priorities a the local, regional, and national level? | | | |
| <i>(include evaluative questions)</i> | <i>(i.e. relationships established, level of coherence between project design and implementation approach, specific activities conducted, quality of risk mitigation strategies, etc.)</i> | <i>(i.e. project documentation, national policies or strategies, websites, project staff, project partners, data collected throughout the TE mission, etc.)</i> | <i>(i.e. document analysis, data analysis, interviews with project staff, interviews with stakeholders, etc.)</i> |
| | | | |
| Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved? | | | |
| | | | |
| Efficiency: Was the project implemented efficiently, in line with international and national norms and standards? | | | |
| | | | |
| Sustainability: To what extent are there financial, institutional, socio-political, and/or environmental risks to sustaining long-term project results? | | | |
| | | | |
| Gender equality and women’s empowerment: How did the project contribute to gender equality and women’s empowerment? | | | |
| | | | |
| Impact: Are there indications that the project has contributed to, or enabled progress toward reduced environmental stress and/or improved ecological status? | | | |
| | | | |
| <i>(Expand the table to include questions for all criteria being assessed: Monitoring & Evaluation, UNDP oversight/implementation, Implementing Partner Execution, cross-cutting issues, etc.)</i> | | | |

ToR Annex E: UNEG Code of Conduct for Evaluators

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 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: _____

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 _____ (Place) on _____ (Date)

Signature: _____

ToR Annex F: TE Rating Scales

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

ToR Annex G: TE Report Clearance Form

| | |
|--|-------------|
| Terminal Evaluation Report for <i>(Project Title & UNDP PIMS ID)</i> Reviewed and Cleared By: | |
| Commissioning Unit (M&E Focal Point) | |
| Name: _____ | |
| Signature: _____ | Date: _____ |
| Regional Technical Advisor (Nature, Climate and Energy) | |
| Name: _____ | |
| Signature: _____ | Date: _____ |

ToR Annex H: TE Audit Trail

The following is a template for the TE Team to show how the received comments on the draft TE report have (or have not) been incorporated into the final TE report. This Audit Trail should be listed as an annex in the final TE report but not attached to the report file.

To the comments received on *(date)* from the Terminal Evaluation of *(project name)* (UNDP Project PIMS #)

The following comments were provided to the draft TE report; they are referenced by institution/organization (do not include the commentator's name) and track change comment number ("#" column):

| Institution/ Organization | # | Para No./ comment location | Comment/Feedback on the draft TE report | TE team response and actions taken |
|------------------------------|---|----------------------------------|--|---------------------------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Annex B. List of persons interviewed

Table B.1. List of persons interviewed

| Name | Affiliation |
|-----------------------------------|---|
| Project Management Unit | |
| Yang Shouquan | Project manager |
| Zhang Yu | Project coordinator and administrator |
| Huang Wei | Chief technical consultant |
| Wei Danqing | Project coordinator and administrator |
| Project Steering Committee | |
| Wu Zhitao | Fuyang Hangzhou Transfar Logistics Base Co., Ltd. |
| Li Lu | Zhejiang Fuyang Port International Co. Ltd. |
| Ying Qixiang | Zhejiang Provincial Department of Finance |
| Jiang Weigang | Fujang City Government |
| UNDP | |
| Shijun Liu | Programme director climate change, UNDP China |
| Manuel Soriano | Regional Technical Advisor, UNDP regional centre Asia-Pacific |
| Project stakeholders | |
| Ju Xuequan | Shanghai Economic Information Center |
| Tang Wei | Shanghai Landy law Firm |
| Yang Yuanyi | Zhejiang Economic Information Development Co., LTD |
| Ye Jinghong | Zhejiang Economic Information Development Co., LTD |
| Wu Zhitao | Fuyang Hangzhou Transfar Logistics Base Co., Ltd. |
| Li Lu | Zhejiang Fuyang Port International Co. Ltd. |
| Chen Yufeng | Zhejiang Gongshang University |
| Zhu Zhitao | Zhejiang Gongshang University |
| Luo Guozheng | Zhejiang International Freight Forwarding and Logistics Association |
| Cheng Hong | Zhejiang Logistics Association |
| Wu Yin | Zhejiang Logistics Association |
| Ma Jun | Zhejiang Standardization Research Institute |

