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# Independent Terminal Evaluation of the Global Eco-Industrial Parks Programme (GEIPP)

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Office of Evaluation and Internal Oversight

**OFFICE OF EVALUATION AND INTERNAL OVERSIGHT  
INDEPENDENT EVALUATION UNIT**

**Independent Evaluation of  
THE GLOBAL ECO-INDUSTRIAL PARKS PROGRAMME (GEIPP)**



**UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION**

Vienna, February 2024

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Distr. GENERAL | | EIO/IEU/24/R.1 | February 2024 | Original: English

## Abstract

This report presents the evaluation of the Global Eco-Industrial Parks Programme (GEIPP), a five-year initiative launched in December 2018. GEIPP aims to demonstrate the benefits of eco-industrial park approaches in improving resource productivity and promoting inclusive and sustainable industrial development. It consists of two main components: country-level interventions and global knowledge development. The country-level interventions focus on incentivizing and mainstreaming eco-industrial parks in national policies and regulations, as well as supporting the implementation of eco-industrial park opportunities by enterprises. The global knowledge development component aims to generate and disseminate knowledge from past and present UNIDO interventions to inform strategies and policies. The program covered seven pilot countries, including Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine, and Vietnam, with a total of 21 eco-industrial parks.

The evaluation identified several lessons and recommendations. It emphasized the importance of supporting environmentally friendly innovation while ensuring the inclusion of small and medium-sized enterprises (SMEs). It also highlighted the need to strengthen partnerships within the UN system, promote collaboration among UNIDO programs, and prioritize system-wide approaches. Recommendations included addressing socio-economic aspects, improving communication and feedback mechanisms, and supporting SMEs in adopting eco-industrial practices.

Overall, the evaluation underscored the significance of eco-industrial park approaches in improving resource productivity and fostering sustainable industrial development. It emphasized the importance of integrating these approaches into national policies, supporting enterprises in implementing them, and sharing knowledge and lessons learned internationally. The findings and recommendations aim to enhance the effectiveness and impact of GEIPP and similar initiatives in the future.

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## Acknowledgements

The evaluation team acknowledges and highly values the support provided by all stakeholders who contributed to this evaluation with their time and inputs. In particular, many stakeholders in the four mission countries (Colombia, Peru, South Africa and Viet Nam) gave freely of their time to assist the team. Particular thanks are given to the UNIDO and SECO managers and staff, who participated in discussions and gave written feedback on report drafts. The views expressed greatly contributed to this evaluation, although its final version and recommendations are the responsibility of the evaluation team.

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## Abbreviations and acronyms

Abbreviation	Meaning
CHF	Swiss Francs
CP	Cleaner Production
CPC	Cleaner Production Centre
CSSC	Country Specific Steering Committee (of the GEIPP)
CTA	Chief Technical Advisor
EE	Energy Efficiency
EIP	Eco-Industrial Park
EMS	Environmental Management System
EST	Environmentally Sound Technologies
EUR	Euro
FGD	Focus Group Discussion
GEF	Global Environment Facility
GEIPP	Global Eco-Industrial Park Programme
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (main commissioning party of the German Federal Ministry for Economic Cooperation and Development, BMZ)
GQSP	Global Quality and Standards Programme (a UNIDO programme funded by SECO)
HQ	Headquarters
IED	Independent Evaluation Division (UNIDO)
IRPF	Integrated Results and Performance Framework (UNIDO)
IS	Industrial Symbiosis
M&E	Monitoring and Evaluation
MTE	Mid-term Evaluation
NCPC	National Cleaner Production Centre
RBM	Results Based Management
RECP	Resource Efficient and Cleaner Production
SC	Steering Committee
SDG	Sustainable Development Goals
SECO	State Secretariat for Economic Affairs (Swiss Government)
SME	Small and Medium-sized Enterprise
ToC	Theory of Change
ToR	Terms of Reference
UN	United Nations
UNIDO	United Nations Industrial Development Organization

- Country-specific acronyms are shown in relevant report sections

## Executive summary

The UNIDO Global Eco-Industrial Parks Programme (GEIPP) began in 2018 with a project duration of five years. It built on previous activities by UNIDO and partners to scale up the efforts of the Resource Efficiency and Cleaner Production (RECP) Programme and focused on promoting sustainable industrial production by integrating support at the enterprise, park, and policy levels.

The GEIPP's objective is to demonstrate the viability and benefits of Eco-Industrial Park approaches in scaling up resource productivity and improving the economic, environmental and social performances of businesses. GEIPP has two main components, which are expected to contribute towards the attainment of three outcomes, through delivery of nine outputs. The two components are country-level interventions and global knowledge development. The pilot countries include Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine, and Vietnam, with a total of 21 "pilot" Eco-Industrial Parks.

The purpose of the evaluation was to assess the performance of the GEIPP Programme and provide recommendations for future programs, with a focus on learning to enhance the design and implementation of UNIDO projects.

The evaluation addressed the following key evaluation questions:

- How well has the programme performed in terms of doing the right things and doing things right with good value for money?
- What are the key results achieved by the programme and to what extent are they likely to be sustained? How successful are the new elements of the GEIPP, such as collaboration with park management and policy-level work?
- Has the programme been implemented efficiently and cost-effectively, and has it been able to adapt to changing conditions?
- What are the key drivers and barriers to achieving the long-term objectives?
- What are the key risks and how might they affect the continuation of results after the programme ends?
- What are the key lessons learned from country-level interventions, including good practices? What works and what doesn't?

Methods used included interviews and discussions with stakeholders; site visits to selected Eco-Industrial Park sites in four participating countries, namely Colombia, Peru, South Africa and Viet Nam; desk review of relevant documentation; validation of the project's logical framework; Theory of Change assessment; UNIDO ratings of evaluation and project criteria; and assessment of follow-up needs, environmental and social safeguards, and gender focus and results.

The evaluation found that while the country missions primarily emphasized interventions and results at the national level, global approaches and activities were also considered important by national governments, agencies, and park managers.

When assessing progress against the Theory of Change, progress up to the output level has been medium. For outcomes, none of the four governments assessed on the basis of missions has yet been able to effectively mainstream EIP at the national level and there are varying levels of progress towards this stage. The global level has reached the highest progress for outcomes, in terms of widespread recognition and support for EIP as a concept and approach. SMEs have not been enabled to significantly progress and therefore reduce

the assessment of the programme's overall contribution towards its intended objectives. The overall assessment of GEIPP is moderately satisfactory (4).

The recommendations section provides several key recommendations for UNIDO management, GEIPP, and the collaboration between SECO and UNIDO. Here is a coherent summary of the recommendations:

#### UNIDO Management Recommendations:

- Advise programmes like GEIPP on supporting environmentally friendly industrial innovation while not leaving behind SMEs and low-profile industrial locations.
- Clearly define and promote socio-economic and gender benefits, seeking partnerships within the UN system to strengthen these approaches.
- Ensure that UNIDO programmes collaborate and complement each other to maximize development results.
- Place more emphasis on designing and implementing programmes through a system-wide or "One UN" approach.

#### GEIPP Recommendations:

- Increase funding to effectively address global priorities such as reducing poverty, social inequality, promoting Just Transition, and gender equality.
- Develop specific and coherent objectives to target socio-economic aspects aligned with the Sustainable Development Goals.
- Strengthen linkages between theory and practice through improved communication and feedback mechanisms.
- Implement systematic approaches and specialized financing to address challenges faced by Small and Medium-sized Enterprises (SMEs) in adopting eco-industrial production.
- Pay early attention to assessing potential institutions for long-term implementation and identify suitable options for capacity building support.

#### SECO/UNIDO Collaboration Recommendations:

- Focus on medium to long-term sustainability and address weaknesses, threats, and opportunities for impact.
- Explore a more inclusive approach that allows the participation of both brownfield and greenfield sites in GEIPP.
- Seek funding sources to strengthen specific aspects of GEIPP at the country level.

These recommendations aim to address the identified gaps and challenges in achieving the desired outcomes of GEIPP and promote greater coherence, inclusivity, and sustainability in the programme's implementation.

# 1. Introduction

## 1.1 Introduction to GEIPP

The UNIDO Global Eco-Industrial Parks Programme (GEIPP) in Developing and Transition Countries began in 2018 with an expected five-year time span. The programme builds on substantial contributions from previous activities undertaken by UNIDO and its partners, so that its results reflect activities, learning and evolution of approaches over a much longer period. The approach originated from a joint UNIDO-UNEP National Cleaner Production Centres Programme (NCPC Programme). This was launched in 1994, with the objective of increasing the competitiveness and productive capacity of industry, specifically Small and Medium-sized Enterprises (SMEs), through the implementation of Cleaner Production (CP) and the application, adaptation and diffusion of Environmentally Sound Technologies (ESTs).

Through more than 20 years of operation, with consistent funding and support from SECO, the concept introduced in the NCPC evolved to incorporate an emphasis on resource efficiency, which provided the foundation for the 2012 to 2017 Resource Efficiency and Cleaner Production (RECP) Programme. This made substantial contributions towards the identification, development and testing of tools and methods for RECP, which could be adapted to the diverse conditions across developing and emerging economies. By the time of its terminal evaluation, the RECP had helped strengthen at least fifty-eight (58) National Cleaner Production Centres in fifty-five (55) countries, with a good record for sustainability. The RECP targeted and addressed country policy and regulatory frameworks, which its theory of change identified as necessary to promote transformation towards sustainable industrial production in partner countries.

Although the RECP Terminal Evaluation reported positive features and results, it also identified a major challenge. The amounts of resources saved and emissions avoided at enterprise level still fell far short of requirements to promote a healthy environment at national or global levels. Scaling up remained as a vision, which would require substantial additional efforts, before results could be discerned.

The Global Eco-Industrial Parks Programme (GEIPP) therefore aims to address key recommendations of the Resource Efficiency and Cleaner Production (RECP) Programme Terminal Evaluation: in particular to scale up RECP efforts to the level of entire eco-industrial parks and to help to integrate support at the individual enterprise and park scales, as well as to address critical policy issues.

## 1.2 Evaluation purpose and objectives

The purpose of this evaluation is to independently assess the GEIPP Programme to help UNIDO improve performance and results of future programmes and projects. Although the programme will not come to an end until December 2023, this evaluation has been conducted some months before the planned completion date so that its findings and

recommendations can inform implementation of the next phase of GEIPP Country-Level Initiatives envisaged to start in 2024<sup>1</sup>.

According to its Terms of Reference<sup>2</sup>, this evaluation has **three objectives**, as listed below:

**Evaluation Objective 1:** Assess programme performance in terms of relevance, effectiveness, efficiency, coherence, sustainability and progress towards impact.

**Evaluation Objective 2:** Identify key learning to feed into the design and implementation of forthcoming GEIPP programmes.

**Evaluation Objective 3:** Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

Since Objectives 2 and 3 appear to overlap, the distinction between them is here interpreted to mean that Objective 2 will produce material, which will largely inform new programmes in closely related fields (such as the intended GEIPP 2); while the learning provided under Objective 3 can be at a more generic level, informing a broader range of UNIDO interventions, possibly including at a strategic or policy level.

## 2. The GEIPP objective

The GEIPP's objective is to demonstrate the viability and benefits of Eco-Industrial Park approaches in scaling up resource productivity and improving economic, environmental and social performances of businesses. This is expected to contribute to inclusive and sustainable industrial development in the participating developing and transition economies.

### 2.1 Components of GEIPP

GEIPP has two main components, which are expected to contribute towards the attainment of three outcomes, through delivery of nine outputs. The components and outcomes are outlined below.

#### Component 1: Country level interventions

**Outcome 1:** EIP incentivised and mainstreamed in relevant policy and regulations leading to an increased role of EIP in environmental, industry and other relevant policies at the national levels in the participating countries.

**Outcome 2:** EIP opportunities identified and implementation started, with environmental (e.g., resource productivity), economic and social benefits achieved by enterprises confirmed. The implementation of EIP opportunities by enterprises and other

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<sup>1</sup> Initial discussion with programme stakeholders showed that the evaluation timeline would make it too late to contribute towards design of the proposed next phase of GEIPP, owing to timing of funding procedures, but that it would be able to inform implementation approaches. By the time of this report, the second phase of GEIPP had already been formally agreed.

<sup>2</sup> These Terms of Reference are attached as Annex 1 in Volume 2 of this report.

organisations will be supported by the EIP services providers and will lead to reduction of the environmental footprint and operational and compliance costs of businesses, and an increase in their natural resource productivity.

According to the original programme/project document<sup>3</sup>, GEIPP focuses on “brownfield” operations only, in order to secure realistic and tangible results within its resources (timing, financial and organisational). This means that its “pilot” sites are in pre-existing production zones and will support their transformation towards sustainable development (rather than increased production). The sites will thus reflect the results of “reconversion” as opposed to any benefits, which might be obtained from sites, which have been “designed from scratch”. Since Industrial Parks are already a major approach in a great many countries, this approach offers major potential for cost-effective sustainable development.

## Component 2: Global Knowledge Development

The objective of this component is to generate and disseminate knowledge from present and past UNIDO interventions, which can be used as a foundation for the promotion of Eco Industrial Production internationally. It aims to generate and disseminate programme-relevant knowledge and to inform country-wide strategy and policy measures across the seven participating countries, as well as to reach a broader audience within and beyond UNIDO and its partners with key lessons derived from the programme experience. Component 2 has one outcome:

**Outcome 3:** EIP tools developed, service delivery capacity enhanced and lessons effectively exchanged and learned among participating countries. EIP tools defined and described in a flexible manner, allowing their application beyond the immediate programme.

The concept therefore introduces a symbiotic relationship between Outcome 3 and the other two Outcomes. It develops approaches and tools for country level interventions, assembles evidence-based data from the country level, assesses and derives lessons from this and feeds these lessons back into evolving country level approaches.

## 2.2 Pilot Countries

In the initial programme document<sup>4</sup>, four countries were selected for interventions under component 1, based on SECO priority countries and UNIDO country assessments. However, this number was later enlarged to include seven countries - Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine and Vietnam, which entered the programme at different times. All country programmes are expected to address the two outcomes of the programme at this level and are structured accordingly. The seven countries encompass a total of 21 “pilot” Eco Industrial Parks, as listed in Annex 2 of Volume Two.

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<sup>3</sup> Global Eco-Industrial Parks Programme (GEIPP) in Developing and Transition Countries. Project Document. GEIPP. UNIDO. Undated.

<sup>4</sup> Op. Cit.

## 2.3 Programme Funding

Table 1: Overview of GEIPP

<b>Programme Title</b>	Global Eco-Industrial Parks Programme (GEIPP) in Developing and Transition Countries
<b>Countries covered in this programme</b>	<b>Country-based interventions:</b> Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine, Viet Nam
<b>Start date (as per original letter of agreement)</b>	1.12.2018
<b>Completion date (as per original letter of agreement)</b>	31.12.2023 (5 years)
<b>Expected completion date</b>	31.12.2023
<b>Donor</b>	Swiss Confederation through the State Secretariat of Economic Affairs (SECO)
<b>Total budget</b>	CHF 17,184,395 (incl. 13% support costs) EUR 15,533,214 (as per UN exchange rate of March 2021: 1 Euro = 1.1063 CHF)

The total funds listed above were planned to resource both global components and individual country activities, according to the documents of the projects shown below. Allocations varied between countries, largely in the range from Euro 1 million to Euro 2 million. Amounts actually received have fluctuated according to international exchange rates. Details of expenditures are provided in Section 4 below.

## 3. Evaluation methodology

### 3.1 Evaluation Framework

This evaluation responds and conforms to UNIDO’s evaluation policy (2021 revision) and evaluation manual (2018), which themselves draw upon the OECD-DAC Evaluation Criteria<sup>5</sup>: (relevance, coherence, efficiency, effectiveness, sustainability). In line with UNIDO policy towards long-term impact, the OECD-DAC ‘impact’ criterion has been simplified to measure ‘progress to impact’. The Evaluation Framework is shown in Annex 3 of Volume Two.

Since “coherence” is still relatively new to the OECD-DAC evaluation criteria, available UNIDO documents lack specific guidance on evaluating this aspect. Within the context of the UN reform process, the relationship of UNIDO interventions to the SDGs, as well as their coherence and contribution towards UN Sustainable Development Cooperation Frameworks at country level are core aspects. However, coherence also refers to relationships between the project intervention and national and local policies, strategies

<sup>5</sup> The evaluation team has been informed that the UNIDO evaluation documents are under revision

and activities, as well those of other potential or actual partners, including private sector bodies and civil society organizations. Given this broad range of potential coverage, it is clear that coherence is likely to have substantial overlap with other criteria, particularly effectiveness and sustainability.

## 3.2 Key Evaluation Questions

The UNIDO Evaluation Manual cautions against the temptation to outline too many areas for assessment, which can lead to unfocussed and superficial analysis and conclusions. Accordingly, the following concise set of key evaluation questions has been adopted. These questions conform with those used in the Mid Term Evaluation, to aid coherence of the assessment.

1. **How well has the programme performed?** Has the programme done the right things? Has the programme done things right, with good value for money?
2. **What are the programme's key results** (outputs, outcomes and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent are the achieved results likely to be sustained after the programme completion? Is it on track to achieving its objectives? How successful are the new elements of the GEIPP, in particular the collaboration with the park management and the work at the policy level? What are the remaining barriers to achieving the objectives in the remainder of the programme and how to overcome them?
3. **Has the programme been implemented efficiently and cost-effectively and has it been able to adapt to any changing conditions?** Has the financial expenditure been implemented as planned? To what extent have programme-level monitoring and evaluation systems, reporting, and communications been used to support the programme implementation?
4. **What are the key drivers and barriers to achieving the long-term objectives?** To what extent has the programme helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?
5. **What are the key risks** (e.g., in terms of financial, socio-political, institutional and environmental risks) and how might these risks affect the continuation of results after the programme ends?
6. **What are key lessons learned from country level interventions, including good practices?** What works? What doesn't? What lessons can be drawn from the more and less successful practices in designing, implementing and managing this and future programmes?

To address the questions outlined in the above framework, the evaluation has used the following mixed methods:

- **Interviews and discussions:** Individual and group interviews and discussions were held with a broad range of stakeholders.
- **Site visits:** To a total of 8 (out of the total of 21) EIP sites in 4 (out of the total of 7) participating countries. The country selection process is described in Section 5.1 below.
- **Desk review:** A desk/literature review analysed relevant documentation such as material produced through the project (mid-term review, supported policies & plans, technical standards, communications material, Project Steering Committee minutes and financial data), and relevant external documentation.

- **Logframe validation:** The Logframe included in the project document outlines a detailed set of monitoring indicators intended to be systematically collected and reported throughout implementation. Available results reporting has been used to prepare a portfolio overview presented in Section 4 of this report.
- **TOC assessment:** This evaluation report includes a summary of progress towards key elements of the project’s theory of change. Drawing on evidence from all the evaluation tools, this serves as an easy-to-follow summary of the project’s immediate progress, but also identifies progress towards the longer-term impacts to which the project aims to contribute.
- **UNIDO ratings:** All UNIDO<sup>6</sup> project evaluations are required to rate a series of evaluation and project criteria against a six-point scale, ranging from ‘highly unsatisfactory’ to ‘highly satisfactory’.

In addition to the criteria for which ratings are required, the evaluation has assessed the following topics, for which ratings are not required:

- **Need for follow-up:** e.g., to report to UNIDO management any suggestions of mismanagement (which would be beyond the mandate and capacity of the evaluation), unintended negative impacts or risks.
- **Environmental and Social Safeguards:** were appropriate environmental and social safeguards addressed in the project’s design and implementation? These might include preventive or mitigation measures for any foreseeable adverse effects and/or harm to environment or to any stakeholder.
- **Gender Focus and results.** To what extent has the project adopted a pro-active gender focus in terms of its design, implementation, management and performance assessment?

### 3.3 Theory of Change Approach

Theories of Change (ToCs) are a strongly advocated tool in the UNIDO Evaluation Manual to explore the basic rationale behind an intervention and progress towards its ultimate impact objectives. The TOC should describe the results an intervention aims to achieve, the longer-term impacts towards which it aims to contribute, how the intervention works towards those results, and the main assumptions behind the intervention’s approach. In turn, ToCs also support the identification of key elements that should – in due course – be evaluated. As such, ToCs are frequently used as the starting point for developing evaluation approaches and for identifying evaluation questions. Section 6 of this report assesses GEIPP progress against a Theory of Change for the programme.

### 3.4 Evaluation Implementation and Independence

The Mid Term Evaluation of GEIPP was constrained by COVID and had only web-based contact with country projects. However, it held extensive discussions with UNIDO personnel in Vienna and elsewhere, conducted an extensive review of documents and made technical assessments of key GEIPP products. Specifically, it included “Annex 3: Results of the quality

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<sup>6</sup> See page 24, UNIDO Evaluation Manual, 2019.

assessment of the GEIPP global knowledge products”. This provides a detailed review of the following types of documents and tools:

- GEIPP tools and Global Knowledge Hub – Progress, Quality and Usefulness of Tools for Policy Makers
- Tools on meso level  
Tools on micro level
- Lessons learned and best practice case studies
- Training materials  
Guidance documents  
Publication
- Suggested new tools

Given this pre-existing detailed and independent assessment of global tools and materials, the focus of the current evaluation has been strongly on the implementation and effects of GEIPP at country level. Accordingly, its implementation moved rapidly to undertake missions to the four selected countries. After an initial introductory virtual meeting with project managers in UNIDO and SECO, the evaluators proceeded directly to countries expected to benefit from GEIPP, to gather primary data directly from stakeholders with different types and levels of engagement with each national project. This avoided any risk to the independence of evidence gathered at field level, which might have arisen by approaching country implementation through the “filter” of perceptions of central programme managers. These perceptions are better accessed through circulation of the draft evaluation report, at which stage they can be calibrated against first hand and current evidence based on personal interviews, discussions and physical observation of specific EIPs.

## 4. Overview of GEIPP portfolio progress

### 4.1 Country-level interventions: an overview

As outlined in Sections 1 and 2 above, the UNIDO Global Eco-Industrial Parks Programme has a country-level component (Component 1) that focuses on supporting the development of eco-industrial parks in selected countries. This component aims to promote sustainable industrial development, enhance resource efficiency, reduce negative environmental impacts and improve social conditions in and around the industrial parks (and sometimes zones) of the countries where it is implemented. Component 2 of the programme focusses on its global aspects. Although this operates at a higher level than individual country portfolios, the evaluation found that the two components are actually closely inter-related, as intended in the GEIPP concept. Figure 5 of the original GEIPP project document illustrates the “transversal’ role of the global component, which is intended to derive and disseminate understanding and lessons on the basis of feedback from country projects. Although this report section does not focus on the global component, its contribution is noted in the country implementation analysis in Section 5.

This portfolio analysis is based primarily on the original project documents, on the latest progress reports (December 2022) and on internal UNIDO databases. The country level projects show varying budgets, different starting dates and individual project durations. Therefore, the expenditure and project time elapsed also show variations. Table 2 below present basic information on the seven country-level interventions:

**Table 2: Country Project Dates and Budgets**

<b>COUNTRIES</b>	<b>PROJECT ID</b>	<b>START DATE</b>	<b>BUDGET \$ US</b>	<b>BALANCE BUDGET@ JUNE 2023 \$ US</b>
<b>Columbia</b>	180319	January, 2019	<b>2,431,689</b>	<b>259,533</b>
<b>Egypt</b>	190088	January, 2022	<b>1,163,111</b>	<b>394,186</b>
<b>Indonesia</b>	190324	July, 2020	<b>1,487,992</b>	<b>157,659</b>
<b>Peru</b>	180318	August, 2020	<b>2,197,433</b>	<b>448,615</b>
<b>South Africa</b>	200019	July, 2020	<b>1,249,786</b>	<b>89,672</b>
<b>Ukraine</b>	180245	January, 2020	<b>1,044,466</b>	<b>61,430</b>
<b>Vietnam<sup>7</sup></b>	190324	November, 2020	<b>1,403,849</b>	<b>221,962</b>

Source: evaluation team based on ProDocs, progress reports and ERP data

The evaluation team conducted missions to four countries involved in the programme. Each of these countries works directly with three pilot eco-industrial parks, selected after a detailed preliminary assessment undertaken by the GEIPP team, using a specific tool designed to guide this process. Table 3 below provides a listing of the EIPs active in the four mission countries.

**Table 3: EIPs in the Four Mission Countries**

<b>Country</b>	<b>EIP name</b>	<b>No. of companies</b>	<b>Main Industry</b>
<b>Colombia</b>	Zona Franca del Cauca	32	Food
	Zona Franca de Occidente	34	Pharma
	Parque Industrial Malambo SA	35	Steel
<b>S. Africa</b>	ELIDZ	29	Automotive
	Phuthaditjhaba	296	Textile
	Ekandustria	44	Textile
<b>Viet Nam</b>	Deep C (Hai Phong City)	59	Petrochemical
	Amata (Dong Nai province)	151	Plastic
	Hiep Phuoc (Ho Chi Minh City)	104	Pharma
<b>Peru</b>	Indupark	14	Food/Pharma
	Sector 62	7	Steel
	La Chutana	16	Steel

Source: evaluation team based on progress reports

The GEIPP compiles results according to specified Results-Based Management indicators. The programme management team developed a complex RBM monitoring system aiming at harmonizing and streamlining the collection of information from the different country-level interventions. The list of indicators reflects both the SECO Standard Indicators and

<sup>7</sup> The spelling of the country varies across reports – Viet Nam or Vietnam. This is reflected in this document.

the UNIDO IRPF indicators and it is intended to cover environmental, social, economic and policy areas. The evaluation team collated reported progress of the different country-level interventions, focusing on the biennium 2021-2022, and including partial data for 2023 as of 30 June, as shown in Tables 4 and 5 below.