Annex C. List of documents reviewed

1. China Quality Certification Centre. Energy Efficiency Evaluation Program and Plan for Small and Medium sized Logistics Enterprises in Zhejiang Province. November, 2020.
2. GLIZP. Inception report. June, 2017
3. GLIZP. Management response to mid-term review. No date.
4. GLIZP. Minutes of meetings of the Project Steering Committee on:
 - 24 March 2017;
 - 16 March 2018;
 - 25 March 2019; and,
 - 11 September 2020.
5. GLIZP. Summary of green logistics capacity building training. 2019.
6. GLIZP. Summary of green logistics capacity building training. 2020.
7. UNDP. Mid-term review report. 2019.
8. UNDP. Project implementation review (PIR) reports for:
 - 2019; and,
 - 202.
9. UNDP. Annual progress reports for:
 - 2017;
 - 2018; and,
 - 2019.
10. UNDP. Quarterly progress reports for:
 - First quarter of 2018;
 - Second quarter of 2018;
 - Third quarter of 2018;
 - First quarter of 2019;
 - Second quarter of 2019;
 - Third quarter of 2019;
 - First quarter of 2020;
 - Second quarter of 2020; and,
 - Third quarter of 2020.
11. UNDP Country Programme Document (CPD) for China (2016 – 2020). 2016.
12. Tianjin Climate Exchange Co., Ltd. Green Finance for Green Logistics in Logistics SME: Support Assessment and Suggestions. December 2019.
13. Zhejiang Economic Information Center, Zhejiang Gongshang University. Evaluation Standard of Implementation Effect of Green Logistics Project. April, 2020.
14. Zhejiang Economic Information Center. Green Technology Application and Practice Guide for Zhejiang Logistics Enterprises. No date.
15. Zhejiang Economic Information Development Co., Ltd. Energy Consumption and Carbon Emission Report of Green logistics demonstration project. January, 2020.
16. Zhejiang Economic Information Development Co., Ltd. Green logistics policy promotion plan. March, 2020.

Annex D. Evaluation criteria matrix

Since the TE ToRs did not include an evaluation matrix and key evaluation questions, the TE team prepared the evaluation criteria matrix (Table D.1.), proposing the criteria and questions to be addressed during the TE. The evaluation matrix was finalized during the review and approval of the TE inception report.

Table D.1. Evaluation criteria matrix

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|---|---|------------------------------|--|
| Project design | | | |
| <u>Lessons from other projects:</u> Did the project design incorporate lessons from other, similar projects? | Evidence of lessons from other projects in project design | ProDoc | Documents analysis |
| <u>Project logic and strategy:</u> Were project objectives clear and feasible? Were project outcomes and outputs internally coherent and consistent with the definition of the project objective? | Coherence and consistency between outputs, outcomes, and objective | ProDoc | Documents analysis |
| <u>Gender responsiveness:</u> How were gender considerations incorporated in project design? | Evidence of planned activities with considerations on gender issues Evidence of gender-disaggregated indicators | ProDoc | Documents analysis |
| <u>Stakeholder participation:</u> Was there participation from stakeholders in the project design process? | Level of participation of stakeholders in project design | ProDoc | Documents analysis Interviews |
| Implementation and execution | | | |
| Stakeholder participation and partnerships | | | |
| Did the project develop effective partnerships? Did these partnerships contribute to project results? | Evidence of resources committed by partners to project activities Evidence of commitment by partners to take over project activities after project end | APRs, PIRs Press releases | Documents analysis Semi-structured interviews Interviews with project team |
| Project finance and cofinancing: | | | |
| Were there appropriate financial controls and mechanisms to allow effective project management? | Adequacy of financial control mechanisms Findings from auditors | Audit reports APRs, PIRs | Documents analysis Interviews with project team |
| Did planned cofinancing contributions materialize? | Levels of cofinancing reported | Audit reports APRs, PIRs | Documents analysis |

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|--|---|---|--|
| Were external resources well integrated into project strategy? | | Press releases | Interviews with project team |
| Monitoring and evaluation (M&E) | | | |
| Does the monitoring plan have SMART indicators? | Smart indicators in PRF | ProDoc | Documents analysis |
| Was the monitoring plan implemented as intended? | Project reports submitted in accordance with provisions in the monitoring plan | ProDoc APRs, PIRs | Documents analysis Interviews with project team |
| Were resources allocated for M&E expended as planned? | Project budgets and expenditures conform to provisions in monitoring plan | ProDoc APRs, PIRs | Documents analysis Interviews with project team |
| Implementing partner execution, UNDP oversight | | | |
| Did the IP focus on results and timeliness? | Evidence that problems were identified and analysed on time Evidence that solutions were identified and implemented effectively to respond to emerging problems Evidence that plans were adjusted and updated to respond to problems and agreed courses of action | ProDoc APRs, PIRs | Documents analysis Semi-structured interviews Interviews with project team |
| Was there clarity regarding responsibilities over project execution? | Evidence that plans adequately identified responsibilities and timelines Evidence that activities were implemented as planned Evidence that plans were adjusted and updated to respond to problems and agreed courses of action | ProDoc APRs, PIRs | Documents analysis Semi-structured interviews Interviews with project team |
| Were procurement processes appropriate? | Evidence that contracts were awarded in accordance with procurement plans | AWP, procurement plans, lists of awarded contracts | Documents analysis Interviews with project team |
| Did the IP identify and managed risks effectively? | Risk log was kept up to date Evidence that problems were identified and analysed on time | ProDoc APRs, PIRs | Documents analysis Semi-structured interviews Interviews with project team |

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|--|--|--|--|
| | Evidence that solutions were identified and implemented effectively to respond to emerging problems Evidence that plans were adjusted and updated to respond to problems and agreed courses of action | | |
| <u>UNDP role:</u> Was the support provided by UNDP timely and effective? | Field visits were conducted as planned Evidence that responses to emerging issues were clear and timely | APRs, PIRs Field missions' reports | Documents analysis Semi-structured interviews Interviews with project team |
| Assessment of project outcomes | | | |
| 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 relevant to national priorities, including the nationally determined contribution (NDC) under the Paris Agreement? | Consistency between project objectives/results and national development priorities | ProDoc APRs, PIRs Published policy documents (e.g. NDC) | Documents analysis Semi-structured interviews Interviews with project team |
| To what extent was the project aligned to GEF's climate change focal area strategy and operational programme? | Consistency between project objectives/results and GEF's strategy | ProDoc APRs, PIRs GEF strategies and programming directions | Documents analysis Semi-structured interviews Interviews with project team |
| To what extent was the project aligned to UNDP's strategic priorities in China? | Consistency between project objectives and results and UNDP priorities in China | ProDoc APRs, PIRs UNDP Strategic Plan UNDP Country Programme Document | Documents analysis Semi-structured interviews |
| Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved? | | | |
| Were all expected project outcomes and targets achieved? | PRF indicators | ProDoc APRs, PIRs Press releases | Documents analysis Semi-structured interviews Interviews with project team Interviews with representatives from Zhejiang Fuyang Port International Co. Ltd. |

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|--|---|--|--|
| | | | and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Survey to LSPs |
| Were the demonstration projects implemented as planned? Were the barriers removal actions by the project effective enablers for these demonstration projects? | Consistency between proposed demonstration projects and actual project activities Degree to which barriers to the implementation of these projects were removed by the project | ProDoc APRs, PIRs | Documents analysis Semi-structured interviews Interviews with representatives from Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Interviews with project team |
| Did LSPs changed practices in accordance with the project's intended objectives? Was the support provided by the project to LSPs effective? | Fraction of LSPs that report changes in practices Fraction of LSPs that report that support was effective | ProDoc APRs, PIRs Survey results | Documents analysis Survey to LSPs Interviews with project team |
| Are there any relevant lessons or recommendations regarding effectiveness to be codified? | Lessons and recommendations identified by stakeholders | APRs, PIRs | Documents analysis Semi-structured interviews Interviews with representatives from Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Interviews with project team |
| Efficiency: Was the project implemented efficiently, in line with international and national norms and standards? | | | |
| Where project funds spent according to plans? | Consistency between project expenditures and project budget and AWP | ProDoc AWPs, APRs, PIRs | Documents analysis Interviews with project team |
| To what extent was the project implemented in a cost-effective and timely manner? | Adherence of project activities to project budget and schedules | ProDoc AWPs, APRs, PIRs | Documents analysis Interviews with project team |
| Are there any relevant lessons or recommendations regarding efficiency to be codified? | Lessons and recommendations identified by stakeholders | APRs, PIRs | Documents analysis Semi-structured interviews |

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|---|---|--|--|
| | | | Interviews with representatives from Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Interviews with project team |
| Sustainability: To what extent are there financial, institutional, socio-political, and/or environmental risks to sustaining long-term project results? | | | |
| <u>Financial:</u> What government mechanisms are available to sustain the transformation of the logistics sector after the project's closure? Are the financial resources for these mechanisms confirmed? | Financing/cofinancing resources for follow-up activities | APRs, PIRs Press releases | Documents analysis Semi-structured interviews Interviews with project team |
| <u>Financial:</u> What private sector mechanisms are available to sustain the transformation of the logistics sector after the project's closure? Are the financial resources for these mechanisms confirmed? | Financing/cofinancing resources for follow-up activities | APRs, PIRs Press releases | Documents analysis Semi-structured interviews Interviews with representatives from Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Interviews with project team |
| <u>Institutional:</u> Did the policy/regulatory reforms remove barriers to green logistics? | Fraction of LSPs that report that new/updated policies and regulations enable changes towards green practices | APRs, PIRs Survey results Press releases | Documents analysis Survey to LSPs Interviews with project team |
| <u>Institutional:</u> Did the personnel at LSPs acquire the required skills to adopt green logistic practices? | Fraction of LSPs that report that personnel has gained the required skills to adopt green logistic practices. | APRs, PIRs Survey results | Documents analysis Survey to LSPs Interviews with project team |
| <u>Socio-political:</u> Are there any social or political risks to the permanence of project outcomes? | Risks identified by stakeholders | APRs, PIRs | Documents analysis Semi-structured interviews Interviews with representatives from |