**Table 4: Benefits Recorded by the Seven Country Projects**

	Peru			South Africa			Ukraine			Viet Nam		
	2021	2022	2023	2021	2022	2023	2021	2022	2023	2021	2022	2023
<b>Environmental benefits</b>												
Energy efficiency - Kilowatt hours saved through energy efficiency	0	0	152.900	0	6.454.142	6.385.960	0	2.262.893	2.392.581	0	3.161.690	7.239.956
Kilowatt hours additionally produced from renewable energy	0	0	0	0	68.182	68.182	0	0	0	0	0	0
Water efficiency Cubic meter water saved (Ratio of water reused/recycled)	0	0	0	0	0	0	0	1.091	2.879	0	12.595	62.769
Waste reuse and recycling Metric ton material saved (Ratio of solid waste reused/recycled)	0	0	2	0	0	0	0	0	10	0	0	11.035
Climate change benefits tCO2 Eq. / year	0	0	35	0	2.414	2.414	0	515	576	0	2.666	88.060
<b>Social performance and capacity building</b>												
Number of SME-staff trained (tenant companies)	0	227	236	140	159	159	10	31	49	154	549	606
Number of industrial park management-staff trained	15	61	77	131	180	192	79	83	94	111	342	370
Number of involved staff from relevant governmental agencies	138	151	177	295	393	403	214	314	373	139	200	233
Number of trained service providers	134	110	131	153	300	301	36	38	78	221	499	573
Number of EIPs activities by enterprises	0	0	0	7	11	12	0	8	9		17	96
<b>Economic Performance</b>												

Number of initiatives of provider of business services.	15	71	121	21	33	36	2	95	128	2	16	9
Number of actual investments in RECP/EIP identified options	0	0	1		1	1	0	5	7	0	0	3
Amount of actual investments on RECP/EIP identified options (USD) Park management and tenant companies.	0	0	0		215.000	215.000	0	106.829	381.989	0	0	913.793
Amount of actual investments on RECP/EIP related measures via co-financing (Government or financial institutions)	0	0	0		0	0	0	3.955	4.520	0	0	0
Green Investments additionally triggered in USD and financing instruments supported (sum of two above indicators)	0	0	0		215.000	215.000	0	110.784	386.509	0	0	913.793
<b>Policy</b>												
Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	4	6	6	1	1	1	0	1	3	0	1	5

	Colombia			Egypt			Indonesia		
Environmental benefits	2021	2022	2023	2021	2022	2023	2021	2022	2023
Energy efficiency - Kilowatt hours saved through energy efficiency	0	1.452.189	1.448.378	0	6.454.142	11.310.000	1.982.705	10.057.477	13.178.000
Kilowatt hours additionally produced from renewable energy	0	728.000	728.000	0	68.182	0	0	621.000	621.000
Water efficiency Cubic meter water saved (Ratio of water reused/recycled)	0	0	280.800	0	0	0	21.775	32.823	51.986
Waste reuse and recycling Metric ton material saved (Ratio of solid waste reused/recycled)	0	245	575	0	0	0	12	20	26
Climate change benefits tCO2 Eq. / year	0	1.143	2.574	0	2.414	5.655	1.243	6.215	8.205
<b>Social performance and capacity building</b>									

Number of SME-staff trained (tenant companies)	4	692	726	140	159	153	220	661	769
Number of industrial park management-staff trained	15	313	386	131	180	123	102	272	416
Number of involved staff from relevant governmental agencies	44	49	62	295	393	235	122	386	483
Number of trained service providers	9	9	22	153	300	83	58	104	111
Number of EIPs activities by enterprises	0	15	17	7	11	0	7	7	7
<b>Economic Performance</b>									
Number of initiatives of provider of business services.	57	63	153	21	33	84	109	181	334
Number of actual investments in RECP/EIP identified options	0	1	2	1	1	0	11	23	38
Amount of actual investments on RECP/EIP identified options (USD) Park management and tenant companies.	0	0	27.036	0	215.000	0	316.800	1.497.143	1.749.728
Amount of actual investments on RECP/EIP related measures via co-financing (Government or financial institutions)	0	0	607.009	0	0	0	0	0	0
Green Investments additionally triggered in USD and financing instruments supported (sum of two above indicators)	0	0	634.046	0	215.000	0	316.800	1.497.143	1.749.728
<b>Policy</b>									
Conducive policies and regulations implemented and enforced and EIP promoted by strong custodian at the national level	0	8	0	0	1	0	0	1	1

Source: evaluation team based on progress reports

The indicators from individual countries have been aggregated at the programme level and the results are presented in Table 5 below, drawing on the Annual Report 2022 with the inclusion of data for first semester of 2023. Both the country-specific and the aggregate results show a predictable pattern. Generally, the first results are achieved in capacity building and prepare the ground for accelerated action with resultant environmental investments and benefits. The progression in terms of completed capacity building activities is clearly seen by comparing years 2021 and 2022. Regarding environmental savings, mostly related to increased energy efficiency, these increased notably in 2022. In terms of economic performance, efforts are also evident to increase the number of actual investments in RECP/EIP initiatives, whose levels are still below expected targets, except for the case of Indonesia and, to a lesser extent, South Africa. Although substantial efforts and progresses have been made to enhance the regulatory frameworks in participating countries, the reported results show that more still needs to be done to ensure a solid policy basis for replication and sustainability of any EIP transformation.

**Table 5: Overview of Reported GEIPP Country Level Benefits**

Global Eco Industrial Parks Programme (GEIPP)				
Global Eco Industrial Parks Programme (GEIPP)				
	<b>Environmental benefits</b>	<b>2021 values</b>	<b>2022 values</b>	<b>2023 values (30/06/23)</b>
1	Energy efficiency Kilowatt hours saved through energy efficiency	1,982,705	23,388,391	42,107,776
2	Renewable Energy additionally produced in kilowatt hours	0	1,417,182	1,417,182
3	Water efficiency Cubic meters water saved	21,775	46,509	398,434
4	Waste reuse and recycling Metric ton material saved	12	265	11,647
5	Climate change benefits tCO2 Eq. / year	1,243	12,952	107,518
Social performance and capacity building				
1	Number of SME-staff trained (tenant companies)	544	2,364	2,754
2	Number of industrial park management-staff trained	481	1,360	1,787
3	Number of involved staff from relevant governmental agencies	969	1,725	2,253
4	Number of trained service providers	618	1,130	1,570
5	Number of EIPs activities by enterprises	14	58	141
Economic Performance				
1	Number of initiatives of provider of business services.	204	459	865
2	Number of actual investments in RECP/EIP identified options	11	30	52
3	Amount of actual investments on RECP/EIP identified options (USD)	316,800	1,818,972	3,287,546
4	Amount of actual investments on RECP/EIP related measures via co-financing	0	3,955	611,529
5	Total green Investments additionally triggered in USD	316,800	1,822,927	3,899,076
Policy				
1	Conducive policies and regulations implemented and enforced	5	9	16

Source: GEIPP Annual reports 2022 and GEIPP monitoring tool

## 4.2. Highlighted activities and achievements of participating countries<sup>8</sup>

### Colombia:

The UNIDO GEIPP programme in Colombia started in 2019 and will last until the end of 2023. The project is implementing a number of activities to achieve its objectives, including:

- Conducting a national assessment of the potential for EIPs in Colombia.
- Providing technical assistance to the government and private sector to develop and manage EIPs.
- Drafting a roadmap for the development of EIPs in Colombia (under finalization).
- Providing technical assistance to the government and private sector to develop and manage EIPs.

The following are among the main reported achievements of the GEIPP Colombia Project:

- The project has helped to establish the first EIPs in Colombia.
- Regional mapping of existing capacity institutions and service providers.
- The *Regulatory Impact Study* (RIA) was carried out.
- Development of the *Access to Finance – A2F* tool, which seeks to assess the extent of information that EIP programme stakeholders have about available financing options.
- Consolidation of the Community of Practice.
- The project has trained over 700 Colombian stakeholders on EIPs, together with more than 300 Park management staff.
- The project has organized a number of workshops and events to promote EIPs in Colombia and it established over 150 new business services initiatives.
- The project has helped to significantly raise awareness of EIPs among the Colombian government and private sector.

### Egypt:

After some initial delays in the signing phase of the programme, the GEIPP Egypt started in January 2022 and its first Steering Committee took place in June 2022, approving the work plan for the first year of implementation.

The following are among the main results reported by the programme in its first year of implementation:

- A Policy Gap Analysis report was drafted by a policy expert.
- The project's communications strategy was developed, and a dedicated website was launched.
- The EIP Framework document was translated to Arabic.
- Two service providers were selected to implement activities in the identified parks.
- The stakeholders mapping was completed.

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<sup>8</sup> Further details are provided for the four evaluation mission countries in the associated Annexes document.

- The project allowed for over 11,310,000 kWh saved through energy efficiency measures in 2023.
- The project trained more than 150 SMEs staff and 123 park management staff in 2023.
- Participation at a side event of the UNFCCC COP27 in Sharm el-Sheikh in November 2022 at the UN Pavilion to present the EIP work.

### Indonesia:

The GEIPP-Indonesia project document was signed in April 2020 by UNIDO and the Ministry of Industry with an effective start date of 1 July 2020 and a projected end date of 31 December 2023. The project has achieved a degree of maturity and many of its intended results are already reported as delivered.

Some of the main results already reported by the project are:

- A stakeholder and policy mapping document was updated in the first quarter of 2022.
- The EIP policy action plan was updated in 2022.
- The Inter-Ministerial Forum Decree by Ministry of Industry was launched in December 2022 and will be used as the main guideline to drive the strengthening of EIP-related national institutions and policies.
- Over 10 million saving in kWh due to energy efficiency in 2022 and over 13 million in 2023.
- More than 700 SME Staff trained and 416 park management staff trained in 2023.
- Benchmarking and in-depth analysis of industrial parks: MM2100 Industrial Town, Batamindo Industrial Park and Karawang International Industrial City were reassessed against the international framework for the EIPs in late 2022.
- A capacity needs assessment report has been drafted highlighting capacity-building/training areas for the industrial parks.
- Several thematic workshops and EIP awareness training were organised.
- Focus groups discussions on Industrial Synergy organised.

### Peru:

The GEIPP Peru Project addresses and promotes the development of Eco-Industrial parks in the country, with the Ministry of Production (PRODUCE) acting as National Focal Point. Project activities started in August 2020 and are expected to conclude at the end of 2023.

The following are among the main achievements reported by the project in its Progress report December 2022:

- Roadmap for Eco-Industrial Parks in Peru, leading to the creation of a Community of Practice (CoP).
- Training of public officials and members of the CoP.
- Ad-hoc training was carried out for 15 officials of the National Productive Diversification Program (May 2022).
- Creation of a specialized high-level working group composed of representatives of the 3 prioritized industrial parks, 3 directorates of PRODUCE and the GEIPP Peru team.
- Preparation of the Internal Regulations of the National Council of Industrial Parks.

- Training sessions on issues of industrial sustainability, good practices, PEI concepts, benefits, and examples of best practices in EIP development and transition (early 2022).
- Eight assessment sessions were held for action plans of the EIPs and identification of industrial opportunities for EIPs.
- Symbiosis workshops for the three selected parks.
- Several communication initiatives, use of social media and development of a dedicated website.
- The number of initiatives of providers of business services is steadily increasing year after year, and it now accounts for around 121 new initiatives in mid-2013.
- In the first semester of 2023, then, the project was able to show its first results in terms of environmental benefits, leading to saving of more than 150,000 kWh due to energy efficiency gains.

### South Africa:

The project was officially launched in July 2020 and will be completed by 31st December 2023 with the Department of Trade, Industry and Competition as the project's main institutional counterpart.

The following are among the main results reported in its Progress Report 2022:

- Establishment of an Eco-Industrial Parks (EIP) Roundtable forum for national coordination.
- Several feasibility studies completed for each park on different topics, such as green hydrogen, e-waste recycling, collection of waste and recyclables, waste management.
- Organization of the first National EIP Day.
- EIP Concept Planning workshop (November 2022).
- Waste Management training for industrial parks management, tenant companies, and government authorities (November 2022).
- Inventory of the technical assistance needed to support the implementation of prioritized EIP opportunities.
- Identification of additional EIP opportunities through RECP assessments.
- Initiation of a collaboration with the Cities Support Programme (CSP) of the National Treasury (NT) to explore potential synergies and follow-up activities for a future phase.

Notably, in the first semester of 2023 the project was also able to achieve additional energy savings (more than 6million kWh saved) increasing its level of environmental benefits. The project also reports to have successfully trained 159 SME Staff and 192 Park management staff.

### Ukraine:

The Ukraine GEIPP project started in 2020 and will last until the end of 2023. The project made significant progress in its first year of implementation. The national assessment of the potential for EIPs in Ukraine was completed and the roadmap for their development is being finalized. The project has also provided technical assistance to the government and private sector to develop and manage EIPs. At the same time, the project organized several training sessions and workshops on EIPs, and it has promoted the exchange of knowledge and experiences on EIPs between Ukraine and other countries.

The achievements of GEIPP in Ukraine include:

- helped to establish the first EIP in Ukraine.
- trained over 100 Ukrainian stakeholders on EIPs.
- organized a number of workshops and events to promote EIPs in Ukraine.
- helped to raise awareness of EIPs among the Ukrainian government and private sector.

Ukraine had to rethink its plans and prioritize the needs of its defense after hostilities were initiated on 24 February 2022. The armed conflict has forced the country into a war economy, with an expected drop in output of almost half in 2022. The EIP programme had to rethink some of its ongoing processes and activities, most of which were delayed or moved to different locations. Despite the constraints posed by the current situation, the programme is set to continue in its implementation in the upcoming months.

Despite the current scenario and the constraints faced by the local project management team, the project managed to increase the number of business initiatives in 2023, presenting seven new investment opportunities and identifying new business options for the parks. The environmental benefits reported by the project in mid-2023 present a picture of over 2.3 million kWh saved.

#### **Viet Nam:**

Launched in November 2020 with an intended end date of 31 December 2023, the Viet Nam country-level intervention is carried out with the support of the Ministry of Planning and Investment (MPI). In its 30 months of implementation, the project has achieved substantive results and completed many of its planned outcomes and activities.

After developing a stakeholder assessment report, used as an input into policy formulation and supporting the EIP development in Vietnam, the project was successful in backing up the country to create an enabling and conducive policy environment for development of EIP in Viet Nam. The main result was the amended Decree No. 35/2022/ND-CP dated May 28, 2022, which regulates and creates conditions for EIP transition and establishment of new eco-industrial parks in Vietnam. Also, the EIP approach was integrated into the Strategy for the Implementation of Sustainable Production and Consumption to 2030, the National Green Growth Strategy and Action Plan for the period of 2021-2030, with a vision to 2050 and finally, the scheme for circular economy development in Vietnam.

The notable activities and results have included:

- Identification of industrial synergies and EIP improvement opportunities workshops in selected IPs (March 2022).
- Organization of the workshop “Eco-industrial Park Development in Viet Nam: Institutional Framework and Implementation” to introduce the new elements of Decree No. 35/2022/ND-CP on 15 September 2022.
- Designing of communication products, such as the project leaflets, brochures and case studies.
- The project website is regularly updated with the latest news and activities.
- Organization of workshops on industrial symbiosis for industrial parks in November 2022 at Deep C, Hiep Phuoc and Amata IPs.
- The training sessions on the new Access to Finance Tool (A2F) for Eco-Industrial Parks in Viet Nam were organized in November 2022.

- A national set of EIP indicators has been developed and recommended with the compliance and practicality of internationally and nationally developed EIP indicators.
- Reviewing the current legal status of waste and wastewater management in industrial zones in Vietnam and developing a draft guideline and recommendations for reuse of waste and wastewater for industrial zone.
- The project reports environmental savings of over 3 million kWh in 2022 and 7.2 million in 2023.
- Over 600 SME Staff and 370 park management staff trained.
- Five new EIP policies promoted and implemented at the national level in 2023.

## **5. GEIPP Implementation at Country Level – Evidence from Four Countries**

### **5.1 Introduction**

Out of the seven participating countries, four were selected for evaluation missions. Of the other three countries, the Ukraine project has been severely hampered by Russian hostilities, Indonesia was considered too complex to address in a short mission, while Egypt was slow in starting up owing to delays in government formalities. Detailed evidence on factors supporting progress and challenges experienced is therefore primarily derived from Colombia, Peru, South Africa and Vietnam.

### **5.2 Intended GEIPP Performance at Country Level**

The GEIPP approach is built on two broad components, one focussed on country level activities and the other at global level. The four country missions had a major emphasis on interventions and results at national level. However, they also discovered that global approaches and activities are considered important by national governments and agencies and even by some managers of individual parks. Among the countries visited the evaluation team noted different types of interaction between Component 1 and Component 2, according to national intentions, policies and strategies and how these are implemented and applied.

In order to produce a report of a manageable length, details of the assessments made of individual country projects are provided in the separate Annexes volume. Findings and recommendations in this main report are largely based on aggregation of primary data from the four country missions, supported by documentary evidence.

### 5.3 Responding to the Key Evaluation Questions

The Key Evaluation Questions have been presented in Section 3.2 above. Although these questions require specific responses and, in some cases, formal ratings, they can be summarised through two broad themes: how well has GEIPP performed to date and how likely is it to make a long-term contribution towards its intended impacts?

Consideration of how well GEIPP has performed to date, particularly at country level, has initially been explored through an assessment of **which aspects have been strong** and which are considered **weak**. Evaluation of progress along the intended pathways of change (as illustrated in the Theory of Change diagram presented as Figure 1) requires an understanding of the key impact drivers and of the barriers to achievement. Impact drivers provide **opportunities** for movement towards results, whilst barriers encountered present **threats** to these. To provide a consistent and comparable assessment basis across the four country projects for evaluating the two themes of performance to date and likely future achievements a simple Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis was conducted for each country project. These were then compared and amalgamated to produce an overall assessment of current and potential future performance of GEIPP at country level. The results of this process are presented in Section 5.4 below. In order to address all of the Key Evaluation Questions, this SWOT analysis is later complemented and contextualised by a Theory of Change analysis (Section 6) and an overall assessment of progress, including rating of specific criteria (Section 7). Detailed reporting at country level is provided separately in the Annexes Volume of this report.

### 5.4 Overview of factors influencing GEIPP performance in Four Countries through an assessment of strengths, weaknesses, opportunities and threats

This section provides an overview of factors contributing to achievements to date and an assessment of issues contributing towards future progress. Performance thus far is reviewed in terms of the strengths and weaknesses of measures implemented to contribute towards results. The future cannot be evaluated. However, the Theory of Change for GEIPP shows expected “impact pathways,” which should lead towards the intended ultimate long-term results. Progress along these pathways will be accelerated as the project takes advantage of opportunities and restricted if threats are not anticipated and addressed. Although the assessment presented below builds on performance across the four countries, it does not evaluate individual country projects. This would be outside of the mandate and intentions of this programme evaluation and more work would have been needed in each country to have sufficient evidence to confidently understand and evaluate performance at that level.

Country projects are primarily focussed on benefits at national level and below (Component 1). However, the evaluation missions found that they are also potentially affected by and contribute towards the expanding body of global knowledge generated, analysed and disseminated by GEIPP through its Component 2. Key findings from a SWOT analysis of Component 1 Outcomes 1 and 2 and their interactions across the four mission countries are presented in Tables 6 to 8 below. These Tables summarise specific aspects of GEIPP, which have been identified as important influences on the achievement of results through detailed analysis of data from missions to four participating countries. The extent

to which the identified strengths, weaknesses, opportunities and threats apply in any individual country is identified in its Sections of the Annexes volume.

It should be noted that neither the SWOT overview presented below, nor the related country-specific Tables in the Annexes volume can be used on their own to assess country level GEIPP performance. This performance depends on the balance between the number and magnitude of SWOT elements present in any country and on the interactions between them. This can most readily be evaluated through an examination of the extent of progress towards long term objectives and impacts supplied by the Theory of Change analysis provided in Section 6 below.

Table 6: Key Findings from SWOT Analysis of GEIPP Component 1 Outcome 1 (EIP incentivised and mainstreamed in relevant policy and regulations) across Four Countries

<b>Strengths:</b>
<ul style="list-style-type: none"> <li>• UNIDO has a high rating and reputation as a competent entity in the subject areas of the project.</li> <li>• Several countries show government commitment at central level promoting policies, regulations, strategies, etc.</li> <li>• Engagement of different tiers of government, including regional, municipal, local (and communes) in approaches and activities promoting cleaner production and broader environmental benefits.</li> <li>• Enactment or publication of different levels and types of government control over industries' interactions with the environment (Legislation, Development Plans, Required Standards, Regulations, etc.).</li> <li>• Government promotion of high performing EIPs (often referred to as "lighthouse" parks) as examples of intended standards for the country and of effective interaction with park management.</li> <li>• High performing parks attain strong visibility for international investors and major national investors.</li> </ul>
<b>Weaknesses:</b>
<ul style="list-style-type: none"> <li>• Some countries show lack of government commitment, which makes it difficult to deliver new policies, strategies, regulations, etc.</li> <li>• Political instability sometimes reduces possibility of consistent development and implementation of EIP concept.</li> <li>• Weaknesses in basic service provision at national to local level (e.g., electricity, water, waste management) reduce possibilities and resources to pursue improved environmental management of industry.</li> <li>• Lack of clarity or precision at different levels of environmental legislation and regulation make it difficult or impossible to implement intended EIP measures, both at individual EIP and national policy level.</li> <li>• Communication among key stakeholders of the concept of GEIPP as a holistic approach has often not been effective. Many of the engaged parties understand some aspects of the country project but not all. This reduces the understanding of the role that each type of stakeholder can play and affects the scope and timeliness of delivery of the project's results.</li> </ul>
<b>Opportunities:</b>

- (Further) explore and implement opportunities to link limited GEIPP funds to larger sources to strengthen existing support to pilot parks and expand to new ones.
- Support or conduct research and analysis to identify specific needs of Small, Micro and Medium enterprises with the objective of improving their access to and benefits from participation in Eco Industrial Parks.
- Support or conduct research and analysis to identify specific gender-focussed activities, which could strengthen GEIPP in this area

#### Threats:

- Promotion of increased government focus on high performing parks and companies to attract foreign investment, at expense of less affluent parks and companies.
- Stratification of IPs in national systems between elite, mid-level and low-quality parks with minimal possibility of upward mobility, in the absence of specific national or regional support programmes to enable barriers to be overcome.<sup>9</sup>
- Discouragement of governments to place industrial development in the context of poverty and inequality.
- Failure of governments to develop systematic policies and approaches towards gender in industrial development.
- Reputational damage to UNCT through lack of coherence among different agencies and programmes targeting economic, environmental and social development.
- Reputational damage to UNIDO through insufficient coordination and coherence with other UNCT programmes and activities in related areas.
- Insufficient or inconsistent collaboration among UNIDO projects or programmes in the same country.
- In some countries, changes of counterpart, due to the rotation of public service officers, have an impact on the continuity of project activities and the priority given to the project in national or local policies.

**Table 7:Key Findings from SWOT Analysis of GEIPP Component 1 Outcome 2 (EIP opportunities identified and implementation started, with environmental, economic and social benefits) across Four Countries**

#### Strengths:

- Park managers of high performing sites engage with key tenants to promote reputation of EIPs as against “traditional” parks.
- Some park managers are willing and able to invest in sustainability, from the perspectives of efficient use of resources (water, energy and waste recovery) and increasing the reputation of the park.
- EIP concepts fit well with green credentials of major investors, particularly international companies.
- Company participation in EIP approaches is voluntary, promoting more active consideration of new range of potential benefits among companies.

<sup>9</sup> Colombia's example is very interesting, because the technical standard it is developing establishes three levels of EIP, assuming that not all parks will be able to achieve the same level but allowing all parks to achieve some level of commitment to sustainability.

- Many participating companies have benefited from technical assistance, particularly related to Renewable Energy and Cleaner Production, through short term assignments provided through GEIPP.
- Some recommendations from this assistance have been implemented, others are still at feasibility stage (sometimes with GEIPP assistance) and the remainder are awaiting action.
- Whilst some recommended production improvements have been straightforward (e.g., turn down air conditioning, turn off lights for empty rooms), others require more investment (such as improving building insulation, recycling or selling on waste products) and are more likely to be medium to long term projects.
- Possibilities for more ambitious environmental management options, notably industrial symbiosis, have been raised, with some progress towards implementation in specific cases.
- UNIDO's professional teams (and consultants) are largely assessed by national stakeholders as competent and having the capacities necessary to provide the support required by enterprises in environmental and resource efficiency matters.

#### **Weaknesses:**

- Opportunities to participate in EIP innovations are more accessible to high performing companies and parks than to those less affluent. The evaluation team has noted an increasing emphasis on “lighthouse” parks, intended to provide examples of excellence. However, this emphasis appears to reduce the possibilities for lower quality parks to participate.
- Standards mandatory to qualify as an Eco Industrial Park are unattainable by many older existing parks, for example by requiring more land for “nonproduction” uses than is available.
- Country level approaches lack specific intentions or objectives with regard to social or community benefits to be included in the EIP concept and implementation.
- Country level approaches lack specific intentions or objectives with regard to gender-related benefits to be included in the EIP concept and implementation.
- Some company stakeholders reported that there is no convincing communication narrative built on indicators and relevant information to mobilise companies to invest in sustainability and take advantage of the benefits of an eco-industrial park.

#### **Opportunities:**

- Support participating IP management companies to access specialist socio-economic, gender and community participation expertise to strengthen engagement in their localities<sup>10</sup>. If no additional funds can be provided for this purpose, the EIP project offices could best contribute to this process through targeted networking with government, non-government and other UNCT members. They may also be able to negotiate with EIPs to contribute towards costs.

<sup>10</sup> Park managers in several countries informed the evaluation team that gender inclusion and community involvement are areas in which they believe they lack experience. It would therefore be appropriate for GEIPP country projects to include funding for capacity building on these themes.

- Explore collaboration with other UN country team partners to strengthen planning and implementation of support in specialist areas (e.g., “better work,” occupational health and safety, small enterprises, measurement of environmental benefits, productive approaches to gender mainstreaming).
- Assess potential for joint implementation of community-focussed activities with national or local NGOs, community-based organizations or other civil society partners to extend benefits from the EIPs to surrounding settlements, if necessary, through generation of additional funding.
- Explore opportunities to link EIP support and outcomes to broader range of community-based activities through additional funding and implementing partners. This could be done at the level of individual parks or through regional or even national partnerships.
- Promote support actions to increase opportunities for small and medium-sized companies in neighbouring localities to become service providers to the parks in matters related to sustainability.
- Communicate processes, progress and results of community partnerships to other national and international GEIPP stakeholders to generate possibilities for adaptation in other national and local contexts

#### **Threats:**

- Only highly rated parks will have sufficient management expertise to successfully implement EIP approach.<sup>11</sup>
- Main beneficiaries on any park will be richer companies, particularly those with substantial foreign investment.
- In many cases, there is hostility or negativity from communities towards IPs, often expressed in terms of vandalism or theft. Although the EIP framework aims to encourage positive community engagement, the evaluation missions did not encounter coherent and adequately resourced examples<sup>12</sup>.
- When compared with conventional IPs, EIPs will generate too few additional benefits to local communities to reduce hostility and mistrust towards them. This raises the risk of social and protest movements or stoppages that disrupt the operation of the park and businesses, which could be increased by the lack of collaboration between the park, businesses and surrounding communities.
- Many EIP supported concepts for improvement of production processes will prove too costly for most companies to implement. Although some recommended changes have required little additional cost, others have necessitated company Board approval and have encountered substantial delays or were not implemented.

<sup>11</sup> This raises the opportunity for the project to increase the capacities of parks that lack well-developed approaches for the transition to eco-industrial parks. Part of any movement towards such transition may be attributed to managerial motivation rather than starting capacities. The success of the Cauca Park in Colombia, for example, is due to its strong managerial commitment. Cauca did not do well in the park selection approach, but its dedication to sustainability led to substantial outcomes in by-product synergy and industrial symbiosis.

<sup>12</sup> In Peru and Colombia, social movements in and around some of the parks have adversely impacted their operations. For example, roadblocks on park entrance routes are the result of mobilisation by coordinated groups; as is the case with the Port of Buenaventura in Cali, which impacted Cauca due to its proximity to the park. In South Africa, social disruption, vandalism and theft have affected high- and low-quality parks.

- Requirements to qualify as an EIP will automatically exclude many or even most IPs in many countries, owing to existing high Park occupancy rates and limited opportunities for green space. This may be challenging in cases where communities have grown up close to the industrial park boundaries, with no adequate buffer zone. The International Framework for EIP has additional standards that disqualify parks that may have capabilities and fulfil the majority of the requirements but cannot meet all of them and so fall outside of the EIP classification. The 50% wastewater reuse indicator is an example of this. In some Latin American nations, reuse is illegal when the water supplier also supplies the sewage service to the park. This raises the question of whether it is preferable to utilise exclusively the International Framework to promote eco-industrial parks, or whether standards could be implemented with different degrees of eco-industrial park conformity (as in the Colombian approach).
- GEIPP approach may lead to a dichotomy between those IPs for which it is relevant and those for which it is irrelevant, contrary to national intentions to reduce poverty and inequality. Furthermore, over time improvements in tenant benefits in EIPs may make more traditional industrial parks unattractive to companies, reducing their capacity to acquire new tenants.

**Table 8: Key Findings from SWOT Analysis of GEIPP Component 2 (Global Knowledge Development) across Four Countries**

<b>Strengths:</b>
<ul style="list-style-type: none"> <li>• Consistent long-term development of EIP approach.</li> <li>• Strong network of international partnerships working on EIP.</li> <li>• Body of literature, workshop PowerPoints, training guides, standards, etc, available on websites and elsewhere contribute towards raised awareness among Governments that the EIP approach has been recognised globally as “good practice” and that it may be fundable through range of international sources.</li> <li>• Countries, park managers and EIP tenant companies want formal system of GEIPP recognition or certification, probably with tiered status levels, to promote their EIP status and credentials as commercial advantage.</li> </ul>
<b>Weaknesses:</b>
<ul style="list-style-type: none"> <li>• The major stream of global knowledge products generated and promoted by GEIPP is often seen as generic, theoretical and lacking “grounding,” reducing its value for countries. One approach to address this weakness could be to introduce a budgeted and specified inception phase in country project implementation, during which analysis could be completed of the best pathways to adapt the numerous global guidance documents and standards to the national situation.</li> <li>• The high volume of international missions, discussions and outputs is sometimes interpreted in-country as mainly benefitting UNIDO and its international partners rather than contributing to country level progress.</li> <li>• Lack of clarity and action to maximise collaboration with potential UN system partners with GEIPP-relevant mandate and expertise – e.g., with regard to labour standards, gender, environment and community level projects.</li> <li>• The term eco-industrial park is not understood in the same way by companies in all countries. It is often associated with ecological rather than productive or</li> </ul>

competitive aspects, in contrast to the term sustainable industrial park. In Latin America, the programme's communications were perceived as weak and ineffective, confounding understanding of the concept even more. As with the need to appropriately "ground" global knowledge products, this challenge could well be overcome by a carefully planned and implemented inception phase.

#### **Opportunities:**

- Increase collaboration with other UN Agencies with relevant expertise and mandate through joint programming, Memoranda of Understanding, collaboration agreements, etc, to maximise range of benefits from GEIPP and ensure coherence with related UN activities and their objectives.
- Ensure collaboration and consistency among UNIDO programmes and projects in areas related to GEIPP.
- Give further consideration to feasibility, benefits and format of potential Certification type of approach for EIP, including at different standards of attainment - to provide incentives for all levels of park and business to improve their economic, environmental and social performance. Such an approach could, for example, use a "conformity assessment system" (certification system based on national technical standards) to create incentives for parks and park companies, to broaden the active participation of stakeholders and to further engage national authorities. (Colombia's experience provides an evidence-based example of such an approach).
- Clarify and specify intentions and objectives concerning potential social and gender benefits from the application of GEIPP approaches.
- Outline and assess potential approaches to "scale up" GEIPP from its limited set of "pilot" countries, whilst continuing to assist original countries and parks.

#### **Threats:**

- GEIPP promotes exclusive forum for international expert and agency discussions and exchanges on high level issues such as international and national policies, with few results at national level and below.
- Failure to move from disconnected pilot-level activities to larger scale, which can make a notable contribution to the major challenges GEIPP seeks to help address. Over time, the credibility of the global components is likely to be reduced if it is evident that they do not promote results beyond the pilot project scale.
- Weak collaboration with UN agencies with complementary mandates and expertise. Collaboration at global and/or regional level could form a strong foundation for tailored partnerships at country level.
- Continuing absence of systematic approaches and objectives with regard to social development, gender and equity. Global guidance in these areas could be developed in collaboration with partner agencies within and outside the UN system. This could then be transferred and specified for country level interventions during a formal inception period of implementation.
- Absence of coherent, focussed and targeted approach on bringing Small, Micro and Medium enterprises into EIP approaches and implementation. Global guidance could suggest principle characteristics of companies of different scale, complexity and market sectors, which would provide opportunities to engage them with the GEIPP approach. This could then be adapted by country teams during the inception phase of country projects.

- Emerging focus on “lighthouse” parks illustrating highest standards of attainment favours costly technical improvements to park development and production methods. These are accessible only to relatively affluent IPs. Whilst promoting environmental objectives, these are also likely to contribute towards increased inequality among industrial parks.

## 6. Overview of Progress Against the GEIPP Theory of Change

The GEIPP Project Document contained an initial Theory of Change (TOC) for the Programme as a whole. However, the Mid Term Evaluation of the GEIPP found that this original Theory of Change was not sufficiently clear in terms of its anticipated results chains to be useful for evaluation purposes. In view of the shortcomings of the original TOC<sup>13</sup>, the MTE therefore proposed its own, which has been adopted for this final evaluation. Activities and results in relation to this revised TOC are analysed in this report section.

In addition to making intended results chains more explicit, the MTE revised Theory made the engagement of Small and Medium Enterprises visible, whereas the original TOC did not mention them specifically. In both versions of the TOC, social benefits appear towards the longer-term effects of GEIPP, but in neither case are outputs or outcomes specified, which might contribute towards these. Neither version of the TOC directly incorporates any gender-related activities or effects.

### 6.1 Details of Assessment

Figure 1 below provides an estimation of the progress achieved at different stages of the intended results chains towards the ultimate development objectives. For several reasons, these estimations cannot be precise, but are intended to help indicate those aspects of GEIPP which have achieved different levels of progress. The numbered boxes refer to ongoing processes and are not intended to show completed achievements. Each process is assessed according to the following criteria and marked accordingly on the TOC Figure 1:

#### Rating Criteria

-	Little or no progress
+	Low level of progress
++	Medium level of progress
+++	High level of progress

The Theory of Change analysis for the entire GEIPP should be seen as a very broad assessment, since the four country missions showed clearly that there are major

<sup>13</sup> The original TOC is attached as Annex 8 of Volume 2

differences on many dimensions between the national projects, making aggregation a challenging process. Nevertheless, the evaluation team finds that important findings emerge from this analysis, with implications for moving the programme forward.

Looking first at the intended drivers of change (top row of Figure 1), the evaluation makes the following assessment:

- **Pre-conditions** – national interest is overall at a medium level, with considerable variation among countries. Even where expressed interest is high, this may not yet be reflected in appropriate measures to realise this interest in practice.
- **GEIPP outputs** – out of ten identified outputs, three have reached a high level of progress, four a medium level and three a low level. Outputs related to SMEs show a low level of progress and stand out as needing remedial attention if they are to contribute towards overall GEIPP outcomes. This aspect is also reflected in the low score for Box 6. In addition to substantially different levels of performance between countries, this score also reflects inadequate outputs in terms of enhanced capacity for service delivery, which can be effective both for SMEs and for larger enterprises. Although there are differences in the starting point between countries, such as intended mainstreaming of earlier RECP pilot activities in Vietnam, these have not yet promoted consistent results for the SME sector.
- **GEIPP Outcomes** – Overall progress is assessed as low. The strongest progress towards outcomes is in terms of raised knowledge and enhanced awareness of EIP. The other four outcome areas are all assessed as still at a low level of progress. This reflects three key dimensions:
  - Firstly, the long duration of processes towards the ambitious development objectives of GEIPP. This is expected and, indeed, the current GEIPP is the successor of several earlier closely related interventions supported by UNIDO, SECO and a range of other partners.
  - Secondly, the difference between outputs, which are within the control of the programme and outcomes, which ultimately depend on the adoption of new approaches by targeted stakeholders (“beneficiaries”).
  - Thirdly, considerable variation in the level of take up of EIP-related outputs among participating countries.
- **Development Objectives** – Overall progress towards the ultimate objectives is still at a low level. This is predictable, since it is rare for progress towards development objectives to be more advanced than programme outcomes and these outcomes are currently at a low or medium level of achievement. Progress is hampered by the inadequacy of the programme focus on equity and inclusiveness and its vaguely defined intentions with regard to “social benefits.” Whilst economic and environmental results are expected to contribute towards broad development objectives, the focus on excellence of the emerging “lighthouse” approach does not address issues of poverty and inequality, which are at the heart of the SDGs and the overall UN development agenda. Effects of policies and interventions, which rely on a “trickle down” of benefits from high level economic performers to lower levels have been broadly found unsuccessful by international development evaluations.

Approaching the same TOC from the perspective of the “levels” targeted, further performance variations are evident. This analysis stops at the stage of “development objective,” since progress towards this reflects achievement at all levels and the extent to which different levels are mutually supportive.

- **Macro Level** - this level shows medium performance in terms of meeting pre-conditions and in quality of outputs and low performance at outcome level, reflecting challenges facing countries in mainstreaming the EIP approach into national policies and processes.
- **Meso Level** - at the level of institutions and EIP service providers, no pre-conditions were established. Performance of outputs shows some variation. Capacity mapping has been at a high level, but the expected achievement of strengthened capacity has varied considerably between countries. At outcome level, the capacity to sustain EIP approaches and achievements remains low across countries visited. This reflects both remaining capacity weaknesses at national level and the need for an appropriate and well-resourced institutional structure to continue to drive and facilitate the approach.
- **Micro Level** – pre-conditions have been met at a low level. The most interested Park Managers are those in well-resourced IPs, which see the opportunity to attain recognition, notably in international markets where “green” credentials are particularly valuable, or even essential. Parks and companies in this situation have the interest and capacity to adapt their business models to meet EIP standards. Outputs for this level are challenged by the intention to reach SMEs and enhance their eco-production performance, which has so far delivered little.
- **Global Level** – No preconditions were specified. This is assessed as by far the strongest level in the programme. Here, both outputs and outcomes have achieved at least a medium level of progress, with EIP tools at a high level. The achievement of a medium level of increased EIP knowledge and awareness at global level is notable.

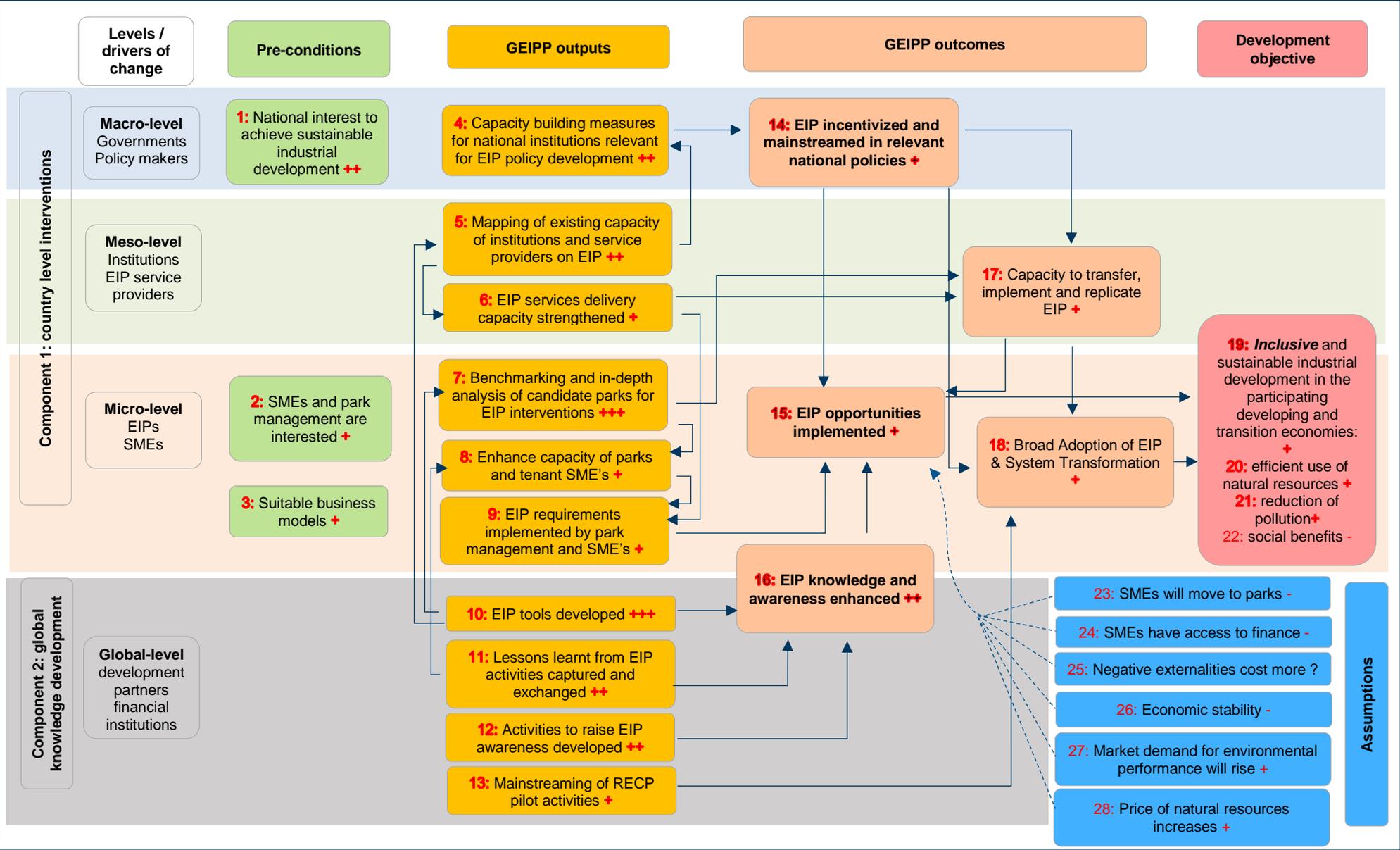
## 6.2 Implementation of EIP Opportunities

This critical outcome at micro level (for EIPs and SMEs) was assessed as at a low level of progress in the four countries observed in detail. This reflects the over-riding need for EIP initiatives to meet commercial targets of companies and IPs as well as any environmental and social objectives. One stakeholder summarised that an Industrial Park is no place for “environmental romanticism”. As noted for several dimensions of GEIPP, the achievements with regard to SMEs have faced particular challenges and are at a low level. This is reflected in the “Assumptions” box, where particular requirements of the SME sector are noted as not achieved.

## 6.3 Overview of Assessment of Progress Against the Theory of Change

Overall, progress up to output level has been medium. This incorporates some specific areas of high achievement at global, meso and micro level. For outcomes, none of the four governments assessed on the basis of missions has yet been able to effectively mainstream EIP at national level and there are varying levels of progress towards this stage. The global level has reached the highest progress for outcomes, in terms of widespread recognition and support for EIP as a concept and approach. SMEs have not been enabled to significantly progress and therefore reduce the assessment of the programme’s overall contribution towards its intended objectives.

Figure 1: Theory of Change for GEIPP



## 6.4 Realignment of GEIPP objectives

The above Theory of Change analysis is based on the ToC produced by the GEIPP Mid Term Evaluation, the report of which was accepted by UNIDO management in 2020. As shown in Figure 1 above, the original GEIPP vision aims to contribute towards “inclusive and sustainable industrial development”, in keeping with SDGs 9 and 12 and UNIDO’s Lima Declaration. However, the initial Theory of Change located in the approved GEIPP Project document did not demonstrate an emphasis on inclusion and did not specifically mention Small and Medium Enterprises as beneficiaries. This could be interpreted as signifying that SMEs and inclusion were not central to the original GEIPP proposal. However, an examination of the approved project budget shows that as much as 45% (CHF 5,650,000) of its total (CHF 12,500,000) was allocated for the following components:

- Outcome 2 Output 2.2: Enhanced capacity of IPs and tenant SMEs to meet international standards – CHF 2, 650,000.
- Outcome 2 Output 2.3: EIP requirements implemented by park management and tenant SMEs to improve their environment – CHF 3,000,000.

Considering the overall country component to identify and implement EIP opportunities (Component 1 Outcome 2), the two outputs related to SMEs account for 89% of its budget. The evaluation team has therefore based its assessment on the updated and improved ToC contained in the Mid Term Evaluation and on the original budget allocations, both of which emphasise the importance of including SMEs in the Programme.

In discussions on a draft of this final report, the emphasis on SMEs and “inclusion” in GEIPP has been challenged by some stakeholders. Such inclusion would indicate an intention to engage a broad (inclusive) range of parks and tenants as direct beneficiaries of the intervention. In support of a different vision of GEIPP, reference has been made to the document “Notes for the UNIDO-SECO meeting on 1 February 2019.”<sup>14</sup> This emphasises the importance to each country of the selection of a “model park”. “At minimum, one “model” industrial park will be selected in each country. These model parks are expected to have a high score with regards to the International EIP framework developed by UNIDO, World Bank Group (WBG) and the German Corporation for International Cooperation (GIZ) with support from SECO funded global RECP program, and a reasonable potential for improvement. As a result of interventions under GEIPP, the model park should become exemplary and inspiring for other industrial parks in the country and could be visited during study tours”.

One or more other parks will be included in country programmes and are expected to receive “intensive assistance” to raise their standards on defined criteria. The model parks and those receiving intensive assistance will together be seen as “lighthouse parks<sup>15</sup>” to provide material for training and policy making purposes. The meeting note refers to the original budgeted amounts for Output 2.2 and 2.3 but does not cover what activities might be appropriate in those areas.

In making its assessment of GEIPP performance, this evaluation therefore remains based on the original project document and its budgeted activities, interpreted within the approved MTE Theory of Change. However, it also takes note of the apparent emerging

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<sup>14</sup> Notes for the UNIDO-SECO meeting on 1 February 2019. UNIDO, 2019

<sup>15</sup> Op.cit. P6.

realignment of GEIPP to place an increasing emphasis on the “lighthouse” park concept rather than on “inclusion”, with its link to a poverty focus<sup>16</sup>.

Although this evaluation finds that the engagement of SMEs is considerably less than implied by the original programme funding proposal, it is appropriate to summarise the recorded assistance offered to SMEs, as shown in Table 9 below.

Table 9: Global Eco-Industrial Parks Programme (GEIPP I) engagement with Small and Medium-sizes Enterprises<sup>17</sup>

Country	Name of Priority Park	Number of SMEs in the park <sup>18</sup>	Percentage SMEs of all companies	Number and percentage of RECP assistance given to SMEs
Colombia	Zona Franca Cauca	32	63%	6 (43%)
	Zona Franca Occidente	43	80%	4 (71%)
	Parque Industrial Malambo	32	45%	2 (50%)
Egypt	Robbiki	188	99%	40 (100 %)
	Orascom	48	42%	18 (78%)
	Polaris	56 (+ 60 non-operating SMEs)	65%	25 (72%)
Indonesia	MM 2100	<sup>19</sup>		8 (57%)
	KIIC			4 (57%)
	Batamindo			5 (50%)
Peru	Sector 62	7	67 %	2 (100%)
	La Chutana	15	26 %	2 (100%)
	Indupark	4	35 %	1 (100%)
	Lurin	35	45%	9 (65%)
South Africa	Phuthaditjhaba		67 % (33% Micro)	9 (100%)
	ELIDZ		88 %	4 (60 %)
	Ekandustria	12	27 %	7 (100%)
Ukraine	BVAK	58	100% (23% micro)	20 (100%)
	Patriot	25	100% (30% micro)	8 (100%)
	Molfar	11	100% (30% micro)	7 (100%)
	Agromash	12	100% (50% micro)	
	Kalush	6	100% (16% micro)	
Vietnam	Deep C	61	87%	19 (63%)
	Amata	121	71%	18 (20%)
	Hiep Phuoc	130	92%	31 (93%)
	Hoa Khanh	159	85%	10 (71%)
	Tra Noc	95	77%	3 (33%)

<sup>16</sup> As one SECO reviewer of the draft report summarised: “GEIPP has no defined outcome in terms of poverty reduction”.

<sup>17</sup> Source: GEIPP management team.

<sup>18</sup> SMEs are defined in all GEIPP country regulations, apart from Indonesia, as companies with less than 250 employees, with Micro Enterprises is defined by 1-10 employees. Small enterprises 11-50 employees, and medium enterprises with 51-250 employees. In addition, most countries include turnover ceilings for the various SME categories. In Indonesia’s definition large enterprises have >100 employees. In the table above the data for Indonesia are presented with the 250 employee SME threshold that is widely adopted intentionally.

<sup>19</sup> Data not available

Whilst noting the assistance provided to SMEs, assessments received of the outcomes and progress towards impacts of this element of GEIPP were moderate. Evaluation team members were often informed by stakeholders that SME owners lacked the resources to implement suggestions recommended by RECP assistance and that their other major engagement has been through participation in isolated training activities, which have generally not enabled them to strengthen their businesses to meet EIP concepts.

## 7. Overall Assessment of GEIPP performance

### 7.1 Evaluation Criteria and the Rating System

This evaluation is required to summarise its overall assessment of GEIPP through a rating score for a variety of key aspects of the programme. The evaluation criteria draw on the DAC system,<sup>20</sup> which is widely used within the development evaluation community. Against each criterion, the UNIDO scoring system allows six levels of performance to be rated. There are also some aspects of programme performance, which require assessment but not a rating.

Whilst rating systems are valued for their capacity to provide an overview of how well an activity is being performed and where it is likely to lead, they also present substantial challenges in terms of their characteristic of producing a simplistic summary of complex processes. This reservation strongly applies to the GEIPP evaluation, since the four country missions have identified major differences among the national operating contexts, which have required projects to develop in different ways and at different paces. The same level of progress against evaluation criteria may be deemed satisfactory in one country, but unsatisfactory in another, where the national context and processes were already favourable towards the intentions of the EIP approach. A programme level score therefore attempts to take into account these differences between individual country projects and to provide an aggregate assessment of the development contribution of GEIPP.

The evaluation criteria listed in Table 10 below, derived from the DAC Criteria, will be assessed and rated according to the UNIDO system. However, the evaluation team cautions that these ratings, although evidence based, should not be considered as precise and that aggregation of ratings is somewhat impressionistic unless individual ratings are extreme. For example, it is not viable to say that a rating of “satisfactory” for relevance has the same meaning as that rating for effectiveness. In turn, producing an “overall assessment” by adding ratings on individual criteria can only give an indicative impression of progress. With these caveats, this section assesses GEIPP progress to date, which is assumed to be close to what will be achieved by programme financial completion.

<b>Table 10: Evaluation criteria</b>
<b>Progress to impact</b>
<b>Programme performance</b>
<ul style="list-style-type: none"> <li>• Relevance</li> <li>• Effectiveness</li> </ul>

<sup>20</sup> Better Criteria for Better Evaluation, Revised Evaluation Criteria Definitions and Principles for Use. OECD/DAC Network on Development Evaluation. 2019.

<b>Table 10: Evaluation criteria</b>
• Coherence
• Efficiency
• Sustainability of benefits
<b>Overall assessment</b>

The rating system is detailed in Table 11 below.

Table 11: Project rating criteria

<b>Score</b>	<b>Definition</b>	<b>Category</b>
<b>6</b>	Highly satisfactory	SATISFACTORY
<b>5</b>	Satisfactory	
<b>4</b>	Moderately satisfactory	
<b>3</b>	Moderately unsatisfactory	
<b>2</b>	Unsatisfactory	
<b>1</b>	Highly unsatisfactory	

## 7.2 Table 12: GEIPP Ratings

Evaluation Criterion	Component/Subcomponent	Assessment	Overall Rating for criterion
Relevance	<p><b>Component 1 Outcome 1: EIP incentivized and mainstreamed</b></p> <p><b>Component 1 Outcome 2: EIP implemented with confirmed results</b></p> <p><b>Component 2: Global Knowledge Development</b></p> <p><b>Overview:</b></p>	<p>Although the evaluation did not find evidence that any participating country (with the possible exception of Peru) has “mainstreamed” EIP, it is clear that all countries are moving along a pathway that could eventually lead to this. Countries show very different starting points as well as policy, strategy and legislative processes, so that there are substantial variations in progress towards this outcome. However, it is clear that this Outcome is recognized as relevant by national level stakeholders.</p> <p>Substantial sets of activities have been conducted in countries, many in pilot Industrial Parks, but others (notably training) with different levels of government officials, service providers and interested managers of other industrial parks. Assessments have been made of opportunities for improved environmental management for parks and companies, some of which have led to responsive measures. With regard to this outcome, evidence from country missions shows that the ambitions of EIP are more relevant for high quality parks, management entities and companies than for those operating at a lower level.</p> <p>GEIPP builds on earlier approaches by UNIDO (often supported by SECO) and a range of other international partners. It aims to promote a development pathway, which moves from a narrower emphasis on renewable energy and cleaner production to a more comprehensive approach. Through collaboration with numerous partners, UNIDO has contributed to a rising volume of international guidelines, learning events, documents and other communications informing approaches towards the concepts and practices around eco-industrial parks and production. The programme is therefore widely recognised and followed as relevant to this area of international development.</p> <p>Although GEIPP is internationally relevant in its field and is supported at varying levels by governments, evidence from country missions shows that its ambitions are particularly relevant for high quality parks, management entities and companies and much less so for those operating at a lower level. Small and Medium Enterprises are addressed by the programme at</p>	4

		<p>country level, but with no substantial modification of the EIP approach to meet their particular needs. This greatly reduces the relevance of the programme to these stakeholders.</p> <p>Further, although social and gender benefits appear as stated intentions of the programme, no substantive approach to either is advanced at global or national levels so that the relevance of GEIPP in these areas is marginal.</p>	
<b>Evaluation Criterion</b>	<b>Component/Subcomponent</b>	<b>Assessment</b>	<b>Overall Rating for criterion</b>
<b>Effectiveness</b>	<p><b>Component 1 Outcome 1: EIP incentivized and mainstreamed</b></p> <p><b>Component 1 Outcome 2: EIP implemented with confirmed results</b></p> <p><b>Component 2: Global Aspects</b></p>	<p>This outcome is largely dependent on the response and capacity of national stakeholders, particularly different levels of government. These are beyond the control of the programme, which must largely rely on informing, advocating and influencing. As indicated in the Theory of Change analysis of Section 6, outputs have been greatly appreciated by stakeholders, but progress in converting these to outcomes varies greatly between countries and between different institutions within countries. Effectiveness at outcome level is therefore greatly influenced by challenges imposed by various levels of government and their formal measures, including by delays in the operationalisation of policies or regulations that are intended to "incorporate" the EIP concept in national sustainable development. For example, even if national policy supports the intentions of GEIPP, legislation or local regulations may not be sufficiently clear for intended measures to be taken (e.g., with regard to wastewater quality).</p> <p>Whilst some Industrial Parks showed specific results in terms of actions towards EIP approaches, these mostly affected individual companies, usually in a limited way. Often, they followed project-managed RECP-type reviews and environmental benefits were small (although valuable to the concerned companies). Examples of actions mentioned to missions included lowering air conditioning settings and ensuring that lights are off in empty rooms. In many reported cases, more complex/costly recommended measures had either been postponed due to financial constraints or had been submitted for feasibility study. The actual confirmed results in terms of environmental, economic or social benefits therefore remain at a limited level. In those cases where the EIP model is shown to have contributed to notable changes the country team should</p>	<b>4</b>

	<p><b>Overview:</b></p>	<p>look in detail into the success factors of that particular case, in order to replicate key aspects in other parks or in other countries<sup>21</sup>.</p> <p>GEIPP has been highly active in promoting the concept and practice of EIP in the international development arena and the approach is widely and increasingly accepted. Levels of knowledge and awareness of the approach have been considerably raised. The evaluation recognizes that, in addition to the efforts of GEIPP, this effectiveness has built on consistent UNIDO efforts in predecessor programmes and activities, such as those in the area of RECP and, in cases such as Vietnam, earlier EIP “pilots”.</p> <p>Effectiveness has been most notable in terms of the production of globally accepted guidelines, manuals and other documents, many of which have already been assessed by the Mid Term Evaluation as of high standard. This acceptance has enhanced the effectiveness of the UNIDO/SECO partnership through several collaborations with other international bodies, such as GIZ, IFC and World Bank.</p> <p>In terms of movement at national level towards mainstreaming of EIP, progress has been variable and sometimes inconsistent. In some countries, government instability has prevented systematic collaboration, while in others varying capacities at different levels of government has hindered progress.</p> <p>Effectiveness of strengthening of EIP approaches of individual parks has been affected by park management capacity and vision, and often also by lack of resources to promote change at park or company level.</p> <p>Although the specific objectives of any country project are usually known by the main stakeholders, there is often a lack of knowledge of how the GEIPP intervention model as a whole is intended to work. This limits fulfilment of the role of key actors (e.g., park managers and administration) and compromises the fulfilment of key objectives.</p> <p>Evaluation missions found little evidence of systematic communication strategies or media plans, only isolated dissemination initiatives. These were found to be insufficient to build</p>	
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<sup>21</sup> A specific reported achievement is the symbiosis and synergy of by-products from the EL Cauca Park (Colombia) between several operations that generate plastic waste and a company (Virutex) that manufactures cleaning products.