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|--|--|---|--|
| | | | Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Interviews with project team |
| <u>Environmental</u> : Are there any environmental risks to the permanence of project outcomes? | Risks identified by stakeholders | APRs, PIRs | Documents analysis Semi-structured interviews Interviews with representatives from Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Interviews with project team |
| Gender equality and women's empowerment: How did the project contribute to gender equality and women's empowerment? | | | |
| How did the project contribute to gender equality and women's empowerment? | Levels of participation of women in project implementation Incorporation of gender considerations in the planning and execution of project activities | ProDoc AWPs, APRs, PIRs | Documents analysis Semi-structured interviews Interviews with project team |
| Impact: Are there indications that the project has contributed to, or enabled progress toward reduced environmental stress and/or improved ecological status? | | | |
| Did the project achieve the expected levels of fuel savings and GHG emissions reductions? | PRF indicators | ProDoc GEF Tracking Tool APRs, PIRs | Documents analysis Semi-structured interviews Interviews with representatives from Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Interviews with project team |
| To what extent are the changes in policies and regulations conducive to the adoption of green | Consistency between identified barriers and effects from policy and regulatory changes | ProDoc APRs, PIRs Press releases | Documents analysis Semi-structured interviews |

| Evaluative Criteria Questions | Indicators | Sources | Methodology |
|---|------------|---------|---|
| <p>logistics practices in Zhejiang Province? Are these changes enough to promote change over time?</p> | | | <p>Interviews with representatives from Zhejiang Fuyang Port International Co. Ltd. and Fuyang Hangzhou Transfar Logistics Base Co., Ltd. Survey to LSPs Interviews with project team</p> |

Annex E. TE rating scales

Table E.1. Monitoring and evaluation ratings scale

| Rating | Description |
|------------------------------------|--|
| 6 = Highly Satisfactory (HS) | There were no shortcomings; quality of M&E design/implementation exceeded expectations |
| 5 = Satisfactory (S) | There were minor shortcomings; quality of M&E design/implementation met expectations |
| 4 = Moderately Satisfactory (MS) | There were moderate shortcomings; quality of M&E design/implementation more or less met expectations |
| 3 = Moderately Unsatisfactory (MU) | There were significant shortcomings; quality of M&E design/implementation was somewhat lower than expected |
| 2 = Unsatisfactory (U) | There were major shortcomings; quality of M&E design/implementation was substantially lower than expected |
| 1 = Highly Unsatisfactory (HU) | There were severe shortcomings in M&E design/implementation |
| Unable to Assess (UA) | The available information does not allow an assessment |

Table E.2. Implementation/Oversight and Execution Ratings Scale

| Rating | Description |
|------------------------------------|--|
| 6 = Highly Satisfactory (HS) | There were no shortcomings; quality of implementation/execution exceeded expectations |
| 5 = Satisfactory (S) | There were no or minor shortcomings; quality of implementation/execution met expectations. |
| 4 = Moderately Satisfactory (MS) | There were some shortcomings; quality of implementation/execution more or less met expectations. |
| 3 = Moderately Unsatisfactory (MU) | There were significant shortcomings; quality of implementation/execution was somewhat lower than expected. |
| 2 = Unsatisfactory (U) | There were major shortcomings; quality of implementation/execution was substantially lower than expected. |
| 1 = Highly Unsatisfactory (HU) | There were severe shortcomings in quality of implementation/execution. |
| Unable to Assess (UA) | The available information does not allow an assessment of the quality of implementation and execution. |

Table E.3. Outcome Ratings Scale - Relevance, Effectiveness, Efficiency

| Rating | Description |
|------------------------------|---|
| 6 = Highly Satisfactory (HS) | Level of outcomes achieved clearly exceeds expectations and/or there were no shortcomings |

| | |
|------------------------------------|---|
| 5 = Satisfactory (S) | Level of outcomes achieved was as expected and/or there were no or minor shortcomings |
| 4 = Moderately Satisfactory (MS) | Level of outcomes achieved more or less as expected and/or there were moderate shortcomings. |
| 3 = Moderately Unsatisfactory (MU) | Level of outcomes achieved somewhat lower than expected and/or there were significant shortcomings. |
| 2 = Unsatisfactory (U) | Level of outcomes achieved substantially lower than expected and/or there were major shortcomings. |
| 1 = Highly Unsatisfactory (HU) | Only a negligible level of outcomes achieved and/or there were severe shortcomings. |
| Unable to Assess (UA) | The available information does not allow an assessment of the level of outcome achievements. |

Table E.4. Sustainability Ratings Scale

| Rating | Description |
|------------------------------|---|
| 4 = Likely (L) | There are little or no risks to sustainability. |
| 3 = Moderately Likely (ML) | There are moderate risks to sustainability. |
| 2 = Moderately Unlikely (MU) | There are significant risks to sustainability. |
| 1 = Unlikely (U) | There are severe risks to sustainability. |
| Unable to Assess (UA) | Unable to assess the expected incidence and magnitude of risks to sustainability. |

Annex F. Signed UNEG Code of Conduct form

UNEG Code of Conduct for Evaluators

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

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

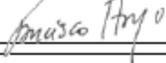
Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Evaluator: Francisco Arango

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

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

Signed at Santander, Spain on 16 December, 2020

Signature:  _____

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 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).

Annex G. Signed TE report clearance form

Annex H. TE audit trail (in separate file)

Annex I. GEF CCM Tracking Tool (in separate file)

Annex J. Terminal evaluation schedule

The schedule for the TE took into consideration that no TE mission was conducted. The schedule also took into account the time required by UNDP and the project team to submit documents and information requested by the evaluation team. The evaluation schedule is provided in Table J.1., below.

Table 23 Tentative schedule for the evaluation

| Milestones | Tentative schedule |
|--|---------------------------|
| Inception report | December 14, 2020 |
| Document review | January 15, 2021 |
| Draft TE report to UNDP for comments | February 19, 2021 |
| Revised draft report submitted to project team | February, 2021 |
| TE final report | March 23, 2021 |

Annex K. Project components, outcomes, outputs, and activities

Table K.1. Project components, outcomes, outputs and activities

| Project outcomes, outputs and activities | |
|---|--|
| Component 1. Policy and Regulatory Support for Green Logistics | |
| Outcome 1. Established and enforced policy and regulations on the application and operation of green logistics systems in the logistics industry in Zhejiang Province | |
| Outputs | Activities |
| Output 1.1. Completed analysis of: (1) the energy use trends and GHG emissions from the operation of the logistics industry (materials management and physical distribution) in Zhejiang Province as basis for formulating policies; and, (2) green logistics systems developed and implemented in other countries and the performance and results of their applications. | 1.1.1. Survey and analysis of the policy status and the innovative developments in enhancing energy efficiency and environment conservation improvement in the logistics industry in China and other countries. |
| | 1.1.2. Evaluation of existing policies on the logistics industry and determination of necessary policies and regulations applicable to materials management and physical distribution operations in the logistics industry in Zhejiang Province. |
| Output 1.2. Formulated, recommended, and implemented standards, policies, incentive schemes and implementing rules and regulations on the promotion and adoption of green logistics the logistics industry in Zhejiang Province. | 1.2.1. Adoption and establishment of the recommended system for the promotion and practice of green logistics in the logistics industry in Zhejiang Province. |
| | 1.2.2. Design and implementation of a pilot financial incentives scheme for small-to-medium size to encourage them to adopt EC&EE technologies and green logistic techniques. |
| | 1.2.3. Development and formulation of policies and implementing rules and regulations on the development and support of the logistics industry in Zhejiang Province |
| Output 1.3. Published and disseminated guides and reference documents for the application of energy conserving and energy efficient practices in the logistics industry | 1.3.1. Development of guides and reference documents for the application of energy conserving and energy efficient practices in the logistics industry. |
| | 1.3.2. Dissemination of guides and reference documents for the application of energy conserving and energy efficient practices in the logistics industry in Zhejiang Province, in particular, and in China |
| Output 1.4. Approved follow-up plan for the replication of the applications of the piloted green logistics policies in Zhejiang Province in other provinces and cities | 1.4.1. Design of the follow-up plan to promote and implement the replication of the successful applications of the piloted green logistics policies in Zhejiang Province to other provinces and cities. |
| | 1.4.2. Promotion of the successful applications of the piloted green logistics (materials management and physical distribution) policies in Zhejiang Province to other major Chinese provinces and cities (e.g., Dalian, Qingdao, Tianjin, Guangzhou, and Yangshan). |
| Component 2. Green Logistics Systems Demonstration | |