		<p>convincing narratives and achieve the active participation of all necessary stakeholders. Strengthening of GEIPP governance at the local level can be an important step forward. However, without a planned communication approach, it is very difficult to establish a critical mass of actors linked to the EIP and the results of the project</p> <p>Whilst country and aggregate reporting point to many achievements, these are primarily in terms of activities delivered and outputs. This is true both at country level (legislation enacted, regulations issued) and for government entities, companies and parks where there is a strong reporting emphasis on numbers of people trained.</p> <p>Overall, the evaluation finds that GEIPP shows signs of moving towards effectiveness, but that this process still has some way to go. All four countries reviewed in detail showed some areas of progress and others where substantial challenges have been encountered. Whilst the continuation of GEIPP into another phase should help with the movement towards effectiveness, this will only be the case if challenges already identified continue to be addressed, rather than activities moving into new areas and phasing out those already started.</p>	
<b>Evaluation Criterion</b>	<b>Component/Subcomponent</b>	<b>Assessment</b>	<b>Overall Rating for criterion</b>
<b>Efficiency</b>	<p><b>Component 1 Outcome 1: EIP incentivized and mainstreamed</b></p> <p><b>Component 1 Outcome 2: EIP implemented with confirmed results</b></p>	<p>In countries assessed in detail, the common view was that the national GEIPP project team has been highly active in promoting the concept and practices of EIP. In some cases, government initiatives and policy developments appear to have been accelerated by essential technical support provided through the programme. Overall, country teams are perceived as innovative and responsive and have played a critical role in driving EIP forward, most notably through supporting various government entities. This Outcome is therefore assessed as highly satisfactory.</p> <p>This outcome has proved challenging to approach. However, country project teams have made the most of their limited resources and have provided extensive training opportunities for park managers and companies (including some not formally in the pilot project) as well as facilitating many RECP-type assessments for individual companies. Among direct stakeholders, knowledge and commitment to GEIPP has grown; although in most cases, it has not yet achieved a high level of national recognition outside this community. Overall, taking into account the relatively</p>	<b>5</b>

	<b>Component 2: Global Aspects</b>	<p>small scale of individual country projects and the limited achievement of results moving toward long-term objectives, implementation of this element is viewed as satisfactory.</p> <p>The global element of the programme has been active and produced many outputs. It is widely recognised and has attracted partnerships with international stakeholders. In some partner countries, champions of EIP, including in government institutions, follow global outputs closely to inform efforts to place their country amongst those leading international processes for more responsible industrialisation. Countries not yet included in GEIPP also follow its global activities and outputs and some have requested the opportunity to join the programme. Pilot countries, which have requested assistance from UNIDO HQ, report prompt and high-quality support from this global resource. In view of the relatively small budget for this element of GEIPP, it is assessed as highly satisfactory.</p> <p>At global and country levels, GEIPP teams have proved highly proactive and innovative in motivating and supporting development of the approach. However, limited country budgets and substantial delivery challenges have reduced results achievement, so that overall efficiency is assessed as satisfactory.</p>	
<b>Overview:</b>			
<b>Evaluation Criterion</b>	<b>Component/Subcomponent</b>	<b>Assessment</b>	<b>Overall Rating for criterion</b>
<b>Coherence</b>	<b>Component 1 Outcome 1: EIP incentivized and mainstreamed</b>	<p>Coherence is a critical aspect of GEIPP's overall performance at country and global level. In country, one major aspect of coherence concerns the relationship between programme priorities and those of the partner country. Since country projects have limited scope for achievement without strong relationships with national institutions and policies, this element of overall coherence has been largely reported and scored under "effectiveness" and "efficiency" above. To avoid "double counting" of performance on this element at country level, it therefore receives a lower "weighting" than other elements of coherence. However, the relatively strong performance in terms of collaboration with national and local institutions has been incorporated into the overall rating</p> <p>In addition to the need for coherence between GEIPP and national development objectives and approaches, UNIDO interventions are expected to conform to the ideals and principles of the UN Reform Process. Within this context, EIP's objectives in terms of environmental, economic</p>	<b>3</b>



	<p><b>Overview:</b></p>	<p>to be delivered towards the end of implementation. The published results are therefore likely to somewhat underestimate what has been achieved.</p> <p>A major over-arching challenge assessed by the evaluation team in participating countries concerns the lack of any coherent plans with regard to gender equity, poverty reduction, community relations and benefits. This relates to the underlying weakness in all of these areas in GEIPP global level documents and plans. There is no clarity in what types of benefits might be catalysed or delivered, what processes and activities would be appropriate to contribute towards these and how progress should be assessed. Documented intentions for results affecting the broad range of social and gender dimensions, which should be related to eco-industrial objectives appear disconnected from them and lacking in specificity, appropriate resourcing or the application of focussed delivery partnerships.</p> <p>The GEIPP approach has a strong focus on environmental sustainability of industrial growth in developing and transitional economies. In this respect its approaches have proved coherent with those of several international partners, as evidenced by a range of joint activities and products. However, this has not been the case with regard to poverty, gender or social objectives. This is explicitly recognised by SECO, the principle funder of GEIPP, which has indicated that “GEIPP has no defined outcome in terms of poverty reduction. GEIPP has another objective, and this has been made clear from the outset, which is to increase resource productivity and contribute to the adoption of RECP methods in existing IPs”.</p> <p>This raises challenges in terms of the criteria under which GEIPP can be evaluated, since the perspectives and priorities of SECO as donor and UNIDO as implementer appear to significantly overlap, whilst not being identical. Evidence from the country studies has raised reservations concerning GEIPP’s coherence with some of the overall UN system’s global priorities; notably in such areas as reducing poverty and social inequality, Just Transition (towards environmentally sustainable economies and societies for all), “better work” and gender equality and empowerment.</p> <p>Whilst GEIPP has global partnerships with a range of institutions (e.g., GIZ, IFC, World Bank), these do not strongly feature other UN Agencies, even though several of these appear to have overlaps in areas at the core of the programme. This weakness carries over into country level programmes, where evidence of “One UN” concepts and delivery approaches is largely absent. This challenge reflects the substantial practical obstacles to collaboration among UN agencies at country and global level reported by numerous UN agency and system-wide evaluations.</p>	
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		<p>Furthermore, the limited budgets available at country level do not encourage expenditure on processes of liaison and collaboration, still less joint programming.</p> <p>Overall, there is limited coherence between the strong technical expertise and consideration offered in terms of improved eco-industrial performance and the limited objectives and support provided in socio-economic, gender, poverty, equity and other areas. Although the latter areas and their related SDGs appear regularly in programme documents and reporting, this seems more to meet expectations and requirements than as part of coherent and implementable plans. Some compensation for the relatively weak overall coherence rating (largely based on limited participation in the UN reform programme) is offered by the much stronger inter-relationships with country projects and national governments and institutions, which have largely been included in ratings for effectiveness and efficiency.</p> <p>In addition, the substantial number of EIP guidance frameworks, benchmarks and monitoring systems have helped to provide some coherence across a complex programme operating in several very different countries.</p>	
<b>Evaluation Criterion</b>	<b>Component/Subcomponent</b>	<b>Assessment</b>	<b>Overall Rating for criterion</b>
<b>Sustainability</b>	<b>Component 1 Outcome 1: EIP incentivized and mainstreamed</b>	At national level, the path towards sustainability of processes is not so clear and varies between countries. Where governments show strong commitment to EIP, they have begun to build it into future industrialization through policy, legislative and regulatory measures. In some cases, these are supported by financial incentives. In such cases, it can be seen that sustainability is likely. Where government is not yet actively engaged with EIP, more pressure is placed on GEIPP to continue to push for sustainability. In this respect the choice of structure for continuing support to EIP delivery is likely to be important. The option of locating the project team in a strong national institution (such as a National Cleaner Production Centre) in a related field is well-suited to long-term results. On the other hand, creation of project specific teams, located outside of any relevant national, NGO, business association, academic or UN office, may bring short to medium term benefits, but will not present a clear pathway towards sustainability.	<b>4</b>
	<b>Component 1 Outcome 2: EIP implemented with confirmed results</b>	Sustainability of progress towards results at Industrial Park level remains fragile. Some high-performing parks and companies are already embedded in systems and expectations around	

	<p><b>Component 2: Global Aspects</b></p> <p><b>Overview:</b></p>	<p>“green credentials,” which have been helped by GEIPP but are not dependent on it in the long term. Usually, but not exclusively, such companies are international with customers who themselves need to meet “green” requirements and social responsibility principles. Leading Park management companies are also in this position, driven by corporate values and sometimes shareholder pressure.</p> <p>Parks and companies at lower levels of investment and performance may show ambition to improve their environmental and social results. However, the scope and quality of their existing infrastructure and production technology, together with financial pressures, restrict potential developments in line with EIP principles. In these conditions, results to date are limited and the future is highly challenging. The scale and scope of EIP support has not yet been sufficient to catalyse major improvements and sustainability does not appear likely without additional support.</p> <p>GEIPP builds upon several earlier UNIDO approaches, notably RECP. UNIDO has consistently and systematically contributed to more “environmentally friendly” industrial production. The durable partnership with SECO in this area has played a major role in raising the profile of RECP and EIP internationally and several important additional stakeholders have partnered with UNIDO or built upon its approaches. Sustainability of the global aspects of GEIPP is therefore assessed as satisfactory.</p> <p>At global level, the EIP approach builds on earlier UNIDO efforts, notably those around Renewable Energy, Resource Efficiency and Cleaner Production. SECO has provided consistent support and several important international institutions have partnered with GEIPP. It is therefore considered probable that the EIP approach will be sustained as a global development approach. In those countries where the approach has already been actively adopted by government and supported by industry, it is likely to be sustained and continuing inputs from GEIPP will continue to play an advisory and supporting role. In countries where national take-up has been less, GEIPP government capacity building and park and company-level support will continue to be essential. Sustainability of results is assessed as a relatively weak possibility.</p> <p>The agreement of SECO to continue supporting GEIPP through a new phase is a vital element promoting sustainability of approaches. However, this is likely to be particularly important for the global activities and systems and in countries that are already highly engaged with EIP approaches. For countries, parks and companies where take up has so far been relatively</p>	
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		ineffective, sustainability of the approach to a level at which intended benefits can be delivered is assessed as less likely.	
<b>Evaluation Criterion</b>	<b>Component/Subcomponent</b>	<b>Assessment</b>	<b>Overall Rating for criterion</b>
<b>Progress towards impact</b>	<p><b>Component 1 Outcome 1: EIP incentivized and mainstreamed</b></p> <p><b>Component 1 Outcome 2: EIP implemented with confirmed results</b></p> <p><b>Component 1: Global Aspects</b></p> <p><b>Overview:</b></p>	<p>Whilst some countries have made fairly considerable progress towards mainstreaming EIP, others are still barely starting. This reflects differences between country interest and capacity, availability of national partners and success of targeting and performance of EIP activities.</p> <p>As with countries, parks and companies show considerable variation in their interest and capacity to target and progress towards GEIPP development objectives. These factors are promoted or hindered by national level commitment, as well as by UNIDO performance at global and country level. Overall, specific results are still at an early stage on IPs and show variation between relatively high and low performing parks and companies.</p> <p>Taking the development objectives as the intended impact of GEIPP, the Theory of Change analysis provided in Section 6 of this report has shown that elements of progress towards impact are so far mainly at a low or medium level. However, global understanding of the issues, processes and challenges of EIP has grown significantly as a result of programme activities and products.</p> <p>In a complex programme such as GEIPP, operating across several pilot countries as well as globally, it is not possible to accurately predict when certain points or results will be achieved. However, by taking into consideration the range and severity of factors, which have so far supported or hindered programme performance it is possible for evaluators to give an indication and judgement on the extent of progress towards objectives. With regard to progress towards impact of GEIPP, the evaluation concludes that this is moderately satisfactory overall,</p>	<b>4</b>

		given the many challenges which have been encountered and the limited resources available to each country project.	

These rating assessments are summarised in Table 13 below, including provision of an overall programme rating.

**Table 13: Overall GEIPP Rating**

Relevance	Effectiveness	Coherence	Efficiency	Sustainability of benefits	Progress towards impact	Overall Rating
4	4	3	5	4	4	4

### 7.3 Additional Ratings

The DAC criteria and the associated ratings are intended to provide a comprehensive evaluation of performance. However, UNIDO evaluation guidelines and the current TOR require some additional or more specific programme criteria to be assessed and rated. In the view of the evaluation team, the assessment and ratings provided according to the DAC Criteria in Section 7.2 above already address the additional named criteria, but these are here revisited to provide the level of detail required.

The overall UNIDO Evaluation Criteria as shown in Table 14 below. The rating given to criteria already addressed in Section 7.2 are not discussed further. The additional criteria are rated and briefly discussed, based on the more detailed evidence and assessment presented in earlier sections of this report and its Annexes.

**Table 14: Programme Evaluation Ratings\***

	Criterion	Rating
<b>A</b>	<b>Progress to impact*</b>	<b>4</b>
<b>B</b>	<b>Programme design</b>	<b>4</b>
1	• Overall design	4
2	• Logframe	4
<b>C</b>	<b>Programme performance</b>	<b>4</b>
1	• Relevance*	4
2	• Effectiveness*	4
3	• Coherence*	3
4	• Efficiency*	5
5	• Sustainability of benefits*	4
<b>D</b>	<b>Cross-cutting performance criteria</b>	<b>4</b>
1	• Gender mainstreaming	3
2	• M&E:	
	✓ M&E design	4
	✓ M&E implementation	4
3	• Results-based Management (RBM)	4
<b>E</b>	<b>Performance of partners</b>	<b>4</b>
1	• UNIDO	4
2	• National counterparts	4

3	• Donor	5
<b>F</b>	<b>Overall assessment</b>	<b>4</b>

\* Ratings already provided for DAC criteria are unaltered and starred

## 7.4. Explanation of additional ratings

### Programme Design (B)

The programme design builds on a considerable history of UNIDO interventions in fields focussed on Renewable Energy and Cleaner Production and advances these approaches. In Vietnam, it was also informed by an earlier pilot EIP project. The design is therefore derived from UNIDO's considerable expertise and experience and is considered satisfactory (5) on the technical level. With regard to socio-economic benefits, including for gender mainstreaming, the design is less focussed and purposive and is assessed as **moderately unsatisfactory (3)**. The overall design is therefore assessed as **moderately satisfactory (4)**. The Logframe and monitoring system was reviewed in detail by the Mid Term Evaluation and its assessment remains valid<sup>22</sup>. "While the monitoring and reporting system is well developed, to a large extent harmonized and appreciated by stakeholders, the indicator system for the country-level interventions poses a major challenge. The total number of indicators is high and many indicators in the logical framework of the country-level interventions at the outcome and impact level have neither baselines nor targets which makes reporting difficult. The GEIPP Results-Based Management (RBM) indicators – on the other hand - are manageable (limited in number and largely measurable). The new Monitoring and Reporting Tool for country level activities has yet to prove its practicability". The Logframe is therefore regarded as **moderately satisfactory (4)**. Relating the two components produces an overall programme design rating of **moderately satisfactory (4)**.

### Cross-Cutting Performance Criteria (D)

**Gender mainstreaming** is the first of the cross-cutting criteria to be assessed. The detailed evaluative sections of this report have covered this area in some detail. Approaches towards gender are largely generic (number of women trained, etc) and do not appear to be based on expert analysis of prevalent issues in specific countries or locations. Country level discussions with a broad range of stakeholders did not suggest that this area has been a major focus within GEIPP implementation. Mitigating factors included limited country project budgets and relatively low emphasis on this factor from the donor. Gender mainstreaming is therefore assessed as **moderately unsatisfactory (3)**.

**Monitoring** design and implementation has been partly addressed under the Logframe discussion above. Country teams have made considerable efforts to report against the many indicators, including the specific RBM indicators. In view of the complex processes involved in working with different levels of government, park management and tenant companies, progress in any country is relatively unpredictable and it is not clear to what extent it can be guided by predetermined indicators. Also, country teams place great emphasis on progress in terms of actions taken by national, regional and local government bodies, often as a result of consistent dialogue and pressure from the GEIPP team. The

<sup>22</sup> Mid Term Evaluation, P ix.

perspective expressed by those at the field level is that there are many indicators measuring relatively small environmental, economic or social gains, while progress in the critical processes of influencing government is less measurable and therefore underestimated. The overall score for monitoring design is therefore **moderately satisfactory (4)** and its implementation is also **moderately satisfactory (4)**.

**Evaluation design** is guided by the UNIDO Evaluation Manual. This is understood to be under revision to take account of changes in development evaluation, notably the revised DAC evaluation criteria. Currently, the manual does not include **coherence** as an evaluation criterion, although this is included in evaluation TOR and is likely to become increasingly important in the context of the UN reform process. In its current version, the Manual is therefore assessed as moderately satisfactory (4). **Evaluation implementation** prior to the current assignment was undertaken by the Mid Term Evaluation. Although severely hampered by COVID restrictions, this managed to provide a **satisfactory (5)** overview of progress to date, particularly in terms of the quality of technical guidance documents developed by GEIPP.

Considering the performance of monitoring and evaluation of the programme, the overall satisfactory level of GEIPP progress, the highly satisfactory score for efficiency, it is assessed that overall RBM has been performed at a **moderately satisfactory level (4)**

Overall, the rating on cross-cutting performance is moderately satisfactory (4).

### Performance of Partners (E)

The efficiency of GEIPP has been assessed as **highly satisfactory (5)** and this reflects positively in terms of the performance of **UNIDO**. The selection of national executing partners has been appropriate and these have widely reported satisfaction with support received from the GEIPP global team. However, based on the overall evaluation of GEIPP, it appears that UNIDO institutional guidance and resource support with regard to programme and project participation in the UN Reform process at country level is inadequate. Whilst programme managers and implementers are well aware of this process, to which UNIDO has committed, they have found that the practicalities and costs of inter- Agency collaboration outweigh the potential benefits. Overall, UNIDO's performance is therefore rated **moderately satisfactory (4)**.

In the four countries assessed in some detail, the range of **national partners** was found to be extremely broad and variable. It is therefore not possible to assess the performance of each partner or to compare across countries, each of which has its unique history, politics, economics and culture. However, a broad overview assessment can be given of national partnerships, building on the country reviews presented in the Annexes volume of this report. GEIPP country teams have worked consistently to bring in as many national partners as possible and achievements in terms of increased government engagement and actions have been substantial, although sometimes hampered by political change or crises. Whilst there is considerable variation in the commitment and effectiveness of national counterparts, the overall assessment of this evaluation is that performance is **moderately satisfactory (4)**.

This evaluation has considerable reservation with regard to the requirement to assess donor performance, since it views this process as only viable within the mandate, priorities and objectives of the donor itself. It therefore restricts itself to rating the donor contribution towards GEIPP on the basis of its country missions and on limited discussions

with SECO personnel at HQ and country level and documents. **SECO** is a consistent and long-term partner of UNIDO, notably in the areas of RECP and later GEIPP. Its interests in these areas overlap with those of UNIDO but are not identical. For example, the processes of UN reform are of marginal interest to SECO but are in principle essential to UNIDO's approaches. Similarly, issues related to socio-economic benefits, gender mainstreaming and poverty reduction receive less attention in SECO communications than in those of UNIDO. Overall, in terms of its consistent support and collaboration with UNIDO in its specialised area of operations SECO is assessed as **satisfactory (5)**.

The overall performance of partners is therefore assessed as **moderately satisfactory (4)**.

## Overall Assessment

As noted earlier, this evaluation considers that the additional assessment criteria provide some nuance to the overall performance rating, but do not change this, since the evidence has been presented in detail in both the main report and its Annexes. The overall assessment of GEIPP is therefore **moderately satisfactory (4)**.

## 7.5 Additional Unrated Topics

With regard to the **need to follow up**, no specific issues have been raised. However, with regard to **unintended negative impacts**, findings and recommendations have pointed to the need for greater attention to social equity issues.

**Co-financing** has not been a major feature of GEIPP and is mainly provided in terms of inputs of government resources and personnel. No countries reported lack of such support, although in some examples political instability or change interrupted this collaboration. Overall, this has not been a major challenge.

Available documents suggest that individual country projects did not trigger **environmental or social safeguards**. In fact, some national interventions were described as themselves safeguarding the environment. Where the evaluation has noted potential **social disbenefits** from national projects, these have been mostly caused by relative exclusion from benefits of less prosperous parks, for which safeguards would not have been appropriate. However, in South Africa and Colombia EIPs have triggered negative social responses among surrounding communities, which might reasonably have activated safeguard assessment and associated actions. Recommendations are made to address this issue.

## 8. Recommendations

### 8.1 Recommendations for UNIDO Management

**Recommendation 1:** UNIDO high level management should assess the probable effects of the Organization’s key approaches to industrial development on income distribution and poverty. It should then consider how its interventions contribute towards the UN system’s commitment to poverty reduction, equity and the promotion of Just Transition towards environmentally sustainable economies and societies for all. On this basis management should circulate advice to programme managers on how best to balance support to advances in industrial innovation with considerations of poverty and equity.

**Finding 1:** “UNIDO is a specialized agency of the United Nations with a unique mandate to promote, dynamize and accelerate industrial development<sup>23</sup>. Our mandate is reflected in Sustainable Development Goal (SDG) 9: “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”, but UNIDO’s activities contribute to all the SDGs. UNIDO’s vision is a world without poverty and hunger, where industry drives low-emission economies, improves living standards, and preserves the liveable environment for present and future generations, leaving no one behind”. Its summary development approach is “Progress by Innovation”.

This comprehensive mandate, whilst visionary, does not address the possible “trade-offs” between its various aspects. With regard to GEIPP to date, the evaluation finds that the Programme appears on track to contribute towards benefits for well-resourced Industrial Parks and companies, but less so with regard to progress towards results for weakly resourced entities. This appears likely to contribute towards greater inequality between “lighthouse” parks and less well-resourced parks (with many Small and Medium Enterprises), which may promote environmental improvements at the highest level, but weaken the process of Just Transition advocated by the UN system.

UNIDO management should formally advise programmes such as GEIPP on how best to support environmentally friendly industrial innovation, without leaving SMEs and other low profile industrial locations behind.

**Recommendation 2:** UNIDO should continuously assess possibilities of cooperation with other UN agencies to help strengthen its approaches and contribution in such areas as equity, poverty reduction and gender mainstreaming and form appropriate agreements at global and/or country level, drawing on its established inter-agency agreement procedures. Consideration could be given to the creation of an internal funding source, which could reduce the cost to individual projects of negotiating inter-Agency MOUs or other forms of agreement.

**Finding 2:** As reported on its website<sup>24</sup>, “UNIDO remains committed to strengthening the **United Nations** development system and continues to support the reform for a more cohesive collaboration among development partners. The Organization contributes as a

<sup>23</sup> UNIDO.org. Our Vision, Our Mandate, Our Work.

<sup>24</sup> UNIDO.org.

member of the United Nations Sustainable Development Group and other inter-agency coordination mechanisms. At the country level, UNIDO supports the analytical functions of United Nations country teams and resident coordinator offices.

UNIDO works in partnership with many **sister organizations in the UN system**, for example, with the Food and Agriculture Organization (FAO) on agribusiness development, and with the United Nations Environment Programme (UNEP) in the Partnership for Action on Green Economy (PAGE)".

The evaluation has found that GEIPP has been more proactive in developing partnerships with external institutions than with other UN agencies operating in related or overlapping fields. Although this approach has generated additional funding and support from such partners as GIZ and GEF, it has provided limited coherence for its programmes within the UN system by failing to systematically capitalise on relevant strengths of such agencies as UN Women, ILO, UNDP and UNEP. GEIPP managers have reported that the limited budget available per country makes it challenging to divert resources away from environmental benefits to other areas. Furthermore, "while cooperation with other UN agencies can be sought through a stronger involvement of the country offices and project teams in interagency cooperation meetings, in practice cooperation with another UN agency means that by means of an interagency agreement part of the project budget is handed over to another agency so that it carries out activities, which are in the realm of its comparative advantages<sup>25</sup>". Experience at country level shows that collaboration modes such as MOUs tend to be time consuming but bring limited tangible benefits to a project.

It appears that limited country level budgets have reduced the possibility for GEIPP to clearly define and promote socio-economic and gender benefits, and that this has constrained attempts to seek partnerships within the UNCT to strengthen such approaches.

**Recommendation 3:** UNIDO programme development processes should be encouraged to ensure that coherence and complementarity is systematically achieved among the organization's own approaches and activities. This should address all levels, from global to country.