| Outcome 2. Improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province | |
|--|---|
| Outputs | Activities |
| 2.1. Completed designs of energy efficient materials management demonstrations focusing on using energy efficient materials management systems in packaging, warehousing, cold storage, etc., in the logistics industry in Zhejiang Province | 2.1.1. Conduct of feasibility analyses on the application and operation of energy efficient materials management systems in the logistics industry. |
| | 2.1.2. Design of the modified materials management system (including the associated facilities and infrastructures) in the Zhejiang Province logistics system projects. |
| | 2.1.3. Development of the implementation plans (including financing arrangements) for each demonstration energy efficient materials management systems in the logistics industry. |
| 2.2. Completed designs of energy efficient physical distribution demonstrations focusing on integrated multi-modal transport systems and reduction of empty load rates in the freight transport operations of the logistics in Zhejiang Province | 2.2.1. Conduct of feasibility analyses on the application and operation of energy efficient physical distribution systems in the logistics industry. |
| | 2.2.2. Design of the physical distribution system (including the associated facilities and infrastructures for energy efficient water and water/road freight planning and management schemes) in the Zhejiang Province logistics system projects. |
| | 2.2.3. Development of the implementation plans (including financing arrangements) for each demonstration EE physical distribution systems in the logistics industry. |
| 2.3. Installed and fully operational green logistics-based centralized logistic platform in Fuyang City, Zhejiang Province | 2.3.1. Installation of the demonstration energy efficient centralized logistic facility. |
| | 2.3.2. Operation of the demonstration centralized logistics facility in Zhejiang Province. |
| 2.4. Operational green logistics-based physical distribution system demonstration project in Zhejiang Province | 2.4.1. Installation of the demonstration energy efficient centralized freight transport facility. |
| | 2.4.2. Operation of the demonstration centralized freight transport system in Zhejiang Province. |
| 2.5. Documented annual evaluation reports on the energy performance and environmental impacts of each demo project in materials management and physical distribution, and documented and disseminated demo project results | 2.5.1. Evaluation of the energy performance and environmental impacts of each demo EE materials management project |
| | 2.5.2. Documentation and dissemination of the results of each demo EE materials management project |
| | 2.5.3. Evaluation of the energy performance and environmental impacts of each demo EE physical distribution project |
| | 2.5.4. Documentation and dissemination of the results of each demo EE physical distribution project |

| | |
|---|--|
| 2.6. Developed action plan for sustainability of the green logistics system demonstration program | 2.6.1. Development of the action plan for sustainability of the green logistics system demonstration program |
|---|--|

Component 3. Capacity Building and Promotion of Green Logistics Systems

Outcome 3. Increased application and utilization of energy efficient materials management and physical distribution techniques, technologies and practices in the logistics and manufacturing industries in Zhejiang Province

| Outputs | Activities |
|---|---|
| 3.1. Completed assessment report on capacity development needs in the area of green logistics and developed green logistics capacity building program | 3.1.1. Assessment of the capacity development needs in the area of green logistics |
| | 3.1.2. Development and adoption of green logistics capacity building program in Zhejiang |
| 3.2 Completed green logistics training courses for government authorities and relevant stakeholders in the logistics and manufacturing industries in Zhejiang Province (e.g., concepts, practices, methodologies) | 3.2.1. Development of materials and scheduling of the green logistics training courses |
| | 3.2.2. Conduct of training courses for government authorities and relevant stakeholders in the logistics and manufacturing industries in Zhejiang |
| 3.3: Completed technical assistance program for assisting small-to-medium size LSPs on the application of green logistics systems | 3.3.1. Publication of the technical guidance documents |
| | 3.3.2. Dissemination of technical guidance documents |
| 3.4: Completed promotional workshops and/or activities to enhance awareness and knowledge in green logistics systems. | 3.4.1. Conduct of promotional workshops and related promotional activities for the dissemination of reference documents and knowledge products on the green logistics demonstration |
| 3.5: Completed and fully evaluated program for the promotion and capacity building of green logistics systems | 3.5.1. Development of the evaluation standard and tool |
| | 3.5.2. Monitoring and evaluation of the capacity building and promotion of green logistics systems |
| 3.6: Designed, endorsed and implemented an energy performance rating program and green logistics information sharing system for LSPs in Zhejiang Province | 3.6.1. Design of an energy performance rating program for LSPs in Zhejiang Province |
| | 3.6.2. Design of a provincial green logistics information sharing system for LSPs |
| | 3.6.3 Endorsement and implementation of an energy performance rating program and green logistics information sharing system for LSPs in Zhejiang Province |

Source: Adapted from UNDP Project Document pp. 20 – 38

Annex L. Project results framework

| |
|--|
| This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: <i>Low carbon and other environmentally sustainable strategies and technologies are adapted widely to meet China’s commitments and compliance with Multilateral Environmental Agreements</i> |
| Country Programme Outcome Indicators: <i>Cumulative CO₂ emissions reductions from 2011-2015; Baseline: 2011 Zero; Target: 2015 under UNDP supported project at 70 million tons CO₂ reduction</i> |
| Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): <i>Mainstreaming environment and energy</i> |
| Applicable GEF Strategic Objective and Program: <i>Promote market transformation for energy efficiency in industry and the building sector</i> |
| Applicable GEF Expected Outcomes: <i>Reduction of GHG emissions from the widespread application of Green logistics in the Zhejiang Province</i> |
| Applicable GEF Outcome Indicators: <i>Cumulative CO₂ emissions reduction by end-of-project (EOP), kt</i> |

| Project Strategy | Objectively Verifiable Indicators | | | Means of Gauging Success | Critical Assumptions |
|---|--|----------|------------|--|---|
| | Indicator | Baseline | Target | | |
| GOAL: Reduction of greenhouse gas (GHG) emissions through the widespread application of Green Logistics in the Zhejiang Province | • Cumulative CO ₂ emissions reduction by end-of-project (EOP), <i>ktons</i> | • 0 | • 1,749.27 | • M&E reports produced by the project management office based on activity and outputs reports submitted by relevant provincial government agencies on the energy consumption, savings and equivalent CO ₂ emissions reduction in the Zhejiang province’s logistics industry | • Continued commitment, support and active participation of Government of China through Zhejiang Provincial Development and Reform Commission (ZPRDC), enterprises and the public |
| | • Reduction in the annual growth rate of GHG emissions by EOP, % | • 0 | • 3.0 % | | |
| OBJECTIVE: Widespread application of energy | • Cumulative fuel savings due to project intervention by EOP, <i>ktoe</i> | • 0 | • 296.24 | • Reports on energy used and saved | • High level of commitment of stakeholders (including the |

| Project Strategy | Objectively Verifiable Indicators | | | Means of Gauging Success | Critical Assumptions |
|---|--|---|---|--|--|
| | Indicator | Baseline | Target | | |
| efficient green logistics⁹³ techniques and practices in the logistics industry in Zhejiang Province | <ul style="list-style-type: none"> No. of new jobs created with the application of green logistics techniques in the logistics industry in Zhejiang Province by EOP | <ul style="list-style-type: none"> 0 | <ul style="list-style-type: none"> At least 1,000. | <ul style="list-style-type: none"> Consolidated report from annual reports of ZPDRC, the Zhejiang Provincial Government and local logistics industry association, | <ul style="list-style-type: none"> necessary co-financing from government agencies and LSPs) in the implementation of project activities and monitoring systems |
| COMPONENT 1: POLICY AND REGULATORY SUPPORT FOR GREEN LOGISTICS | | | | | |
| Outcome 1: Established and enforced policy and regulations on the application and operation of green logistics systems in the logistics industry in Zhejiang Province | <ul style="list-style-type: none"> No. of new provincial government legislation and policies that provide an enabling environment to support green logistics by EOP | <ul style="list-style-type: none"> 0 | <ul style="list-style-type: none"> At least 3 | <ul style="list-style-type: none"> Documentation of policies and regulations Approved and enforced policies and regulations in Zhejiang Province | <ul style="list-style-type: none"> Local Government and private logistics industry sector fully support and commit to the program and passage of relevant regulations and their implementation. |
| COMPONENT 2: GREEN LOGISTICS SYSTEMS DEMONSTRATION | | | | | |
| Outcome 2: Improved energy efficiency in the materials management and physical distribution activities in the logistics industry in Zhejiang Province | <ul style="list-style-type: none"> % empty load rate of freight transport in Zhejiang Province by EOP Annual fuel savings due to project | <ul style="list-style-type: none"> 50% 0 0 | <ul style="list-style-type: none"> 10% 80.06 30.06 | <ul style="list-style-type: none"> Report on approved impact measurement methodology Statistics on empty load rate, energy consumption, logistics value, GHG emission to be monitored by the project Evaluation reports on energy efficiency performance in | <ul style="list-style-type: none"> Government and provincial logistics industry provide support in gathering and providing necessary data |