**Finding 3:** Although UNIDO operates a range of programmes in closely related or overlapping thematic areas, sometimes within the same "pilot" countries, these programmes do not appear to be explicitly designed to generate symbiotic development gains through collaboration and coherence. For example, the Global Quality and Standards Programme<sup>26</sup> addresses such issues as industrial infrastructure quality and standards compliance in six of the seven GEIPP pilot countries but does not refer to GEIPP in its core documents, still less attempt to develop complementary approaches. Similarly, GEIPP documents reviewed did not reference GQSP. It is reported that the industrial sectors supported by GQSP (also funded by SECO) were not present in GEIPP lighthouse parks and that there was therefore no flexibility to link the two programmes.

UNIDO operates in a specialized field and needs to capitalize on this by ensuring that its own programmes collaborate and complement one another to make the best possible contribution to development results. In some cases, this could be facilitated by its concentration on a limited range of countries, often those which are targeted by SECO.

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<sup>25</sup> Source: Project manager, comment on draft report.

<sup>26</sup> Improving trade, changing lives. The impact of the Global Quality and Standards Programme (GQSP). UNIDO 2023.

**Recommendation 4:** UNIDO policy makers should continue to reinforce the current efforts to identify the organization’s most effective role within UN system reform. This process should emphasize close collaboration with those UN bodies that prove its most complementary partners, from global to country level, to help address different aspects of its mandate.

**Finding 4:** Although UNIDO’s web site and documents refer to the importance of the SDGs and of a system-wide UN approach to contribute towards meeting these, the interventions assessed in this evaluation do not demonstrate a concerted UNIDO effort to design and implement programmes through a system-wide or “One UN” approach<sup>27</sup>.

If UNIDO wishes to fulfil its stated role as an important player in UN system-wide approaches, it will need to place more emphasis on this aspect in its policies, programmes and evaluations.

## 8.2 Recommendations for GEIPP

**Recommendation 5:** Moving into its next phase, GEIPP should conduct a systematic review of its intended socio-economic benefits in participating countries and assess which measures have promoted tangible results. Areas to be addressed should include reducing poverty and social inequality, Just Transition and gender equality and empowerment. This review could be conducted through a formal study or through a series of virtual workshops, managed by the global team. In response to the findings of this review, GEIPP should either seek additional funding and support necessary to expand its socio-economic activities or refine its focus to a more tightly defined area where available resources could have maximum effect.

**Finding 5:** Given its emphasis on technological aspects of sustainable industrial development, GEIPP appears weak with regard to the UN system’s global priorities in such areas as reducing poverty and social inequality, Just Transition and gender equality and empowerment. Unless increased funding is made available, GEIPP’s contribution towards results is unlikely to effectively address these issues.

Socio-economic aspects are central to overall UN system objectives and approaches and are clearly specified in the Sustainable Development Goals. Although *GEIPP programme and country project documents make passing reference to these aspects they exhibit show no specific and coherent objectives to target them or plans to help achieve results in these areas.* This lesson cautions against trying to address too many challenges with limited resources.

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<sup>27</sup> Although some programmes have collaborated with, for example, FAO and UNEP, there is a need to ensure that this becomes the “norm” across UNIDO’s work.

**Recommendation 6:** GEIPP should develop a support programme to enable its very numerous global documents and guidelines to be adapted for use in country-level projects and to obtain regular feedback to maximise their contribution towards results. This programme might include virtual workshops, case studies of successes and challenges in implementing guidelines in specific countries, on-line FAQs for major documents and/or a help desk.

**Finding 6:** The global component has produced many documents (often in collaboration with international partners) intended to guide GEIPP implementation. The Mid Term Evaluation assessed the overall quality of these documents as high. However, country level stakeholders reported that their content often appears theoretical and is not well designed for field level use. This suggests opportunities to strengthen the linkages between “theory and practice” through improved communication and feedback mechanisms.

Country project implementers need support to benefit from GEIPP guideline and advisory documents, as well as a systematic feedback system of their field level experience to make the documents more practically useful over time. This will require global approaches and documents to be sufficiently flexible to respond to country-specific cultural, social and political characteristics.

**Recommendation 7:** The GEIPP approach should be enhanced to promote a more equitable distribution of potential benefits, specifically through development and implementation of targeted approaches to reach more Small and Medium Enterprises (e.g., through strongly incorporating them into local supply chains for EIPs) as well as older and less sophisticated parks. In addition to supporting and recognising high level “lighthouse” parks, GEIPP should promote and recognise less modern or sophisticated parks, which make tangible progress towards improved production and management approaches. This might be activated through the creation of a specific funding envelope for SMEs, within the existing country project or as an “add-on” with additional funding.

**Finding 7:** Although GEIPP documents and activities make mention of Small and Medium Size Enterprises, the evaluation found no evidence of systematic approaches or specialized financing to address their particular challenges with moving towards eco-industrial production.

GEIPP has been most effective in-country through its collaboration and support to enable governments to increasingly focus on EIP approaches. Parks and companies operating at high standards with strong resources have been most able to adopt new practices. Older, crowded IPs with many SMEs have not yet been major beneficiaries of the GEIPP approach and the evaluation found that country projects have largely struggled to bring them into the projects at any scale.

**Recommendation 8:** With the support of the global team, GEIPP country teams should identify the strongest institutional approach to develop EIP continuity in the medium to long term. Helping to establish and operationalize project governance support institutions (e.g., collegiate bodies, Communities of Practice) in each country would strengthen continuity and legitimise future interventions required by GEIPP. During the SECO-supported GEIPP Phase 2, specific measures and capacity development activities should be completed to enable EIP to proceed with reduced or no further UNIDO inputs beyond this phase.

**Finding 8:** The institutional structure of GEIPP varies between countries. Although this appears to relate to the initial availability of suitable executing partners in each country, the long-term responsibility for implementation of EIP approaches often remains unclear, even though the original programme is near completion and the second phase may well be the last.

The next phase of GEIPP at country level needs to pay early attention to assessing potential institutions to carry the work forward in the long term and to identifying the best options, including appropriate capacity building support.

### 8.3. Recommendations for SECO/UNIDO Collaboration

**Recommendation 9:** This evaluation supports the decision to continue GEIPP into a second phase with SECO support and provides suggestions to improve its performance. Some of its recommendations would be more effective with additional resources.

**Finding 9:** This evaluation rates GEIPP performance against four of the six DAC Criteria as moderately satisfactory, whilst efficiency (which is directly under GEIPP's control) is considered satisfactory. Coherence has so far been moderately unsatisfactory. The overall programme rating is moderately satisfactory.

GEIPP needs to focus particular future attention on medium to long term sustainability of the approach and on weaknesses, threats and opportunities for impact.

**Recommendation 10:** In collaboration with SECO, GEIPP Global and national teams should consider how the approach can be broadened to formally include such entities as Industrial Zones and Greenfield sites.

**Finding 10:** In the absence of sufficient suitable Industrial Park partners, some projects have already incorporated interested Industrial Zones<sup>28</sup>. Furthermore, field missions noted that several of the more successfully engaged EIPs have substantial empty land, which can be developed in a more ecological and sustainable manner. Parks lacking this resource face greater difficulties in upgrading their performance according to EIP criteria. Although formally identified as brownfield sites (and therefore eligible to participate in GEIPP), these

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<sup>28</sup> It appears that in some languages the categories of Industrial Park and Industrial Zone are covered by the same term.

engaged parks also exhibit some of the favourable characteristics of green field sites, in terms of possibilities to plan future phases of Park layouts and facilities with an ecological emphasis.

The formal inclusion of only brownfield sites in GEIPP has limited participation in several countries and a more inclusive approach, which can be implemented across a broader range of countries and circumstances, should be explored.

**Recommendation 11:** Recommendations 5, 6 and 7 above propose measures, which would require additional funding, to strengthen aspects of GEIPP. This evaluation recommends that SECO should consider whether it might be able to provide support in any of these areas.

**Finding 11:** This evaluation has identified possibilities and made recommendations to strengthen specific aspects of GEIPP and enable higher country level performance. However, currently no funding sources have been identified. The areas promoted are consistent with SECO’s growth-focussed mandate<sup>29</sup>, which “ensures that all segments of the population benefit from such growth, and that it does not compromise the well-being of future generations. This reduces poverty and fragility”.

Potential strengthening of the programme at country level is currently limited by the tight budgets available, particularly at country level.

## 8.4 Recommendations and Management Response

#	Recommendation	Management Actions	Responsible Person	Target Date
1.	UNIDO high level management should assess the probable effects of the Organization’s key approaches to industrial development on income distribution and poverty. It should then consider how its interventions contribute towards the UN system’s commitment to poverty reduction, equity and the promotion of Just Transition towards environmentally sustainable economies and societies for all. On this basis management should circulate advice to programme managers on how best to balance support to advances in industrial innovation with considerations of poverty and equity.	IEU is bringing this recommendation to the attention of the managing directors of IET, GLO and TCS for their information and consideration.	Chief, EIO/IEU	29/02/2024
2.	UNIDO should continuously assess possibilities of cooperation with other UN agencies to help strengthen	IEU is bringing this recommendation to the attention of the managing	Chief, EIO/IEU	29/02/2024

<sup>29</sup> Source: web site “SECO cooperation”.

	its approaches and contribution in such areas as equity, poverty reduction and gender mainstreaming and form appropriate agreements at global and/or country level, drawing on its established inter-agency agreement procedures. Consideration could be given to the creation of an internal funding source, which could reduce the cost to individual projects of negotiating inter-Agency MOUs or other forms of agreement.	directors of IET, GLO and TCS for their information and consideration.		
3.	UNIDO programme development processes should be encouraged to ensure that coherence and complementarity is systematically achieved among the organization's own approaches and activities. This should address all levels, from global to country.	IEU is bringing this recommendation to the attention of the Secretary of the Operations Committee for the OC's information and consideration.	Chief, EIO/IEU	29/02/2024
4.	UNIDO policy makers should continue to reinforce the current efforts to identify the organization's most effective role within UN system reform. This process should emphasize close collaboration with those UN bodies that prove its most complementary partners, from global to country level, to help address different aspects of its mandate.	IEU is bringing this recommendation to the attention of the managing directors of IET, GLO and TCS for their information and consideration.	Chief, EIO/IEU	29/02/2024
5.	Moving into its next phase, GEIPP should conduct a systematic review of its intended socio-economic benefits in participating countries and assess which measures have promoted tangible results. Areas to be addressed should include reducing poverty and social inequality, Just Transition and gender equality and empowerment. This review could be conducted through a formal study or through a series of virtual workshops, managed by the global team. In response to the findings of this review, GEIPP should either seek additional funding and support necessary to expand its socio-economic activities or refine its focus to a more tightly defined area where available resources could have maximum effect.	The primary objective and raison d'être for the GEIPP is to promote Resource Efficient and Cleaner Production. Areas like reducing poverty and social inequality, just transition and gender equality and empowerment are addressed as integral elements of the International Framework for EIPs and as per the UNIDO gender mainstreaming policy. In consultation with the donor it has been agreed to maintain the primary objective and not to invest scarce project funds and human resources into the conduct of a formal study or a series of workshops to expand its socio-economic activities or to refine its focus. Efforts to mobilize additional funds will be focussed on up-scaling EIP activities as defined in the	Project manager	28/02/2025

		Programme Document for GEIPP II.		
6.	GEIPP should develop a support programme to enable its very numerous global documents and guidelines to be adapted for use in country-level projects and to obtain regular feedback to maximise their contribution towards results. This programme might include virtual workshops, case studies of successes and challenges in implementing guidelines in specific countries, on-line FAQs for major documents and/or a help desk.	The GEIPP Knowledge Management Component will survey the GEIPP priority countries on the impediments for fully utilizing the EIP guidance developed. A specific support program would require a separate budget allocation, which feasibility will be evaluated. However many impediments in guidance uptake may be overcome with specific virtual workshops, translation of documents, and development of hands-on guidance for the EIP Tools to be delivered by the GEIPP Knowledge Management Component.	Project manager	28/02/2025
7.	The GEIPP approach should be enhanced to promote a more equitable distribution of potential benefits, specifically through development and implementation of targeted approaches to reach more Small and Medium Enterprises (e.g., through strongly incorporating them into local supply chains for EIPs) as well as older and less sophisticated parks. In addition to supporting and recognising high level "lighthouse" parks, GEIPP should promote and recognise less modern or sophisticated parks, which make tangible progress towards improved production and management approaches. This might be activated through the creation of a specific funding envelope for SMEs, within the existing country project or as an "add-on" with additional funding.	The GEIPP is focussing on the industries residing in the selected industrial parks regardless of their scope. Under GEIPP I at least 2/3% of the firms supported are SMEs. Since the GEIPP follows a demand driven approach it has been agreed in consultation with the donor that the present approach will be maintained. Given the the GEIPP is expected to demonstrate the viability of the EIP approach, to deliver environmental benefits and to create traction for non target parks to follow the EIP-transition it has been agreed in consultation with the donor to maintain the focus on light house parks. In parallel efforts will be undertaken to mobilize complimentary funds for specific SME targeted activities.	Project manager	28/02/2025
8.	With the support of the global team, GEIPP country teams should identify the strongest institutional approach to develop EIP continuity in the medium to long term. Helping to establish and operationalize project governance support institutions (e.g., collegiate bodies, Communities of Practice) in each country would strengthen continuity and legitimise future interventions required by GEIPP. During the SECO-supported	This is work in progress. At the GEIPP I closing event best institutional practice was demonstrated to stakeholders from all Programme countries. While there is no uniform solution that fits all countries, UNIDO will maintain its efforts to further strengthen the EIP supportive administrative structures in each Programme country with a clear	Project manager	28/02/2025

	GEIPP Phase 2, specific measures and capacity development activities should be completed to enable EIP to proceed with reduced or no further UNIDO inputs beyond this phase.	perspective to enable them to continue facilitation the transition to EIPs after the completion of the GEIPP phase II		
9.	This evaluation supports the decision to continue GEIPP into a second phase with SECO support and provides suggestions to improve its performance. Some of its recommendations would be more effective with additional resources.	IEU is bringing this recommendation to the attention of the Chief, GLO/FPR for his information and consideration.	Chief, GLO/FPR	29/02/2024
10.	In collaboration with SECO, GEIPP Global and national teams should consider how the approach can be broadened to formally include such entities as Industrial Zones and Greenfield sites.	Where Industrial Zones have an institution that can be compared to a management entity GEIPP I is already including such Industrial Zones (e.g. in Peru). In consultation with the donor it has been decided to maintain the focus of the TA to be provided under the GEIPP on brown field parks. In countries where the government has expressed the request to also include green field parks under the GEIPP II, general awareness creation and capacity building will also be offered to interested green field parks.	Project Manager	28/02/2025
11.	Recommendations 5,6 and 7 above propose measures, which would require additional funding, to strengthen aspects of GEIPP. This evaluation recommends that SECO should consider whether it might be able to provide support in any of these areas.	IEU is bringing this recommendation to the attention of the SECO-GEIPP focal point for his information and consideration.	Chief, EIO/IEU	19/01/2024

# Annex 1. Terms of Reference



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

## **TERMS OF REFERENCE**

### **Independent evaluation**

### **Global Eco-Industrial Parks Programme (GEIPP)**

UNIDO Project No: 170222

**DECEMBER 2022**

## I. Programme background and overview

### 1. Programme factsheet

<b>Programme Title</b>	Global Eco-Industrial Parks Programme (GEIPP) in Developing and Transition Countries
<b>Countries covered in this programme</b>	<b>Country-based interventions:</b> Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine, Viet Nam
<b>Start date (as per original letter of agreement)</b>	1.12.2018
<b>Completion date (as per original letter of agreement)</b>	31.12.2023 (5 years)
<b>Expected completion date</b>	31.12.2023
<b>Donor</b>	Swiss Confederation through the State Secretariat of Economic Affairs (SECO)
<b>Total budget</b>	CHF 17,184,395 (incl. 13% support costs) EUR 15,533,214 (as per UN exchange rate of March 2021: 1Euro =1.1063 CHF)

(Source: Programme document)<sup>30</sup>

### 2. Programme context

#### Background

In 1994, a joint UNIDO-UNEP National Cleaner Production Centres Programme (NCP-Programme) was launched with the objective of increasing the competitiveness and productive capacity of industry, specifically Small and Medium-sized Enterprises (SMEs), through the implementation of Cleaner Production (CP) and the application, adaptation and diffusion of Environmentally Sound Technologies (ESTs).

Through over 20 years of operation, with substantial funding by SECO, the Resource Efficiency and Cleaner Production (RECP) Programme made outstanding contributions towards the identification, development and testing of tools and methods for RECP to the diverse conditions in developing and emerging economies. The Global RECP Programme significantly pushed these processes along by further systematising and adapting RECP-related methods and toolkits to country conditions and by developing case studies and other knowledge products that are well suited to small and medium industries in developing countries. The RECP-programme developed these tools through a process that simultaneously built RECP service capacities in developing countries. By the time the

<sup>30</sup> Project information data throughout these TOR are to be verified during the inception phase.

programme was evaluated in 2017, it had helped strengthen at least fifty-eight (58) National Cleaner Production Centres in fifty-five (55) countries. While capacities differ from centre to centre, there is a good track record with regards to their sustainability. Of 37 centres that were created between 1994 and 2011, only four (4) of these centres were no longer operational in 2017.

Despite progress, the challenge remains, as the tons and kilotons of resources saved and emissions avoided at enterprise level, still do not match the need to avoid the resources and emissions in terms of mega- and Giga-tons.

The Terminal Evaluation of the 2012-2017 RECP Programme was explicitly positive about the Work Programme on EIPs - because it explicitly and properly targeted and addressed country policy and regulatory frameworks, e.g., necessary conditions identified in the theory of change that would lead to the transformation to sustainable industrial production.

The Global Eco-Industrial Parks Programme (GEIPP) addresses one of the key recommendations in the RECP Terminal Evaluation: to scale up RECP to the level of eco-industrial parks seeking to integrate support at the enterprise and park scales and address critical policy issues.

Results and lessons learnt from previous and ongoing EIP interventions are very promising and different funding institutions have shown great interest in EIP advancement <sup>(31)</sup>.

There have been a number of complementary tools and processes to assist governments and industrial park stakeholders to progress in the implementation of inclusive and sustainable industrial development. As a result of joint work by the World Bank Group, GIZ and UNIDO an International Framework for EIPs was developed in 2017 with a recent revision published in 2021. The framework offers 'standards' or benchmarks for ensuring that envisioned industrial developments are sustainable and meet the spirit of an EIP. Such standards provide benchmarks for assessing existing industrial parks, planning retrofitting measures for existing parks, or better planning new industrial parks with the end goal of driving inclusive and sustainable industrialization.

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<sup>(31)</sup> GEF funding in Peru, Thailand and Vietnam and collaboration with WBG/IFC and GIZ.

Figure 1: Key components of EIP



### GEIPP Overview

The GEIPP Program was a direct follow-up of the Global Resource Efficient and Cleaner Production Program, which piloted industrial park level activities and transformation towards Eco-Industrial Park Practices as a path for scaling-up industrial resource efficiency in rapidly industrialising developing countries. The Eco-Industrial Park approach was deemed to be particularly well fitting sustainable industrial development as it addresses social and environmental goals in addition to the economic development and job creation. GEIPP program consists of two complimentary components: Country Level Interventions and Global Knowledge Development. The programme has been implemented in seven countries: Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine and Viet Nam.

The GEIPP's objective is to demonstrate the viability and benefits of Eco-Industrial Park approaches in scaling up resource productivity and improving economic, environmental and social performances of businesses and thereby contribute to inclusive and sustainable industrial development in the participating developing and transition economies.

GEIPP is structured into 2 main components:

- Component 1: Country Level Interventions
- Component 2: Global Knowledge Development

GEIPP aims to deliver the expected results via three outcomes and the respective outputs under the two components as underlined in the logical framework:

**Component 1: Country level interventions** has two outcomes:

Outcome 1: EIP incentivised and mainstreamed in relevant policy and regulations leading to an increased role of EIP in environmental, industry and other relevant policies at the national levels in the participating countries.

Outcome 2: EIP opportunities identified and implementation started, with environmental (e.g., resource productivity), economic and social benefits achieved by enterprises confirmed. The implementation of EIP opportunities by enterprises and other organisations will be supported by the EIP services providers and will lead to reduction of the environmental footprint and operational and compliance costs of businesses, and an increase in their - natural - resource productivity.

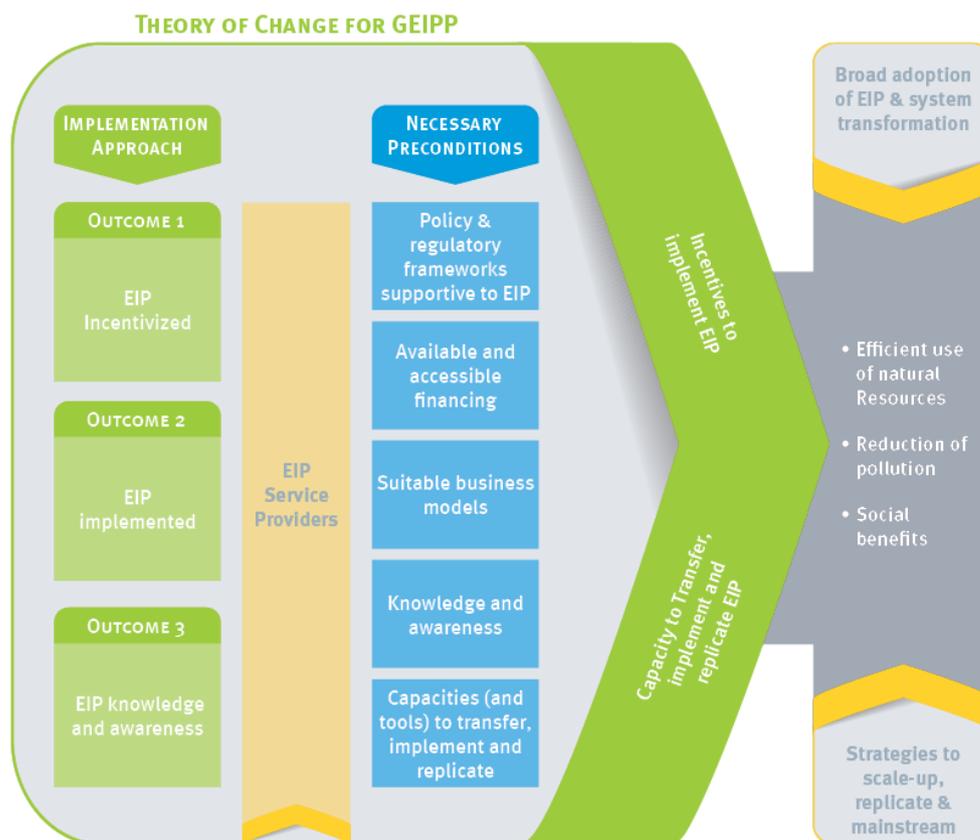
GEIPP will focus on the brownfield operations only, in order to secure realistic and tangible results within GEIPP boundary (timing, financial and organisational) conditions.

Seven countries have been selected for country level interventions under the component 1, based on SECO priority countries and UNIDO country assessments (Colombia, Egypt (July 2019), Indonesia (July 2020), Peru, South Africa (December 2020), Ukraine and Vietnam). All country programmes are expected to address the two outcomes of the programme and are structured accordingly.

## **Component 2: Global Knowledge Development**

Component 2 serves as a transversal component in the GEIPP for global knowledge development. The objective of this component is to generate and disseminate knowledge from present and past endeavours, which can be used to tackle the required preconditions for EIP. It aims to generate and disseminate/transfer knowledge to the various country projects and special country measures within the country level interventions (component 1), to the stakeholders and UNIDO, and to the interested public in general through global dissemination. Component 2 has one outcome:

Outcome 3: EIP tools developed, services delivery capacity enhanced and lessons learnt properly capturing and effectively exchanged. EIP tools developed and made applicable beyond the context of the individual parks or countries (via description how to apply tools locally).



## Mid-term evaluation

In 2021 an independent mid-term evaluation (MTE) of the GEIPP was conducted<sup>32</sup>. The main purpose of the MTE was to assess the GEIPP's programmatic approach, and particularly to:

- 1) Assess the programme's performance and progress towards the achievement of the expected results.
- 2) Assess remaining barriers and risks in programme design, programme management and performance of partners.

The MTE concluded that the GEIPP is seen as highly relevant by stakeholders. The parallel multi-level approach at the micro, meso, macro and global level is regarded positive and successful.

The Global Knowledge Development was assessed to do, by and large, the right thing. The Component is considered as the means of comparing with international EIP developments and to source best international practice. The tools developed through the Global Knowledge Development Component are rated highly by stakeholders.

<sup>32</sup> Zollinger U., Fresner J., Cuda F. (2021). Independent Mid-term Evaluation of Global Eco-Industrial Parks Programme (GEIPP). UNIDO Independent Evaluation Division.

The MTE concluded that the main remaining challenges for a broad implementation of EIPs are: (a) the financing of new infrastructure and cleaner technologies, (b) the long time required to change regulatory frameworks and compliance once they are in place, (c) the relatively short duration of the programme in order to show results, and (d) changes in government counterparts.

Among the key recommendations of the MTE the following are highlighted:

1. The technical assessment of and assistance to SMEs should be accelerated. In general, involve more business representatives in the GEIPP at all levels.
2. The GEIPP should explore options to improve the availability and accessibility of financial instruments for industrial parks and SMEs to finance EIP/RECP measures.
3. Measures should be considered how to achieve broader adoption in spite of perhaps unfavorable regulatory frameworks at the national level.
4. The GEIPP should consider adding three activities suggested by stakeholders in the seven GEIPP countries: these are some sort of recognition scheme against EIP criteria, include more parks and include more “multipliers”, like for example business associations or learning institutions.
5. The GEIPP should be continued with a second programme phase, as the current five-year duration is too short for broader adoption of the EIP concept.

Overall, GEIPP was deemed to be a working and scalable approach for the introduction of EIP in the program countries. The transformation of industrial parks towards EIPs is supporting the countries’ efforts to adopt a resource efficient development path and to fulfil their climate change mitigation pledges.

## GEIPP budget

When the programme was approved in late 2018, the total indicative budget was CHF 12,500,000. By the time of the MTE in April 2021, the budget was CHF 17,184,395, equivalent to around Euro 15,533,000.

Table 1: Programme Budget: Indicative programme budget (cumulative for 5 years) in CHF

Budget items	Original budget (CHF)	Revised budget (CHF)	Expenditure
Component 1 – Country level interventions *	8,000,000	11,845,482	2,263,008
Component 2 - Global Knowledge Development	1,250,000	1,550,000	531,474
Programme Management & Monitoring	1,662,000	1,661,947	482,139
Programme Evaluation	149,947	150,000	0
<b>Sub-Total</b>	<b>11,061,947</b>	<b>15,207,429</b>	<b>3,276,621</b>
Programme Support Costs (13%)	1,438,052	1,976,966	425,961
<b>Total</b>	<b>12,500,000</b>	<b>17,184,395</b>	<b>3,702,582</b>

\*) For each of the four countries (Colombia, Peru, Ukraine and Vietnam) the budgetary allocation for country level interventions is CHF 2,000,000

Source: Programme document and 2020 Programme Progress Report.