⁹³ Supply chain management practices and strategies that reduce the environmental and energy footprint of freight distribution, and focuses on material handling, waste management, packaging and physical distribution (i.e., freight transport).

| Project Strategy | Objectively Verifiable Indicators | | | Means of Gauging Success | Critical Assumptions |
|---|---|--|---|---|---|
| | Indicator | Baseline | Target | | |
| | intervention by EOP, <i>ktoe/yr</i> <ul style="list-style-type: none"> • Materials management, <i>ktoe/yr</i> • Physical distribution, <i>ktoe/yr</i> <ul style="list-style-type: none"> • Annual GHG emission reduction by EOP, <i>ktons CO₂</i> <ul style="list-style-type: none"> • Materials management, <i>ktons CO₂</i> • Physical distribution, <i>ktons CO₂</i> | <ul style="list-style-type: none"> • 0 • 0 • 0 • 0 | <ul style="list-style-type: none"> • 50.00 • 471.36 • 317.15 • 154.21 | materials management and physical distribution | <ul style="list-style-type: none"> on measuring and monitoring energy and environmental impacts • Local Government and private logistics industry sector fully support and commit to the replication of successful results of the project |
| COMPONENT 3: CAPACITY BUILDING AND PROMOTION OF GREEN LOGISTICS SYSTEMS | | | | | |
| Outcome 3: Increased application and utilization of energy efficient materials management and physical distribution techniques, technologies and practices in the logistics and manufacturing industries in Zhejiang Province ⁹⁴ | <ul style="list-style-type: none"> • No. of logistics companies actively employing green logistics technologies and techniques in their materials management operations by EOP • No. of logistics companies actively employing green logistic technologies and techniques in their physical distribution operations by EOP | <ul style="list-style-type: none"> • 0 • 0 | <ul style="list-style-type: none"> • 100 • At least 50 | <ul style="list-style-type: none"> • Monitoring reports by the project management office in cooperation with relevant provincial government agencies and logistics companies | <ul style="list-style-type: none"> • Government and provincial logistics industry appreciate the value of green logistics concept and are willing to gain knowledge and skills in establishing and operating green logistics |

⁹⁴ GLIZP will focus on Zhejiang Province. But the green logistic system in Zhejiang will certainly link with the logistic systems in other adjacent provinces and cities. One of the most important outcomes of this project is providing demonstrations in Component 2 which could be applied in other provinces later as part of the Sustainability Plan in Component 3.

| Project Strategy | Objectively Verifiable Indicators | | | Means of Gauging Success | Critical Assumptions |
|------------------|-----------------------------------|----------|--------|--------------------------|--|
| | Indicator | Baseline | Target | | |
| | | | | | systems thereby promoting unified interests and effective organization and coordination in stakeholder participation |

Annex M. Project financing

Table M.1. shows the overall costs and sources of project funding, and table M.2., below, shows the breakdown of the project costs across the proposed outcomes.

Table M.1. Project financing

| Source of financing | Amount | Fraction |
|---|-----------------------|-------------|
| GEF | USD 2,913,700 | 19% |
| Cofinancing | USD 12,130,000 | 81% |
| Government | USD 3,480,000 | 29% |
| Zhejiang Provincial Government | | |
| Cash | USD 1,000,000 | |
| In-kind | USD 300,000 | |
| Fuyang City Government | | |
| Cash | USD 2,000,000 | |
| In-kind | USD 180,000 | |
| Private sector | USD 8,400,000 | 69% |
| Fuyang Hangzhou Transfar Logistics Base Co., Ltd. | | |
| Cash | USD 210,000 | |
| In-kind | USD 3,640,000 | |
| Zhejiang Fuyang Port International Co. Ltd. | | |
| Cash | USD 2,730,000 | |
| In-kind | USD 1,820,000 | |
| UNDP | USD 250,000 | 2% |
| Total project financing | USD 15,043,700 | 100% |
| (Total in-kind contributions) | (USD 5,940,000) | 39% |

Source: Adapted from ProDoc, p. 55

Table M.2. Allocation of GEF grant among project components

| Project component | Amount | Fraction |
|---|----------------------|-------------|
| 1. Policy and Regulatory Support for Green Logistics | USD 590,000 | 20% |
| 2. Green Logistics Systems Demonstration | USD 1,945,000 | 67% |
| 3. Capacity Building and Promotion of Green Logistics Systems | USD 239,950 | 8% |
| Project management cost | USD 138,750 | 5% |
| Total project financing | USD 2,913,700 | 100% |

Source: Adapted from ProDoc, p. 55