By December 2022 the GEIPP expenditure and delivery against the total initial allocations stood at the following:

Table 2: Country level intervention budget and expenditure, by country (in CHF)

<b>Component / Outcome</b>	<b>Expenditures 30.6. 2022</b>	<b>Delivery %</b>
<b>Component 1: Country-Level Interventions</b>		
Colombia	1,311,777	79
Egypt	176,208	13
Indonesia	746,447	55
Peru	1,098,075	63
South Africa	612,205	75
Ukraine	976,383	55
Vietnam	817,520	55
<b>Subtotal Component 1</b>	<b>5,738,615</b>	
<b>Component 2: Global Knowledge Management</b>		
<b>Subtotal Component 2</b>	<b>1,537,815</b>	55
<b>Subtotal</b>	<b>7,276,430</b>	
Support Costs	945,936	
<b>Total</b>	<b>8,222,366</b>	

## II. Purpose and scope of the evaluation

The purpose of the evaluation is to independently assess the GEIPP Programme to help UNIDO improve performance and results of future programmes and projects. Although the programme will not come to an end till December 2023, this evaluation will be conducted one year before the planned completion date so that its findings and recommendations will be fed into the design and implementation of the next phase of GEIPP Country-Level Initiatives envisaged to start in 2024.

The evaluation has three specific objectives:

- (i) Assess the programme performance in terms of relevance, effectiveness, efficiency, coherence, sustainability and progress to impact;
- (ii) Identify key learning to feed into the design and implementation of the forthcoming programmes; and
- (iii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing programmes and projects by UNIDO.

Considering that field missions to participating countries could not take place during the independent mid-term evaluation due to COVID travel restriction, the terminal evaluation will have a greater emphasis on the GEIPP Country- Level Interventions. The selection of the countries to visit and the methodology to conduct the country missions will be determined during the inception phase, taking into consideration the suggestions by the programme management and SECO, the findings from the desk review, the actual situation in the countries, and travel restriction caused by the Covid pandemic, if any.

In view of the limited time and resources available, it is not possible for the evaluation to examine the full spectrum of the programme activities, achievements and drawbacks or

conduct extensive quantitative surveys. Rather the evaluation will pursue a stratified approach with selected country visits.

Taking into account the forward-looking nature, the evaluation will focus on: 1) in-depth study of the countries with eco-industrial parks that will be the centre of the future programme; and 2) the causal pathways to reach expected outcomes and impact.

The independent evaluation will cover the whole duration of the programme from its starting date in December 2018 to December 2022.

### III. Evaluation approach and methodology<sup>33</sup>

The TE will be conducted in accordance with the UNIDO Evaluation Policy<sup>34</sup>, the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle<sup>35</sup>, and UNIDO Evaluation Manual.

The evaluation will be carried out as an independent in-depth exercise using a participatory approach whereby all key parties associated with the programme will be informed and consulted throughout the process. The evaluation team leader will liaise with the UNIDO Independent Evaluation Unit (ODG/EIO/IED) on the conduct of the evaluation and methodological issues.

The evaluation will use a theory of change approach<sup>36</sup> and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The theory of change will depict the causal and transformational pathways from programme outputs to outcomes and longer-term impacts. It also identifies the drivers and barriers to achieving results. The learning from this analysis will be useful for the design of the future programmes so that the management team can effectively use the theory of change to manage the programme based on results.

#### 1. Data collection methods

Following are the main instruments for data collection:

- (a) **Desk and literature review** of documents related to the programme, including but not limited to:
- The original programme document, monitoring reports (such as progress and financial reports, mid-term evaluation report, technical reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
  - Notes from the meetings of committees involved in the programme.

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<sup>33</sup> Due to the global COVID-19 pandemic, the evaluation will be conducted in line with overall UNIDO guidance and rules responding to the global crisis. No international travel will be required and, in this way, prioritizing the health and safety of all parties involved.

<sup>34</sup> UNIDO. (2018). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/2018/08)

<sup>35</sup> UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

<sup>36</sup> For more information on Theory of Change, please see chapter 3.4 of UNIDO Evaluation Manual

- (b) **Stakeholder consultations** will be conducted through structured and semi-structured interviews and focus group discussion. Key stakeholders to be interviewed include:
- UNIDO Management and staff involved in the programme; and
  - Representatives of donors, counterparts and stakeholders.
  - Other interviews, surveys or document reviews as deemed necessary by the evaluation team and/or by the Independent Evaluation Unit for triangulation purposes
- (c) **Progress review of GEIPP country projects**
- Review of results achieved by the country projects, including interviews of actual and potential beneficiaries of improved technologies
  - A portfolio review of all relevant documents (project documents, progress reports, etc.) related to the country interventions
- (d) **Field visit** to at least four participating countries:
- On-site observation of results achieved by the programme, including interviews of actual and potential programme beneficiaries.
  - Interviews with the relevant UNIDO and SECO Country Office(s) representative to the extent that he/she was involved in the programme, and the programme's management members and the various national authorities dealing with programme activities as necessary. National Steering Committees
- (e) **Online data collection** methods: will be used to the extent possible. In some countries where field mission cannot take place, interviews with relevant stakeholders can be held virtually.

## 2. Evaluation key questions and criteria

The key evaluation questions are the following:

7. How well has the programme performed? Has the programme done the right things? Has the programme done things right, with good value for money? How well has the programme fit?
8. What are the programme's key results (outputs, outcomes and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent are the achieved results to be sustained after the programme completion? Is it on track to achieving its objectives? How successful are the new elements of the GEIPP, in particular the collaboration with the park management and the work at the policy level? What are the remaining barriers to achieving the objectives in the remainder of the programme and how to overcome them?
9. Programme Implementation and Adaptive Management: Has the programme been implemented efficiently, cost-effectively, and been able to adapt to any changing conditions thus far? Has the financial expenditure been implemented as planned? To what extent are programme-level monitoring and evaluation systems, reporting, and communications supporting the programme implementation?
10. What are the key drivers and barriers to achieve the long-term objectives? To what extent has the programme helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?
11. What are the key risks (e.g., in terms of financial, socio-political, institutional and environmental risks) and how these risks may affect the continuation of results after the programme ends?

12. What are key lessons learned from country level interventions. What works? What doesn't? What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the programme so far?

The table below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2 of UNIDO Evaluation Manual.

The evaluation will mainly focus on the achievement of the expected results indicated in the programme logical framework.

Table 3. Programme evaluation criteria

#	Evaluation criteria	Mandatory rating
<b>A</b>	<b>Progress to impact</b>	<b>Yes</b>
<b>B</b>	<b>Programme design</b>	<b>Yes</b>
1	• Overall design	Yes
2	• Logframe	Yes
<b>C</b>	<b>Programme performance</b>	
1	• Relevance	Yes
2	• Effectiveness	Yes
3	• Coherence	Yes
4	• Efficiency	Yes
5	• Sustainability of benefits	Yes
<b>D</b>	<b>Cross-cutting performance criteria</b>	
1	• Gender mainstreaming	Yes
2	• M&E: ✓ M&E design ✓ M&E implementation	Yes Yes
3	• Results-based Management (RBM)	Yes
<b>E</b>	<b>Performance of partners</b>	
1	• UNIDO	Yes
2	• National counterparts	Yes
3	• Donor	Yes
<b>F</b>	<b>Overall assessment</b>	<b>Yes</b>

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Unit uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory) as per table below.

Table 4. Project rating criteria

Score	Definition	Category	
6	Highly satisfactory	Level of achievement presents no shortcomings (90% - 100% achievement rate of planned expectations and targets).	SATISFACTORY

Score		Definition	Category
5	Satisfactory	Level of achievement presents minor shortcomings (70% - 89% achievement rate of planned expectations and targets).	
4	Moderately satisfactory	Level of achievement presents moderate shortcomings (50% - 69% achievement rate of planned expectations and targets).	
3	Moderately unsatisfactory	Level of achievement presents some significant shortcomings (30% - 49% achievement rate of planned expectations and targets).	UNSATISFACTORY
2	Unsatisfactory	Level of achievement presents major shortcomings (10% - 29% achievement rate of planned expectations and targets).	
1	Highly unsatisfactory	Level of achievement presents severe shortcomings (0% - 9% achievement rate of planned expectations and targets).	

### **Performance of partners**

The assessment of performance of partners will ***include*** the quality of implementation and execution of the executing entities in discharging their expected roles and responsibilities. The assessment will take into account the following:

- Quality of Implementation, e.g. the extent to which the agency delivered effectively, with focus on elements that were controllable from the given implementing agency's perspective and how well risks were identified and managed.
- Quality of Execution, e.g. the appropriate use of funds, procurement and contracting of goods and services.

The evaluation will assess the following topics, for which ***ratings are not required***:

- Need for follow-up:** e.g. in instances financial mismanagement, unintended negative impacts or risks.
- Materialization of co-financing:** e.g. the extent to which the expected co-financing materialized, whether co-financing was administered by the project management or by some other organization; whether and how shortfall or excess in co-financing affected project results.
- Environmental and Social Safeguards<sup>37</sup>:** appropriate environmental and social safeguards were addressed in the project's design and implementation, e.g. preventive or mitigation measures for any foreseeable adverse effects and/or harm to environment or to any stakeholder.

<sup>37</sup>Refer to GEF/C.41/10/Rev.1 available at:

[http://www.thegef.org/sites/default/files/council-meetingdocuments/C.41.10.Rev\\_1.Policy\\_on\\_Environmental\\_and\\_Social\\_Safeguards.Final%20of%20Nov%2018.pdf](http://www.thegef.org/sites/default/files/council-meetingdocuments/C.41.10.Rev_1.Policy_on_Environmental_and_Social_Safeguards.Final%20of%20Nov%2018.pdf)

## IV. Evaluation process

The evaluation will be conducted from mid-January to June 2023. The evaluation will be implemented in four phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

- ✓ Inception phase: The evaluation team will prepare the inception report providing details on the evaluation methodology and include an evaluation matrix with specific issues for the evaluation to address; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term evaluation, progress reports and the actual situation in the country.
- ✓ Desk review and data analysis;
- ✓ Interviews, survey and literature review;
- ✓ Country visits and debriefing to key relevant stakeholders in the field;
- ✓ Data analysis, report writing and debriefing to UNIDO staff at the Headquarters; and
- ✓ Final report issuance and distribution with management response sheet, and publication of the final evaluation report in UNIDO website.

## V. Evaluation team composition

A staff from the UNIDO Independent Evaluation Unit will be assigned as Evaluation Manager and will coordinate and provide evaluation backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Programme Manager, the GEIPP Chief Technical Adviser and national programme teams will act as resourced persons and provide support to the evaluation team and the IED evaluation manager.

The evaluation team will be composed of one international evaluator acting as the team leader and one expert on Eco Industrial Parks, cleaner production or resources efficiency. Additional national experts to conduct field visit in participating countries for case studies will be decided after the inception phase, if necessary. The evaluation team members will possess mixed skills, both on evaluation and eco industrial park management or cleaner production. The evaluation team members will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions in annexes to these terms of reference.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the programme under evaluation.

## VI. Time schedule

The evaluation is scheduled to take place from mid-January to June 2021. The tentative timeline is provided in table below.

The evaluation team will provide debriefings and presentation of the preliminary findings of the evaluation to the relevant stakeholders. The draft evaluation report is to be shared with the UNIDO programme management, SECO, UNIDO Independent Evaluation Unit, and other stakeholders for comments. The evaluation leader is expected to revise the draft evaluation report based on the comments received, edit the language and form and submit the final version of the evaluation report in accordance with UNIDO EIU standards.

### Tentative timeline

Timing	Tasks
December 2022	Recruitment of evaluation team
January 2023	Desk review Writing of inception report and online briefing with UNIDO programme manager and the programme team.
February-March 2023	Field visits to be confirmed during inception phase: Colombia, Peru, Indonesia, South Africa.
March-April 2023	Preparation of first draft evaluation report Draft evaluation report shared with stakeholders and SECO for comments
April 2023	Evaluation debriefings to UNIDO and SECO
May 2023	Revision of evaluation report after receiving comments from stakeholders
June 2023	Finalization and dissemination of the report

## VII. Evaluation deliverables

### Inception report

This Terms of Reference (ToR) provides some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the Team Leader will prepare, in collaboration with the team member, a short inception report that will operationalize the ToR relating to the evaluation questions and provide information on what type and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible UNIDO Evaluation Manager.

The Inception Report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework (“evaluation matrix”); division of work between the evaluation team members; field mission plan, including places to be visited, people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable.

### Evaluation report and review procedures

The draft report will be delivered to UNIDO Independent Evaluation Unit (with a suggested report outline) and circulated to UNIDO staff and key stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report will be sent to UNIDO's Independent Evaluation Unit for collation and onward transmission to the evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The evaluation team will present its preliminary findings to the local stakeholders at the end of the field visit, as necessary, and take into account their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place at UNIDO HQ afterwards.

The evaluation report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given by UNIDO Independent Evaluation Unit.

## **VIII. Quality assurance**

All UNIDO evaluations are subject to quality assessments by UNIDO Independent Evaluation Unit. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO Independent Evaluation Unit, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO's Independent Evaluation Unit).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO Independent Evaluation Unit should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO Independent Evaluation Unit and will be circulated within UNIDO together with a management response sheet.

**Annexes:** Job descriptions with the tasks of each evaluation team member specified.

### TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

<b>Title:</b>	International Principal Evaluator, Team Leader
<b>Level:</b>	Principal Specialist (D2)
<b>Main Duty Station and Location:</b>	Home-based
<b>Missions:</b>	South Africa and Indonesia (or Viet Nam): to be confirmed later
<b>Start of Contract (EOD):</b>	1 January 2023
<b>End of Contract (COB):</b>	30 June 2023
<b>Number of Working Days:</b>	50 working days spread over the above-mentioned period

### ORGANIZATIONAL CONTEXT

The United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability. The mission of UNIDO, as described in the [Lima Declaration](#) adopted at the fifteenth session of the UNIDO General Conference in 2013 as well as the [Abu Dhabi Declaration](#) adopted at the eighteenth session of UNIDO General Conference in 2019, is to promote and accelerate [inclusive and sustainable industrial development \(ISID\)](#) in Member States. The relevance of ISID as an integrated approach to all three pillars of sustainable development is recognized by the 2030 Agenda for Sustainable Development and the related Sustainable Development Goals (SDGs), which will frame United Nations and country efforts towards sustainable development. [UNIDO's mandate is fully recognized in SDG-9](#), which calls to “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”. The relevance of ISID, however, applies in greater or lesser extent to all SDGs. Accordingly, the Organization’s programmatic focus is structured in four strategic priorities: [Creating shared prosperity](#); [Advancing economic competitiveness](#); [Safeguarding the environment](#); and [Strengthening knowledge and institutions](#).

Each of these programmatic fields of activity contains a number of individual programmes, which are implemented in a holistic manner to achieve effective outcomes and impacts through UNIDO’s four enabling functions: (i) technical cooperation; (ii) analytical and research functions and policy advisory services; (iii) normative functions and standards and quality-related activities; and (iv) convening and partnerships for knowledge transfer, networking and industrial cooperation. Such core functions are carried out in Departments/Offices in its Headquarters, Regional Offices and Hubs and Country Offices.

The UNIDO Independent Evaluation Unit (EIO/IEU) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Evaluation is an assessment, as systematic and impartial as possible, of a programme, a project or a theme. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. EIO/IEU is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

## **PROGRAMME CONTEXT**

Detailed background information of the programme can be found the terms of reference (TOR) for the evaluation.

The International Principal Evaluator, Team Leader, will evaluate the programme in accordance with the evaluation-related terms of reference (TOR). He/she will work under the guidance and supervision of the Evaluation Manager from UNIDO Independent Evaluation Unit. He/she will perform, inter alia, the following main tasks:

<b>MAIN DUTIES</b>	<b>Concrete/ Measurable Outputs to be achieved</b>	<b>Working Days</b>	<b>Location</b>
<p>1. Undertake an expert desk review of programme documentation and relevant country projects; determine key data to collect and adjust the key data collection instruments accordingly (if needed)</p> <p>Lead the preparation of an inception report which streamlines the specific questions to address the key issues in the TOR, specific methods that will be used and data to collect in the field visits, detailed evaluation methodology confirmed</p>	<ul style="list-style-type: none"> <li>• An adjusted table of evaluation questions, depending on country specific context</li> <li>• A draft list of stakeholders to be interviewed</li> <li>• Inception report</li> </ul>	8 days	Home-based
<p>2. Briefing with the UNIDO Independent Evaluation Unit, programme management staff, other key stakeholders at UNIDO HQ, and SECO, to determine engagement and highlight expectations</p>	<ul style="list-style-type: none"> <li>• Interview notes</li> </ul>	2 days	Online
<p>3. Expert portfolio review of all relevant documents related to the country projects, including substantive and conceptual comments and proposals</p> <p>Take the lead in the theory of change analysis, leads interviews and focus group discussions.</p>	<ul style="list-style-type: none"> <li>• Portfolio analysis of country interventions</li> <li>• Inputs to the evaluation report</li> </ul>	5 days	Home based
<p>4. Lead country field visits to consult field programme stakeholders, partners and beneficiaries to verify and complete preliminary evaluation findings from desk review and assess the institutional capacities of the recipient country</p>	<ul style="list-style-type: none"> <li>• Interview notes and data collected</li> <li>• Evaluation/debriefing presentation of the evaluation's preliminary findings prepared, draft conclusions,</li> </ul>	16 days	South Africa and Indonesia (or Viet Nam): to be

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
Provide expert advice to the evaluation team member to collect appropriate data and information in a real time manner in the field.	recommendations and lessons learnt to stakeholders in the country, at the end of the mission		confirmed during inception phase
5. Lead the drafting of the evaluation report, with inputs from the team members, and in accordance with the evaluation TOR  Share the evaluation report to UNIDO Evaluation Manager and stakeholders for feedback and comments.	<ul style="list-style-type: none"> <li>• Draft evaluation report submitted</li> </ul>	14 days	Home-based
6. Online debriefing: Lead the debriefing of the evaluation preliminary findings, recommendations and lessons learnt to stakeholders for factual validation and comments  Hold additional meetings with and obtain additional data from evaluation/project manager and other stakeholders as required	<ul style="list-style-type: none"> <li>• Power point presentation</li> <li>• Feedback from stakeholders obtained and discussed</li> <li>• Additional meetings held as required</li> </ul>	2 days	Virtually
7. Revise the draft evaluation report based on comments and suggestions received through the evaluation manager and edit the language and finalize the evaluation report according to UNIDO Independent Evaluation Unit standards	Final evaluation report submitted to evaluation manager	3 days	Home-based
	<b>TOTAL</b>	<b>50 days</b>	

#### MINIMUM ORGANIZATIONAL REQUIREMENTS

**Education:** Advanced degree in social science, development studies, environment management or related areas

**Technical and functional experience:**

- Minimum of 15 years' experience in evaluation of development projects and programmes at international level, including 6 years at senior level is required.
- Leading and conducting high-level, strategic or complex evaluations of UN organizations and international development banks/organizations.
- Experience/expert knowledge of impact evaluation methodology
- Experience/expert knowledge of evaluating programmatic approaches
- Experience in evaluating environment management projects and programmes of other UN agencies, GEF and international financial institution is an asset

- Knowledge of technical cooperation programme/project management cycle, design, implementation and M&E is desirable
- Knowledge of multilateral technical cooperation and the UN, international development priorities and frameworks
- Familiarity with social and environmental analysis, tools and methodologies is an asset
- Experience in the needs, conditions and problems in developing countries is desirable.

**Languages:**

Fluency in written and spoken English is **required**.

**Absence of conflict of interest:**

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Unit.

**REQUIRED COMPETENCIES**

**Core values:**

WE LIVE AND ACT WITH INTEGRITY: work honestly, openly and impartially.

WE SHOW PROFESSIONALISM: work hard and competently in a committed and responsible manner.

WE RESPECT DIVERSITY: work together effectively, respectfully and inclusively, regardless of our differences in culture and perspective.

**Core competencies:**

WE FOCUS ON PEOPLE: cooperate to fully reach our potential –and this is true for our colleagues as well as our clients. Emotional intelligence and receptiveness are vital parts of our UNIDO identity.

WE FOCUS ON RESULTS AND RESPONSIBILITIES: focus on planning, organizing and managing our work effectively and efficiently. We are responsible and accountable for achieving our results and meeting our performance standards. This accountability does not end with our colleagues and supervisors, but we also owe it to those we serve and who have trusted us to contribute to a better, safer and healthier world.

WE COMMUNICATE AND EARN TRUST: communicate effectively with one another and build an environment of trust where we can all excel in our work.

WE THINK OUTSIDE THE BOX AND INNOVATE: To stay relevant, we continuously improve, support innovation, share our knowledge and skills, and learn from one another.

**Managerial and Leadership Competencies**

WE ARE STRATEGIC, DECISIVE, PRINCIPLED AND INSPIRATIONAL: As managers, we are strategic and fair in driving our team’s performance. As leaders, we are a source of inspiration, stand for norms and standards established in the UN Charter and duty bound to defend these ideals with a principled approach.

WE ARE INCLUSIVE AND ACCOUNTABLE: As managers, we are inclusive in our approach and maintain constructive engagement with all our stakeholders. As leaders, we embrace all personnel and stakeholders and are accountable mutually within UNIDO, within the system, to beneficiaries and the public and beyond.

**WE ARE MULTI-DIMENSIONAL AND TRANSFORMATIONAL:** As managers, we go beyond conventional methods to help our organizational units strengthen their own agility and adaptability to change. As leaders in the UN system, we have a vision which is integrated and engaged across the pillars of Peace and Security, Human Rights and Development.

**WE ARE COLLABORATIVE AND CO-CREATIVE:** As managers, we foster a team spirit and create meaningful opportunities to hear the voices of those around us, while realizing that only by working together can we accomplish our mission. As leaders we see the inter-dependency of imperatives of the UN Charter and personally champion a collaborative inter-agency, multi-stakeholders and cross-thinking approach.

## TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

<b>Title:</b>	Specialist on Eco Industrial Parks, Cleaner Production
<b>Main Duty Station and Location:</b>	Home-based
<b>Missions:</b>	Colombia and Peru (to be confirmed)
<b>Start of Contract (EOD):</b>	1 Jan 2023
<b>End of Contract (COB):</b>	30 Jun 2023
<b>Number of Working Days:</b>	30 working days spread over the above mentioned period

### ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Unit (ODG/EIO/IED) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Evaluation is an assessment, as systematic and impartial as possible, of a programme, a project or a theme. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. ODG/EIO/IED is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

### PROJECT CONTEXT

Detailed background information of the project can be found the terms of reference (TOR) for the terminal evaluation.

As the Specialist on Eco Industrial Parks and a member of the independent evaluation team, the consultant will evaluate the project in accordance with the evaluation-related terms of reference (TOR). Under the leadership of the team leader, he/she will perform, inter alia, the following main tasks:

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
<ul style="list-style-type: none"> <li>• Desk review of programme documentation and relevant country interventions</li> <li>• Review of all relevant documents related to the programme, including substantive and conceptual comments and proposals</li> <li>• In cooperation with the team leader, determine key data to collect and prepare key instruments (evaluation questionnaire and evaluation survey, if required)</li> </ul>	<ul style="list-style-type: none"> <li>• List of key data available and to be collected established</li> <li>• Evaluation questionnaire developed</li> <li>• Survey programmed and conducted (if required)</li> <li>• Agreement with the Team Leader on the structure and content of the evaluation report and the distribution of writing tasks.</li> </ul>	4 days	Home-based

<b>MAIN DUTIES</b>	<b>Concrete/ Measurable Outputs to be achieved</b>	<b>Working Days</b>	<b>Location</b>
<ul style="list-style-type: none"> <li>Together with the Team Leader prepare meeting/interview protocol and guide data collection and information flow in an agreed-upon format</li> </ul>			
<ul style="list-style-type: none"> <li>Briefing with the UNIDO Independent Evaluation Unit, project managers and other key stakeholders at UNIDO HQ to determine engagement and highlight expectations</li> </ul>	<ul style="list-style-type: none"> <li>List of stakeholders to be interviewed</li> <li>Detailed evaluation schedule</li> <li>Inputs to the inception report submitted to the evaluation team leader</li> </ul>	2 days	Home-based / Virtually
<ul style="list-style-type: none"> <li>Conduct country field visits to consult field programme stakeholders, partners and beneficiaries to verify and complete preliminary evaluation findings from desk review and assess the institutional capacities of the recipient country</li> <li>Prepare meeting notes and data based on the format requested by the team leader.</li> <li>Close exchange and discussion with the team leader on data and information collected from the field</li> </ul>	<ul style="list-style-type: none"> <li>Interview notes taken and analyzed</li> <li>Systematic data and information from the field</li> </ul>	15	Colombia and Peru (to be confirmed)
<ul style="list-style-type: none"> <li>Draft sections of and provide inputs to the draft evaluation report, as agreed with team leader</li> </ul>	<ul style="list-style-type: none"> <li>Inputs to the draft evaluation report submitted to evaluation team leader</li> </ul>	7 days	Home-based
<ul style="list-style-type: none"> <li>Provide targeted/expert inputs to debriefing/presentation of preliminary findings to project stakeholders for factual validation and comments</li> <li>Participate in additional meetings to obtain additional data from evaluation/project manager and other stakeholders as required</li> </ul>	<ul style="list-style-type: none"> <li>Inputs to debriefing / presentation of the evaluation's preliminary findings</li> <li>Feedback from stakeholders collected</li> </ul>	1 days	Virtually
<ul style="list-style-type: none"> <li>Substantively contribute to the final evaluation report, as agreed with team leader</li> </ul>	<ul style="list-style-type: none"> <li>Inputs to the final evaluation report submitted to evaluation team leader</li> </ul>	1 days	Home-based
	<b>TOTAL</b>	<b>30 days</b>	

#### MINIMUM ORGANIZATIONAL REQUIREMENTS

**Education:** Advanced degree in environment, engineering, development studies or related areas

**Technical and functional experience:**

- Minimum of 20 years' experience in environment management and engineering, clean and eco efficient production
- At least 10 years of hands on experience and research in clean production
- Experience in development projects and eco industrial parks in developing countries
- Knowledge of UNIDO activities an asset
- Knowledge about multilateral technical cooperation and international development priorities and frameworks
- Working experience in developing countries an asset

**Languages:** Fluency in written and spoken Spanish and written in English is required.

**Absence of conflict of interest:**

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Unit.

**REQUIRED COMPETENCIES**

**Core values:**

**WE LIVE AND ACT WITH INTEGRITY:** work honestly, openly and impartially.

**WE SHOW PROFESSIONALISM:** work hard and competently in a committed and responsible manner.

**WE RESPECT DIVERSITY:** work together effectively, respectfully and inclusively, regardless of our differences in culture and perspective.

**Core competencies:**

**WE FOCUS ON PEOPLE:** cooperate to fully reach our potential –and this is true for our colleagues as well as our clients. Emotional intelligence and receptiveness are vital parts of our UNIDO identity.

**WE FOCUS ON RESULTS AND RESPONSIBILITIES:** focus on planning, organizing and managing our work effectively and efficiently. We are responsible and accountable for achieving our results and meeting our performance standards. This accountability does not end with our colleagues and supervisors, but we also owe it to those we serve and who have trusted us to contribute to a better, safer and healthier world.

**WE COMMUNICATE AND EARN TRUST:** communicate effectively with one another and build an environment of trust where we can all excel in our work.

**WE THINK OUTSIDE THE BOX AND INNOVATE:** To stay relevant, we continuously improve, support innovation, share our knowledge and skills, and learn from one another.

## Annex 2. Projects and Eco Industrial Parks included in GEIPP

### Projects

- UNIDO Project No.: 170222 (main GEIPP programme document)
- UNIDO Project No.: 180318 (GEIPP-Peru)
- UNIDO Project No.: 180319 (GEIPP-Colombia)
- UNIDO Project No.: 180320 (GEIPP-Ukraine)
- UNIDO Project No.: 180321 (GEIPP-Viet Nam)
- UNIDO Project No.: 190088 (GEIPP-Egypt)
- UNIDO Project No.: 190324 (GEIPP-Indonesia)
- UNIDO Project No.: 200019 (GEIPP-South Africa).

### Eco Industrial Parks

Country	Industrial Parks receiving detailed support as part of GEIPP 2019-2023	Websites
Colombia (3)	Parque Industrial Malambo	<a href="http://pimsa.co/">http://pimsa.co/</a>
	Parque Industrial del Cauca	<a href="https://www.zonafrancadelcauca.com/">https://www.zonafrancadelcauca.com/</a>
	Parque Industrial de Occidente	<a href="http://zonafrancaoccidente.com/">http://zonafrancaoccidente.com/</a>
Egypt (2)	El Robbiki Industrial Park	<a href="https://cid-egypt.com/about-robbiki/">https://cid-egypt.com/about-robbiki/</a>
	SIDC Industrial Park (in Suez Canal SEZ)	<a href="https://sidc.com.eg/">https://sidc.com.eg/</a>
Indonesia (2)	Batamindo Industrial Park	<a href="http://www.batamindoindustrial.com/#/home">http://www.batamindoindustrial.com/#/home</a>
	MM2100 Industrial Town	<a href="http://mm2100.co.id/">http://mm2100.co.id/</a>
Peru (3)	Parque Industrial Sector 62	<a href="http://www.sector62.pe/">http://www.sector62.pe/</a>
	Parque Industrial La Chutana	<a href="http://lachutana.com/">http://lachutana.com/</a>
	Parque Industrial InduPark	<a href="https://www.indupark.com.pe/">https://www.indupark.com.pe/</a>
South Africa (3)	East London Industrial Development Zone	<a href="https://www.elidz.co.za/">https://www.elidz.co.za/</a>
	Phuthaditjhaba	No own website some information through Free State Development Agency <a href="https://www.fdc.co.za/index.php/about-us/fdc-services">https://www.fdc.co.za/index.php/about-us/fdc-services</a>
	Ekaindustria	<a href="http://www.mega.gov.za/ekaindustria-office/">http://www.mega.gov.za/ekaindustria-office/</a>
Ukraine (3)	Bila Tserkva Industrial Park	<a href="https://ip-bt.com/en/">https://ip-bt.com/en/</a>
	Patriot Industrial Park	<a href="https://patriot.sumy.ua/en/">https://patriot.sumy.ua/en/</a>
	Agromash Industrial Park	<a href="http://www.agrotechmash.com.ua">www.agrotechmash.com.ua</a>

Viet Nam (5)	Deep C Industrial Park (Hai Phong)	<a href="https://www.deepc.vn/en/">https://www.deepc.vn/en/</a>
	Amata Industrial Park (Dong Nai)	<a href="https://www.amata.com/en/industrial-cities/amata-vietnam/industrial-cities/amata-city-bien-hoa/">https://www.amata.com/en/industrial-cities/amata-vietnam/industrial-cities/amata-city-bien-hoa/</a>
	Hiep Phuoc Industrial Park (Ho Chi Minh City)	<a href="https://www.hiepphuoc.com/en/">https://www.hiepphuoc.com/en/</a>
	Hoa Khanh Industrial Park (Da Nang)	<a href="https://seedland.vn/en/hoa-khanh-industrial-park">https://seedland.vn/en/hoa-khanh-industrial-park</a> EIP project site <a href="http://eipvn.org/hoa-khanh-industrial-zone">http://eipvn.org/hoa-khanh-industrial-zone</a>
	Tra Noc 1&2 Industrial Park (Can Tho)	<a href="https://seedland.vn/en/tra-noc-industrial-park-1">https://seedland.vn/en/tra-noc-industrial-park-1</a> EIP project site <a href="http://eipvn.org/tra-noc-12-industrial-zone/">http://eipvn.org/tra-noc-12-industrial-zone/</a>
Total: 21 parks		

## Annex 3. Evaluation Framework including Key Evaluation Questions

Evaluation dimensions  • evaluation criteria	Evaluation questions	Source of information, data collection methods, data analysis methods
<b>1: Programme Strategy</b> <ul style="list-style-type: none"> <li>• design/relevance</li> <li>• results framework (logframe)</li> </ul>	a) To what extent did the programme design remain relevant throughout implementation? b) How strong is the country commitment/ownership? c) Were any management adaptations needed to achieve expected results? d) What are major technical needs/demands from stakeholders at country level?	Document review Individual Interviews with key stakeholders Group Discussions with key stakeholders Theory of change analysis Country portfolio analysis Global component analysis DAC Criteria assessment
<b>2. Progress towards results</b> <ul style="list-style-type: none"> <li>• effectiveness</li> </ul>	a) To what extent have the expected outcomes and objectives of the programme been achieved? b) Is GEIPP on track to achieve its objectives? c) How successful are the new elements of the GEIPP, in particular the collaboration with the park management and the work at the policy level? d) What are the remaining barriers to achieving the objectives of the programme and how can these be addressed?	Document review Individual Interviews with key stakeholders Group Discussions with key stakeholders Site visits Country portfolio analysis Global component analysis Updated (from MTE) assessment of global products DAC Criteria assessment
<b>3. Programme approach</b> <ul style="list-style-type: none"> <li>• design/relevance</li> <li>• effectiveness</li> <li>• efficiency</li> <li>• programme management</li> </ul>	a) How well does the GEIPP's programme approach work? b) How is it different from a compilation of individual projects? c) How beneficial is the interplay between the country and global level (Component 1 and 2)? d) How useful is the global component of the GEIPP for countries? e) What is the outreach and perception of the GEIPP beyond the immediate programme stakeholders?	Document review Individual Interviews with key stakeholders Group Discussions with key stakeholders Theory of change analysis Country portfolio analysis Global component analysis

		DAC Criteria assessment
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<b>Evaluation dimensions</b> <ul style="list-style-type: none"> <li>• evaluation criteria</li> </ul>	<b>Evaluation questions</b>	<b>Source of information, data collection methods, data analysis methods</b>
<b>4. Programme implementation and adaptive management</b>  <ul style="list-style-type: none"> <li>• efficiency</li> <li>• programme management</li> <li>• monitoring and evaluation</li> <li>• financial management</li> <li>• stakeholder engagement and communication</li> </ul>	a) Has the programme been implemented efficiently, cost-effectively and been able to adapt to any changing conditions thus far? b) Will all funds be expended by programme closure? c) To what extent have programme-level monitoring and evaluation systems, reporting, and communications supporting the programme implementation?	Document review Individual Interviews with key stakeholders Group Discussions with key stakeholders Site visits Country portfolio analysis Global component analysis DAC Criteria assessment
<b>5. Likelihood of transformative change / sustainability</b>  <ul style="list-style-type: none"> <li>• sustainability</li> </ul>	a) What are the risks that are likely to affect the continuation and expansion of programme results? b) Has the programme put in place mechanisms to ensure sustainability after its completion (in terms of financial, legal, institutional, socio-economic instruments, frameworks or processes)? c) Are the programme's successful aspects being transferred to appropriate parties, potential future beneficiaries, and others who could learn from the programme and potentially replicate and/or scale it up in the future?	Document review Individual Interviews with key stakeholders Group Discussions with key stakeholders Site visits Country portfolio analysis Global component analysis DAC Criteria assessment

<p><b>6. Lessons learnt</b></p> <ul style="list-style-type: none"> <li>all evaluation criteria</li> </ul>	<p>a) What are key lessons learned from country level interventions, including good practices?</p> <p>b) What aspects of the overall GEIPP have been more and which less successful?</p> <p>c) What lessons can be drawn from the more and less successful practices in designing, implementing and managing the programme?</p>	<p>Document review</p> <p>Individual Interviews with key stakeholders</p> <p>Group Discussions with key stakeholders</p> <p>Site visits</p> <p>Country portfolio analysis</p> <p>Global component analysis</p> <p>DAC Criteria assessment</p>

## Annex 4. Overview and Mission Findings for GEIPP Colombia

### 4.1 Project Details

<b>Project number:</b>	180319
<b>Project title:</b>	Global Eco-Industrial Parks Programme - Colombia: Country level intervention
<b>Thematic area code</b>	Energy and Environment
<b>Starting date:</b>	June 2019
<b>Duration:</b>	4 years
<b>Project site:</b>	the Republic of Colombia
<b>Government Coordinating agencies:</b>	Ministry of Commerce, Industry and Tourism (MinCIT) Ministry of Environment and Sustainable Development (MADS)
<b>Main counterparts:</b>	Ministry of Commerce, Industry and Tourism (MinCIT) Ministry of Environment and Sustainable Development (MADS)
<b>Other counterparts</b>	Ministry of Housing, City and Territory National Business Association of Colombia (ANDI) Selected industrial parks and tenant companies
<b>Executing agency/ cooperating agency:</b>	UNIDO
<b>Project Inputs:</b>	
- <i>SECO inputs:</i>	2,000,000 CHF <sup>1</sup>
- <i>Support costs (13%):</i>	260,000 CHF
- <i>Counterpart inputs:</i>	In-kind contributions
- <i>Grand Total:</i>	2,260,000 CHF

### 4.2 Role of Industrial Development in the Economy and Environment of Colombia

#### Growth, energy and sustainability:

Colombia's average growth over the last twenty years has been 4%, and the for the last ten (2013 to 2022) it was 3.3%. For 2023, GDP is projected to grow by only 1.7%, rising gradually to 2.0% in 2024 and 3.2% in 2025.

Colombia has had sustained growth, yet it remains one of the most unequal countries in the world. Economic growth alone has not been sufficient to reduce inequality, as barriers

to economic opportunity persist for certain groups (including by gender, ethnicity, and geographic location).

The country intends to move to zero net carbon emissions, to a climate-resilient economy and to a society that requires less oil and coal. In addition to significant investment and mobilisation of finance, this will require increasing productivity and technology adoption, facilitating job transitions, diversifying exports, reversing deforestation, and greening the energy, infrastructure, and transport sectors. Recent reforms, such as to taxation and green finance, address some of these challenges, but more action is needed for these transitions. Energy consumption has grown at the same rate as economic growth. In 2021, the main increases in primary energy extraction were in: Other renewables (27.1%), Hydro (18.9%) and Coal (12.1%). In 2022, the Colombian electricity matrix was as follows: hydro (67.1%), natural gas (15.2%), coal (8.9%), liquid fuels (6.3%), solar (1.7%).

The National Energy Plan 2022-2052 (PEN) constitutes the roadmap for the development of the energy industry, considering its future impact on supply, competitiveness and sustainability. It highlights the need to move further towards renewable sources and decarbonisation.

#### Industrial Development Policy<sup>38</sup>:

In Colombia, the Ministry of Commerce, Industry and Tourism has been promoting the country's Industrial Policy. This policy, also known as Business Development Policy, Competitiveness Policy or Productive Development Policy, is based on four pillars:

- Productivity of enterprises (emphasis on cleaner production)
- Productive transformation of sectors and regions,
- internationalisation of companies and consumers
- Country competitiveness,

Today, under the new approach towards a Reindustrialisation Policy 2022 - 2026, focus has moved towards closing productivity gaps, strengthening productive linkages and diversifying the domestic exportable supply. It emphasises territorialisation and a focus on sustainability and proposes intervention measures that commit to a regulatory agenda, strengthening infrastructure, public procurement for reindustrialisation and a foreign trade policy for internationalisation.

Industrial development in Colombia has been a key driver of the country's sustained growth for at least the last two decades. This same development has had an impact on the increase in energy consumption, but also on the environmental impact, which in global figures generates around 400,000 tons of Co2eq per year.

Although industrial parks in Colombia were created by Decree 2143 issued by the Ministry of Development in 1979, it is this policy that has favoured the installation and operation of industrial parks, which total 238 according to a recent study by the local UNIDO team belonging to GEIPP. It is in this context that the Global Eco-Industrial Parks Programme (GEIPP) has been working since 2019 on different fronts at the country level, to demonstrate the viability and benefits of Eco-Industrial Parks in Colombia.

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<sup>38</sup> "Política Nacional de Reindustrialización 2022-2026", Ministerio de Comercio, Industria y Turismo.

### 4.3 The Colombia Project and National Policies

The objective of GEIPP is demonstrate the viability and benefits of Eco-Industrial Park approaches in scaling up resource productivity and improving economic, environmental and social performances of businesses and thereby contribute to an inclusive and sustainable industrial development in Colombia.

This objective is developed within a national approach for eco-industrial parks in Colombia and activities will follow the recommendations of the Practitioner's Handbook for Eco-Industrial Parks, jointly published by UNIDO, WBG, GIZ and the Korean Ministry of Trade, Industry and Energy.

Law 41 of 1968, first enunciated Industrial Parks. Then in 1979 a Presidential Decree (D. 2143) was generated which gave the framework to regulate the benefits of industrial parks. In this context, the expected outcome of the IEP intervention is:

Improving the productivity of natural resources (including energy, water and materials) and reducing the pollution and waste intensity of industrial parks. The primary, or direct, benefits will be increased productivity and reduced environmental degradation.

The project link at the national level in Colombia is channelled through the Ministry of Commerce Industry and Tourism (MinCIT) and the Ministry of Environment and Sustainable Development (MADS).

This project created the Community of Practice (CoP) in 2021 as a macro-governance mechanism and vehicle to accelerate and set the EIP agenda. It has been linked to the National Competitiveness and Innovation System (SNCI) as a way to give it relevance and engage key actors.

It is important to note that the political environment for moving these issues to the strategic level has not been ideal because, within the Ministry of Environment and Sustainable Development (MADS), the EIPs are not in the priorities of the new work teams and, on the other hand, the Ministry of Trade, Industry and Tourism (MinCIT) has always expressed willingness but has not been fully committed to promote them within the Free Trade Zones Technical Committee.

However, Colombia is concerned about environmental issues. In addition to a legal framework that began to be strengthened with Law 99 in 1993, it has a national environmental, evaluation and licensing system and a set of standards that focus on environmental quality. It also has a National Policy on Sustainable Production and Consumption, a Climate Change Policy, a Circular Economy Programme, and its National Development Plan commits to sustainability goals. There are also incentives and economic support for companies and projects that implement sustainable practices, offered by various public organisations (MADS, UPME, IPSE, Bancoldex, SGR). This indicates that there is a regulatory and policy environment in line with the GEIPP project, but even so, the national response to the project has not been as strong as expected.

The GEIPP intervention in the country has contemplated collaborative work between different public and private institutions to establish in Colombia an enabling environment for the development of EIPs, and progress has been made in this regard. However, as pointed out by the park managers participating in the project, this has not been possible

because neither the national nor local authorities have been motivated and committed to participate, and therefore, this progress has been modest and has not yet permeated enough to influence national and local policies.

#### **4.4 Parks engaged with the GEIPP project in Colombia**

The GEIPP has focused on brownfield industrial parks only, in order to ensure realistic and tangible results within the GEIPP boundaries (temporal, financial and organisational). During the preparatory phase, UNIDO assessed the baseline and the suitability of existing industrial parks to be transformed into EIPs. A total of 238 parks and 39 Free Trade Zones were identified from existing databases (e.g., from ANDI and Chambers of Commerce).

Three industrial parks were selected for technical assistance, advisory services and capacity building activities and as representative of industrial parks in Colombia. Two are special economic zones (free trade zones) and one is an industrial park. They are located in the area of influence of 3 different cities with important industrial activities. In Barranquilla (PIMPSA) and in Cartagena (ZF La Candelaria) on the Caribbean coast, and in Cali (ZF Cauca) near the Pacific Sea. A fourth park near Bogotá (ZF Occidente) was selected in order to follow up on the identification of industrial synergies/symbiosis, taking advantage of the fact that the SNIP programme led by the Universidad de los Andes was being developed there.

The evaluation visited PIMSA, Zona Franca Cauca and Zona Franca Occidente for field interviews and on-site evaluation.

#### **4.5 Justification and Beneficiaries of the Project**

The experience that preceded the GEIPP in Colombia was the UNIDO-UNEP Programme for Resource Efficient and Cleaner Production. The current project gives continuity to and broadens the scope of one of the main lines of work of that previous global programme, specifically the line of work on EIPs; considering that this concept had great potential for further development and that it was one of the lines of work on which the next phase could focus in order to expand on the successes achieved.

In addition, financial institutions had shown a strong interest in EIPs, which enhanced the opportunities for scaling up activities at country level.

The project intervention model considered stakeholders, especially those involved in the formulation of the National Circular Economy Strategy. Led by the Ministry of Environment and Sustainable Development (MADS) and with the participation of working groups with other ministries such as the Ministry of Commerce, Industry and Tourism (MinCIT), they established an enabling environment to include EIP projects. Additionally, ANDI, Chambers of Commerce, Regional Autonomous Corporations, SECO and KOICA were considered essential to promote capacity building programmes, establish monitoring and evaluation programmes to track the performance of EIPs and facilitate financial and non-financial services for their development. Finally, academia was also given special consideration for its role in building bridges and fostering a tripartite public-private partnership to transfer

knowledge, communicate findings and develop methodologies to complement capacity development and monitoring of EIPs.

The final beneficiaries, which were selected as detailed in the following point, were the managers of the following parks: Parque Industrial Malambo SA (PIMSA), in Barranquilla, Zona Franca La Candelaria, in Cartagena, Zona Franca del Cauca, in Cali, and Zona Franca de Occidente, in Bogotá.

The Ministry of Environment and Sustainable Development (MADS) and the Ministry of Commerce, Industry and Tourism (MinCIT) also stand out on the public side.

## 4.6 Introduction to the participating EIPs

The selection of industrial parks to be part of the EIP project depended on multiple factors, such as the capacity of the park management to engage in EIP approaches, the diversity of industries located in the park, as well as the potential impact of an EIP approach. Following this pre-selection process, UNIDO's assessment identified a total of 6 industrial parks and 10 special economic zones with significant potential to become EIPs.

The prioritisation of these shortlisted industrial parks has been based on 19 qualitative criteria. For example, a key criterion is the commitment of the park management and tenant companies to participate in the project and to transform the existing industrial park into an EIP. Similarly, other criteria took into account the economic, social and environmental potential for transforming the park into an EIP. The application of this methodology resulted in the initial selection of 12 industrial parks for the GEIPP project in Colombia. Finally, four parks were selected; PIMSA (called "model park"), and the free trade zones of Cauca, La Candelaria and Occidente; the latter only for the purpose of following up on research and technical activities previously implemented for the project.

- **PIMSA (Parque Industrial Malambo) - key features:**

PIMSA is an industrial park belonging to a Colombian business group, ACESCO. It is a private industrial condominium that has an infrastructure of services aimed at guaranteeing cost reductions for the companies that locate in its facilities. It has a river port, which operates on the Magdalena River. It was the first Industrial Park authorised in Colombia, by means of Resolution No. 631 of 1980, under the guidelines of Decree 2143 issued by the Ministry of Development in 1979, which created the Industrial Parks.

ACESCO has 35 operating companies (3,800 direct workers; 30% come from the adjacent community of Malambo). The remaining 67% is unsold and ACESCO wishes to develop it with a greenfield approach. The park management is convinced that cleaner production is the responsibility of the park and not only of the companies. Prior to 2018, the Cleaner Production Centre worked in the park, but exclusively with its companies; fragmented experiences but without an overall vision.

ACESCO started with UNIDO in 2019 and it is the EIP that helped develop the Master Plan. It was with UNIDO that they were able to pitch and sell the idea to their Board of Directors. The company believes in the principles of Sustainable Development. Their challenge is how to make the business case for the SDGs profitable.

ASESCO has set itself the goal: "to create services for companies to comply with environmental regulations and the 17 SDGs as well as services that facilitate synergies and symbiosis".

During the pandemic, the EIP continued to make progress, communicating via video conferencing, a mechanism they used to transfer knowledge. The work with UNIDO identified potential initiatives to move forward, such as the composting plant. Various training sessions and technical advice were provided.

The park offers numerous services including a cleaning service, through coordination with the municipality (it is the municipality that enters the park and carries out the tasks). It has its own aqueduct that supplies the park with drinking water, which comes from the Magdalena River. It has oxidation ponds and is looking to improve this old system (30 years old) with the help of UNIDO towards a WWTP (Wastewater Treatment Plant, with natural technology: artificial lagoon and "green" filters).

It is also evaluating the implementation of bioclimatic warehouses (photovoltaic, green walls, with less carbon footprint generation).

The PIMSA has taken advantage of the following incentives to encourage the installation of companies:

- Strategic location
- Security
- Public services (low-cost water supply, public lighting).

PIMSA evaluated a solar farm project. However, this did not work out, as the local generating/distribution company negotiated very good (free) distribution contracts with the companies, on an individual level, which made the initiative fail.

Park/Industrial Zone	Key Positives	Considerations for participation in GEIPP
PIMSA (Parque Industrial Malambo)	<ul style="list-style-type: none"> <li>• The board and management of the park are convinced that the focus of development is towards an eco-industrial park.</li> <li>• They have implemented complementary initiatives such as the Huellas Foundation (CECO) that addresses cultural development; they created a Training Centre (SENA) aimed especially at the people in their area of influence in Malambo, leading to a metal-mechanic training centre.</li> <li>• They are working with the government on a procurement initiative for local suppliers, in areas such as boots, gloves and other safety items. This has an advantage for the calculation of their Carbon Footprint.</li> <li>• They have the challenge of incorporating local workforce associated with service provider companies. There are opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• There is no working strategy in the social dimension. Today they respond according to the needs of the environment. The GEIPP, in its new phase, could systematise and technically advise the park, to include activities linked to the social dimension.</li> <li>• There are new infrastructure projects that could be enhanced with the new phase of the GEIPP, such as the waste collection centre and the improvement of water sources.</li> <li>• The administration can make a considerable contribution to linking the 35 companies operating in the park, an aspect that can be enhanced in a new phase of GEIPP. This is relevant as individual GEIPP advice is successful, but collective participation is still a challenge.</li> <li>• The management assesses the holistic intervention towards an eco-industrial park as weak, as not all dimensions and areas of sustainability are being included. They</li> </ul>

	<p>for "shared value" initiatives, for example, the creation of a call centre with people from Malambo.</p> <ul style="list-style-type: none"> <li>• They value the projects that are emerging from GEIPP and that have an impact on the entire business community of the park: new infrastructure for wastewater treatment and use, bioclimatic warehouses, LEED infrastructure. They have great interest in being certified as an eco-industrial park in the near future. They want to participate in the development of the future technical standard. A Mutual Aid Scheme is in place and operational, which is dedicated to the training of local workers and applicants, where environmental and social issues could be included.</li> </ul>	<p>argue that even the urban design and architecture of the park are aspects that should be involved in a new phase of the GEIPP.</p> <ul style="list-style-type: none"> <li>• The park management does not have environmental information from the companies, an aspect that can be addressed by the GEIPP.</li> <li>• The park is located in a wetland (RAMSA zone), which implies a special effort due to the environmental impacts generated by the companies in the park.</li> <li>• There is an express requirement of the park administration to have spaces for linking and transferring experiences with other industrial parks that wish to move towards eco-industrial parks.</li> </ul>
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• **Zona Franca Cauca, salient features:**

This is a co-ownership that was created in 1997. It is based on Law 675 of 2001 on Co-ownership. In 2009 it became a Free Trade Zone (Free Regime, Decree 2147 of 23 December 2016), with the aim of maintaining the development of the region and investment in the area. It is located 19 km from Cali and close to the river port of Buenaventura.

It has an area of 134 hectares, which is home to 34 companies. Almost 9 hectares are being planned for a possible solar power plant. Its companies are linked to the construction, metalworking, food and beverage, manufacturing, chemical, auto parts and printing industries.

Among its challenges is to generate value for the companies and the administration of the park. From this derives the convenience of migrating towards a sustainable park.

Services: truck yard, security, lighting of common areas, electricity transmission within the park, water treatment plants, industrial water piping, aqueduct (sewerage), natural gas, waste collection points (segregation) ("post-consumption points").

They are working together with UNIDO on the collection centre project (1,500mt<sup>2</sup>) to deal with a total volume of 4,500 tons/year of usable waste. They also have in their project portfolio the development of rainwater reuse infrastructure.

The focus of the Board of Directors (representatives of the companies) is on value generation, with a focus on corporate social responsibility and sustainability. A total of 6,500 employees works in the park. 34% belong to the municipalities of Cauca Valley.

Park/Industrial Zone	• Key Positives	• Considerations for participation in GEIPP
ZF Cauca (Cali)	<ul style="list-style-type: none"> <li>• The Board of Directors has focused on creating value for regional development and social equity, with the aim of generating economic, social and environmental value.</li> </ul>	<ul style="list-style-type: none"> <li>• The challenge of integration with the communities is a priority and determining issue that should be considered in a future phase of the GEIPP. The park is located in Afro-American and indigenous</li> </ul>

	<ul style="list-style-type: none"> <li>• They publicly declare and disseminate their commitment to decent work and job security.</li> <li>• They consider as a priority the work in public-private partnerships, as well as community development, expressed in joint projects with local actors and communities to promote coexistence, values, leadership and culture.</li> <li>• They place emphasis on training and education: developing human talent by facilitating the integration of collaborators in the fulfilment of their work in the companies.</li> <li>• They created the Environmental Management Department and have a professional team dedicated to the subject, which supports the companies in the park in the development of their sustainability projects.</li> <li>• There are at least two concrete experiences of symbiosis and synergy of by-products between the companies in the park (companies that share waste for the manufacture of cleaning products; joint construction project of a wastewater treatment plant between two companies in the park).</li> <li>• They have a Quality Management System, which keeps records of various parameters that facilitate the development of sustainable projects.</li> </ul>	<p>communities. This situation has led to the corporate social responsibility strategy that they apply today. They evolved from philanthropy to the creation of shared value.</p> <ul style="list-style-type: none"> <li>• The GEIPP should be in tune with the actions that the park is currently undertaking and which are in line with the social dimension that is not explicitly included in the GEIPP, such as labour inclusion and gender equality, local businesses as suppliers of the park (for example, the company that maintains the green areas and gardens, or the company La Mulata, which supplies workers to the park's companies). It is a short-term opportunity to address management services (segregation and recovery of solid waste) as an opportunity for local development and linked to environmental issues.</li> <li>• The community attributes the contamination of the adjacent river to the park, an aspect that constitutes a risk factor for the project.</li> <li>• There is a significant number of companies in the park that participate in the PEI (15 companies), which constitutes an opportunity to identify symbiosis and synergy of by-products in a future phase of the GEIPP.</li> </ul>
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• **Zona Franca de Occidente (Bogotá), salient features:**

Zona Franca Occidente was established in 2010. It has an area of 55 hectares. It has 46 sectorial companies and another 12 service companies, which involve a total of 1,200 workers (50% of the people working in the Free Trade Zone are from nearby neighbourhoods, from the municipalities of the western area).

The main sectors represented by the companies are food, plastics, health/pharmaceutical, agro-industrial, logistics, manufacturing, industry 4.0 and technology.

Its original design includes 4 stages of development. Today there are already 3 operational stages with installed companies and the fourth stage is still under design. Since 2010 when they conceived the industrial park project, they devised the convenience of installing a wastewater treatment plant (WWTP) and an infrastructure (a lagoon) for rainwater harvesting for 36,000 mt<sup>3</sup>.

The park management became involved with UNIDO in 2019, in order to improve certain processes. UNIDO provided it with a monitoring tool, which has allowed it to get to know the companies. It is worth mentioning that this park has been selected by GEIPP to follow up on previous projects and build on that experience. There is interest in being recognised as an eco-industrial park because they think it helps to bring in clients.

Park/Industrial Zone	Key Positives	Considerations for participation in GEIPP
ZF Occidente (Bogotá)	<ul style="list-style-type: none"> <li>• They are members of the United Nations Global Compact, highlighting the following issues: human rights, labour standards, environment and anti-corruption.</li> <li>• They publicly disseminate their commitment to the reduction, reuse and recycling of solid waste, as well as UNIDO's GEIPP Project.</li> </ul>	<ul style="list-style-type: none"> <li>• Given that the selection of this park did not consider the same technical assistance and capacity building support as the other two parks described, the level of understanding and actions deployed by the management of this park is lagging behind and will require more effort to implement a new phase of GEIPP.</li> <li>• Senior management's commitment to the eco-industrial park approach is not apparent, even though it is advertised on their website.</li> </ul>

## 4.7 Review of the Park Selection Process

The selection of PIMPSA and ZF Cauca were correct, as in both cases they have the operational capacity (professional team and resources) and a high degree of commitment from the administration to move towards an eco-industrial park.

In both, the technical assistance approach was adequate, focusing on resource efficiency and cleaner production (RECP) assessments, technical support for a new WWTP, implementation of industrial synergy and RECP and renewable energy, depending on each case.

It should be noted that in both parks, the social dimension has not been addressed by the project, and both administrations have repeatedly stressed the relevance of the issue in the context of sustainable parks. By the way, this is not an aspect that calls into question the selection, but the intervention approach of the project.

PIMSA was considered a model case, but it is in Cauca where the most significant results are produced, and where the UNIDO project can be attributed to the symbiosis and synergy of by-products that is now being applied between companies.

With respect to Zona Franca Occidente, a lower level of commitment on the part of top management is perceived. This is a fundamental aspect that should motivate its review as a possible beneficiary of a new phase of the project.

## 4.8 Overview of key evaluation mission findings for Colombia

EVALUATION DIMENSIONS AND EVALUATION CRITERIA	EVALUATION FINDINGS
<p style="text-align: center;"><b>INTENDED OUTCOMES</b></p> <p>OUTCOME 1: <b>Incentivize and mainstream EIP</b></p> <p>OUTCOME 2: <b>Identify and implement EIP opportunities</b></p>	
<p>1: Programme Strategy design/relevance results framework (log frame)</p>	
<p>a) To what extent did the programme design remain relevant throughout implementation?</p> <p>b) How strong is the country commitment/ownership?</p> <p>c) Were any management adaptations needed to achieve expected results?</p>	<p>a) In general terms, the design of the programme has been relevant. Actions have been implemented in most of the areas included in the Theory of Change and have been incorporated in the annual operational planning. However, there are still some dimensions that have not been covered and these are discussed below.</p> <p>b) The degree of commitment and country ownership is low. There is no particular appreciation on the part of national authorities. At the level of local or departmental authorities, it is even lower. Changes of personnel in authorities at all levels delay the ownership processes; but the main problem is the need to understand the motivations of public officials and to identify the public official or authority that can lead the promotion of eco-industrial parks. In short, it is key to identify the key aspects that mobilise the authorities, and to have the right leadership in place to champion the process.</p> <p>c) An indirect way to influence the policies promoted by the national authorities has been created through establishment of technical standards for Eco-Industrial Parks. By way of background, including a participatory process on technical standards opens up</p>

d) What are major technical needs/demands from stakeholders at country level?

a space for dialogue with various stakeholders, organises and articulates participation and legitimises the results achieved. It will make it possible to influence the policies of various national authorities, which today are not perceived as being very involved in GEIPP.

d) Firstly, technical support in efficient management of inputs and raw materials. Secondly, linking the effort in the parks with regulations. Finally, and distant in the scale of priorities, are the matters linked to social development; however, this matter is observed as a need, but not expressed in the GEIPP project because UNIDO has not highlighted this dimension as a matter that should be part of the planning.

## 2. Progress towards results effectiveness

a) To what extent have the expected outcomes and objectives of the programme been achieved?

a) In relation to outcome 2 of component 1, a good level of compliance is evident. EIP opportunities have been identified, with economic and environmental benefits. The social dimension is very limited and has hardly been addressed, with the exception of actions to train the human capital of the companies participating in the parks and training for service providers who are part of the local community.

Stakeholders reported the successful identification of opportunities in such areas as cleaner production and energy efficiency and frequently responded by valuing the Programme's contribution. Companies value the technical support received, in which they highlight the good level of knowledge and experience of the consultants. "Being part of an EIP is useful and advantageous: joint and higher impact projects, waste exchange, projects of group interest (e.g., photovoltaic generation)".

On the other hand, Outcome 1 of component 1, related to incentivising and integrating EIPs into policies and regulations, is pending. An initiative to promote a Colombian technical standard (NTC), which seeks to define the concept of the eco-industrial park more clearly, is advancing and is expected help prioritise the issue among both public and private decision-makers.

**b) Is GEIPP on track to achieve its objectives?**

b) Many stakeholders affirmed that the GEIPP is on the right track to achieve its primary objectives. However, there is a need for more time to implement actions in the different dimensions of the Programme. In this sense, it can be said that an extension of the GEIPP would have a positive impact on the fulfilment of the objectives set.

Some of the companies' responses (to a self-completion survey) show that the Programme has is seen to have delivered some benefits, even at this early stage in the promotion of the EIP approach.:

- "It has been very useful - the relationship with other companies in the park, which has been promoted by the Programme".
- "It has given us visibility as a company".
- "UNIDO is a brand of seriousness, which strengthens the proposals that company executives take to their Boards of Directors."
- "It has allowed us to identify sustainability projects and to evaluate projects technically and financially".
  
- Other responses indicate that there are also desired aspects that have not been addressed:
- "We are interested in a sustainability label at park level and that is what we want to work on" (Concept repeated by several park managers).
- "It would be very good for the Programme to include the social dimension and for expert consultants to come in, because UNIDO has not addressed this issue to date" (Common response among companies).

**c) How successful are the new elements of the GEIPP, the collaboration with the park management and the work at the policy level?**

c) From the perspective of the UNIDO project team and park managers:

Collaboration with park management level has been fruitful. There is a good level of awareness and effective collaboration between the programme team and park management. Regular communication is valued by the park administrations. The information received from UNIDO has been useful and stakeholders particularly appreciated the opportunity to link with other parks, which took place on one occasion.

<p>d) What are the remaining barriers to achieving the objectives of the programme and how can these be addressed?</p>	<p>From the perspective of both park administrators and the tenant companies, this relationship is not generally seen as strong. The Programme has not had a major impact on the links between park managers and companies; in the cases where good links are observed, it is not attributable to the GEIPP.</p> <p>d) The main obstacle is seen in the commitment of local authorities, but also of national authorities. There is no eco-industrial park policy and no regulation. What exists today as a regulatory framework on industrial parks predates the GEIPP, but there is nothing in relation to the eco-industrial dimension.</p>
<p><b>3. Programme approach:</b></p> <ul style="list-style-type: none"> <li>• Design</li> <li>• relevance</li> <li>• effectiveness</li> <li>• efficiency</li> <li>• programme management</li> </ul>	
<p>a) How well does the GEIPP's programme approach work?</p>	<p>a) The programme approach is perceived as broadly appropriate in the case of Colombia. However, it is also necessary to consider social and political aspects that influence its effectiveness. As with Peru, there is a low level of municipal participation in the programme's activities. Inappropriate practices in the relationship between the municipalities, park administrations and companies have hindered engagement. One aspect that must be considered is the influence of politics on the priorities of mayors. It is difficult for them to promote projects (such as EIP) that do not have a high level of demand from their electoral community. So municipal participation is minimal, even though this level of government is a key player in authorisations and permits necessary for EIP, since EIP is a targeted and selective initiative that does not affect a large number of companies or voters.</p>

**b) How is it different from a compilation of individual projects?**

b) The programmatic approach provides an idealised framework, against which different elements of country projects can be assessed. However, global guidelines or standards have been found to need adaptation to fit different national characteristics and contexts.

**c) How beneficial is the interplay between the country and global level (Component 1 and 2)?**

c) The interplay between country and global level has benefitted the national programme. Study tours or stay-over programmes were assessed very positively by stakeholders. Sharing varying international experiences from the global component has allowed national projects to broaden their focus, as well as to modify and replicate activities that have been more effective among global participants.

**d) How useful is the global component of the GEIPP for countries?**

d) The global contribution is perceived as beneficial, due to the knowledge that has been made available to companies and park administrations, who have explicitly valued it and, where appropriate and possible, have made use of it.

**e) What is the outreach and perception of the GEIPP beyond the immediate programme stakeholders?**

e) The Programme has penetrated the business sector and created great interest. However, as summarised by one stakeholder "there has been a failure to show the public sector the importance of the Programme"; outreach to government actors has been limited. Other potential stakeholders have remained outside the Programme's influence; notably the academic sector (universities), Non-Governmental Organisations (NGOs) or business associations, the latter being very relevant due to their level of influence in the productive sector. Municipalities (local government) and Governorates (departmental government) have also not had major engagement.

#### **4. Programme implementation and adaptive management**

- efficiency
- programme management
- monitoring and evaluation

- financial management
- stakeholder engagement and communication

a) Has the programme been implemented efficiently, cost-effectively and been able to adapt to any changing conditions thus far?

a) Overall, actions taken have been effective. Compliance with project indicators is at 80% and there are still more than 6 months to go. However, the indicators set out in the logical framework do not always respond to the goals sought. The local UNIDO team suggested that there is room for improvement.

- There are some profitability indicators. The demand is high from the perspective of the companies served, as they generally expect a payback time of less than 3 years. To date (June 2023), a total of 107 investment projects have been mapped, which in total would reach US\$ 8,900,000 and estimate annual savings of US\$ 2,044,000. There are another 15 projects implemented with investments of more than US\$ 700,000 with annual savings of US\$ 312,000 (2-year payback), and 12 projects in the process of implementing US\$ 1,400,000 with estimated annual savings of US\$ 900,000.
- The perception of the UNIDO implementing team is that the Programme allows for adaptation, although this has not been evidenced. What can be affirmed is that the GEIPP's Vienna headquarters promotes flexibility and the desirability of adapting the Programme when necessary. A question that remains to be resolved concerns the management level at which this flexibility exists – whether in-country or only at UNIDO headquarters?

b) Will all funds be expended by programme closure?

b) Yes, all funds will be spent by the end of the programme. At the time of this report, 12% of the budget is still available, but it is already planned to be spent.

c) To what extent have programme-level monitoring and evaluation systems, reporting, and communications supported the programme implementation?

c) The reports based on monitoring in Colombia have been useful and have allowed decisions to be taken. The local UNIDO team considers these reports as fundamental to management.

<p><b>5. Likelihood of transformative change / sustainability</b></p>	
<p><b>a) What are the risks that are likely to affect the continuation and expansion of programme results?</b></p> <p><b>b) Has the programme put in place mechanisms to ensure sustainability after its completion (in terms of financial, legal, institutional, socio-economic instruments, frameworks or processes)?</b></p>	<p>a) The risks for the continuity of the programme in the case of Colombia are mainly of a political nature and in two dimensions: national government policy and local government policies (municipalities and departmental governments). In the first case, as there is no defined policy for eco-industrial parks, nor a clear expression of interest from the current government, there are not only opportunities but also threats due to uncertainty. In the second case, it refers to partisan politics, closely linked to the electoral results of the incumbent authority and constantly implying pressure on the parks. Although the latter cannot be confirmed as a national feature, it proved a recurrent aspect raised by stakeholders.</p> <p>b) The Programme model includes some mechanisms for transferring knowledge and capacities to various stakeholders. However, programme governance (EIP) has not been defined as a platform for continuing the Programme's initiatives and Work Plans. Governance is an issue that is perceived as central to the continuity of the EIP, yet it is not highlighted among the priority actions.</p>

c) Are the programme's successful aspects being transferred to appropriate parties, potential future beneficiaries, and others who could learn from the programme and potentially replicate and/or scale it up in the future?

c) A deficiency is noted in the effectiveness of the programme's communications. When the various stakeholders were consulted regarding their knowledge of the programme, their responses showed a lack of clarity and a deficit of information. An exceptional case is the free trade zone industrial parks directorate of the National Association of Industry (ANDI), which showed knowledge and mastery of the GEIPP. In summary, the relevance given by the programme to communications is assessed as inadequate. There is no communications strategy aimed at the main public decision-makers, designed to make them aware of the Programme and position it on the national institutional agenda.

For their part, park managers show partial information on the GEIPP and therefore do not constitute an effective means of transferring the Programme's contents to companies.

#### 4. Lessons learnt - all evaluation criteria

a) What are key lessons learned from country level interventions, including good practices?

Key lessons: a)

- An industrial policy is not enough without eco-industrial park regulations. Although Colombia has an industrial development policy and has a significant number of industrial parks (a recent study by the local UNIDO team identified more than 200) that could be part of a commitment to sustainability, the absence of a legal or regulatory framework has hindered the transformation of parks towards the eco-industrial park model.
- As long as communications are not prioritised, there is a risk of ineffective dissemination of the Programme (globally and in detail) to stakeholders and thus also a risk to continuity.

b) What aspects of the overall GEIPP have been more and which less successful?

c) What lessons can be drawn from the more and less successful practices in designing, implementing and managing the programme?

- Political factors are highly relevant and generate uncertainty. This aspect should be considered in the GEIPP's intervention strategy in politically unstable countries; either through adaptive considerations of the Programme or through preventive actions or actions aimed at working mainly with less unstable sectors (e.g., private sector).
- The levels of the business hierarchy with which the Programme has engaged have not been equally effective. From the beginning of a Programme's intervention, it is necessary to work with senior company management. In general, Programme work has started at the technical level, which has made reaching the real decision makers more difficult.
- Quantitative information is important in the business sector - concrete cases that motivate the participation of enterprises. It is essential to have indicators of the likely costs and benefits of participating in GEIPP and that these are known by the companies.

More and less successful aspects: b)

The most important aspects are related to technical advice (waste recovery, energy efficiency and water management); financial advice is just beginning, but a satisfactory result is expected in the near future. The training of technical capacities in cleaner production also stands out as successful. Less successful has been the impact on public policies with incentive mechanisms or regulatory frameworks that promote the reconversion or creation of eco-industrial parks. Although the subject linked to social management is not explicit and is not dealt with in depth in the GEIPP model, it has been highlighted as an issue of interest for companies and park administrators.

Key lessons on programme management: c)

- In relation to the way budgets are allocated to develop projects in the parks, experience shows that it is advisable to specify limits to funding for individual parks. When this is not done, it is difficult for the park management to prioritise projects.

- Given the difficulty of influencing public authorities to formally include the issue of eco-industrial parks in national policies, the option of influencing the internal operating regulations in industrial parks was raised by companies. In this approach, companies would cooperate with park managers to develop their own regulations, focussed on sustainable benefits.
- More effort is needed to link the GEIPP programme to the regulatory system. The absence of regulation reduces the effectiveness of transformations within the park and among companies and does not promote a circular economy approach.

Some thoughts on important pre-existing enabling conditions:

- industrial policy
- political stability
- level of education and social organisation of the communities within a park's area of influence
- policies on relations with companies applied by mayors (municipalities) and governors (departmental).

All these conditions have a direct influence on the development of the Programme.

What has been the effect of these conditions on the implementation of the GEIPP in Colombia?

1. The existence of an industrial policy has facilitated the choice of industrial parks, due to the wide number of options to choose from.
2. The national political situation has affected the speed with which the GEIPP has been implemented. The national authorities have changed and this has required the re-promotion of the Programme among the new authorities.
3. The level of community organisation has not been the same in the areas influenced by all of the parks. Weaker communities have depended exclusively on the capacity of the park administration.
4. In the parks where such engagement has been most successful, it has been mainly due to the capacity of the park administration and is not attributable to the GEIPP.

Park management capacity directly influences the outcomes and effectiveness of the Programme.

A proactive administration with management capacity has an impact on a comprehensive approach to the GEIPP, starting with the provision of infrastructure to deal with solid waste, wastewater and provide renewable and clean energy. It also has an impact on the capacity to relate to the human environment, with communities and on the capacity to promote the participation of companies in the Programme.

Some statements from the companies interviewed go in this direction:

- Companies state the desirability of strengthening the park's participation in key services such as water treatment, waste collection and waste recovery. This is not currently the case in all areas.

- Stakeholders also confirmed the value of linking companies within EIPs, since this enables them to act jointly for investment projects (e.g., wastewater treatment and reuse plants), to contract service providers for appropriate waste disposal (e.g., through recovery, reuse, recycling), to help provide worker safety and improve the welfare of the local community.

- There is a particular interest for the GEIPP to include social dimensions, which is currently a deficit area. Where these have been addressed, this process is exclusively attributed to the park administrations. One specific aspect mentioned in this regard is the training of professionals and the development of competencies, as well as the impact on the knowledge, skills and potential of human capital in the local community. The convenience of influencing the reduction of staff turnover is also raised; training potential employees coming from the community, accompanying them in the process prior to hiring and influencing local education (A good example is Lab 4.0, an experience of training young people and children in multimedia tools promoted by the administration of the Cauca Park in Cali).

Therefore, the joint participation of companies, in coordination with the park administration, can be a fundamental pillar to positively affect the social component.

- In general, companies are aware of the issue of sustainability. Some of them even consider it as part of their strategic planning.

- **It is relevant for companies to be part of an eco-industrial park that has a certifiable seal or standard, as it contributes to the reputation of the companies that participate in it.**

Another aspect that stands out as central is the GEIPP's ability to communicate. It is considered important to focus on the COMMUNICATION component of the Programme.

## 4.9 Overview of Country SWOT analysis: Colombia

Implementation Area	Strengths	Weaknesses	Opportunities	Threats
<p><b>Component 2</b></p> <p>Generate and disseminate knowledge globally.</p>	<p>The interplay between country and global level has benefitted the national programme. Study tours or stay-over programmes were assessed very positively by stakeholders.</p> <p>Sharing varying international experiences from the global component has allowed national projects to broaden their focus, as well as to modify and replicate activities that have been more effective among global participants.</p>	<p>Global guidelines or standards have been found to need adaptation to fit different national characteristics and contexts.</p>		<p>No defined policy for eco-industrial parks, nor a clear expression of interest from the current government,</p> <p>Programme governance (EIP) has not been defined as a platform for continuing the Programme's initiatives and Work Plans</p> <p>Inadequate guidance on potential adaptive considerations of the Programme or of preventive actions or actions aimed at working mainly with less unstable sectors (e.g., private sector).</p>
<p><b>Component 1 Outcome 1</b></p> <p>incentivize and mainstream EIP</p>	<p>An indirect way to influence the policies promoted by the national authorities has been created through</p>	<p>There is no eco-industrial park policy and no regulation</p>	<p>it is key to identify the key aspects that mobilize the authorities, and to have the right leadership in</p>	<p>Need for more time to implement actions in the different dimensions of the Programme</p>

	<p>establishment of technical standards for Eco-Industrial Parks.</p> <p>The Programme has penetrated the business sector and created great interest.</p>	<p>The degree of commitment and country ownership is low. There is no particular appreciation on the part of national authorities. At the level of local or departmental authorities, it is even lower</p> <p>Little progress incentivizing and integrating EIPs into policies and regulations Failure to show the public sector or NGOs, CBOs) the importance of the Programme</p> <p>Relevance given by the programme to communications is assessed as inadequate. There is no communications strategy aimed at the main public decision-makers</p>	<p>place to champion the process</p> <p>Given the difficulty of influencing public authorities to formally include the issue of eco-industrial parks in national policies, the option of influencing the internal operating regulations in individual industrial parks was raised by companies. In this approach, companies would cooperate with park managers to develop their own regulations, focussed on sustainable benefits</p>	
<p><b>Component 1 Outcome 2</b></p> <p>Identify and implement EIP opportunities</p>	<p>Identification of opportunities in such areas as cleaner production and energy efficiency assisted by good level of knowledge</p>	<p>Social development is observed as a need, but not expressed in the GEIPP project because UNIDO has not highlighted this</p>	<p>Park managers are interested in a sustainability label at park level</p>	<p>Need for more time to implement actions in the different dimensions of the Programme</p>

	<p>and experience of consultants.</p> <p>UNIDO brand strengthens the proposals that company executives take to their Boards of Directors.</p> <p>Good level of awareness and effective collaboration between the programme team and park management.</p> <p>GEIPP's Vienna headquarters promotes flexibility and the desirability of adapting the Programme when necessary.</p> <p>The most important aspects are related to technical advice (waste recovery, energy efficiency and water management)</p>	<p>dimension as a matter that should be part of the planning.</p> <p>The Programme has not had a major impact on the links between park managers and companies.</p> <p>Low level of municipal participation in the programme's activities, even though this level of government is a key player in authorizations and permits necessary for EIP.</p> <p>Indicators set out in the logical framework do not always respond to the goals sought.</p> <p>In-country approach seems less flexible than UNIDO headquarters</p> <p>Park managers show partial information on the GEIPP and therefore do not constitute an effective means of transferring the</p>	<p>Good for the Programme to include the social dimension and for expert consultants to come in, because UNIDO has not addressed this issue to date</p> <p>it is advisable to specify limits to funding for individual parks. When this is not done, it is difficult for the park management to prioritize projects</p> <p>Stakeholders confirmed the value of linking companies within EIPs, since this enables them to act jointly for investment projects</p>	<p>The level of community organization has not been the same in the areas influenced by all of the parks. Weaker communities have depended exclusively on the capacity of the park administration.</p>
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		<p>Programme's contents to companies</p> <p>In general, Programme work has started at the technical level, which has made reaching the real decision makers more difficult.</p> <p>Less successful has been the impact on public policies with incentive mechanisms or regulatory frameworks that promote the reconversion or creation of eco-industrial parks.</p>		
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#### 4.10 Terminal Evaluation of GEIPP - Colombia. Stakeholder Engagement Meetings (24<sup>th</sup> April - 4<sup>th</sup> May 2023)

	Name & Surname	Organisation	Portfolio	E-mail Address	Meeting set up
<b>Business associations. Date: 24-04-2023</b>					
1	Anéglia Peña	ANDI	Director of Free Zones	<a href="mailto:apena@andi.com.co">apena@andi.com.co</a>	In person
2	Yeinni Patiño	CONFECAMARAS	Competitiveness Manager	<a href="mailto:apatino@confecamaras.org.co">apatino@confecamaras.org.co</a>	In person
<b>Visit to Cauca Free Zone (IP) and companies of Cauca. Date: 25-04-2023</b>					

1	Erika Castro	ZFC Cauca	Manager	<a href="mailto:erika.castro@zfc Cauca.com">erika.castro@zfc Cauca.com</a>	In person
2	Mariana Sandoval	ZFC Cauca	Environmental Coordinator	<a href="mailto:mariana.sandoval@zfc Cauca.com">mariana.sandoval@zfc Cauca.com</a>	In person
3	Andrea Maldonado	Global Industrias	Plant Manager	<a href="mailto:administracion@globalindustrias.com">administracion@globalindustrias.com</a>	In person
4	Víctor Guzmán	Virutex	Head of Innovation and Projects	<a href="mailto:victor.guzman@virutexilko.com.co">victor.guzman@virutexilko.com.co</a>	In person
<b>Focus Group Cauca Companies (Zoom):</b> Date: 26-04-2023					
1	Katherine Bravo	CINAL	Quality and environment coordinator	<a href="mailto:katherinbr@yupi.com.co">katherinbr@yupi.com.co</a>	online
2	Claudia Villegas	FORSA	Head of Corporate Integrated Management	<a href="mailto:claudiavillegas@forsa.net.co">claudiavillegas@forsa.net.co</a>	online
4	Yuly Mendoza	FRIOMIX	SGI Coordinator	<a href="mailto:yuli.mendoza@efemsa.com">yuli.mendoza@efemsa.com</a>	online
5	Gina Chacón	AGUAPAEZ	Administrative and Operational Head	<a href="mailto:gchacon@acuapaez.com">gchacon@acuapaez.com</a>	online
6	Luyly Camilo	Integral empaques	Head of Integrated Management Systems	<a href="mailto:lidersgc@integraldeempaques.com">lidersgc@integraldeempaques.com</a>	online
7	Javier Sánchez	NGB	Environmental Supervisor	<a href="mailto:jmsanchez@ngb.com.co">jmsanchez@ngb.com.co</a>	online
8	Kathy Alfaro	OVOPACIFIC	Quality and Environment Coordinator	<a href="mailto:calidad@ovopacific.com">calidad@ovopacific.com</a>	online
9	Jesica Quiñonez	AGRICOL	Environmental Coordinator	<a href="mailto:jesy.1998@hotmail.com">jesy.1998@hotmail.com</a>	online
10	Nestor Rueda	ALIVAL	HSE Leader	<a href="mailto:nrueda@alival.com.co">nrueda@alival.com.co</a>	online
<b>Visit to PIMSA Park.</b> Date: 27-04-2023					

1	Alfredo Caballero	PIMSA	General Manager	<a href="mailto:gerencia@parqueindustrialmalambo.com">gerencia@parqueindustrialmalambo.com</a>	In person
2	Laura Sabalza	PIMSA	Environmental professional	<a href="mailto:ambiental@parqueindustrialmalambo.com">ambiental@parqueindustrialmalambo.com</a>	In person
<b>Visit to PIMSA for company interviews: 28-04-2023</b>					
1	Paola del Río	ACESCO	Environmental Management Coordinator	<a href="mailto:pdelrio@acesco.com">pdelrio@acesco.com</a>	In person
2	Linda Cañas	ACEROS CORTADOS	Sustainable Development Coordinator	<a href="mailto:lcanas@aceroscortados.com">lcanas@aceroscortados.com</a>	In person
<b>Visit to Free Zone Occidente (ZFO): 02-05-2023</b>					
1	René Silva	ZFO	Administrative Coordinator	<a href="mailto:pdelrio@acesco.com">pdelrio@acesco.com</a>	In person
2	Nohora Saboya	ZFO	Environmental Management Supervisor	<a href="mailto:lcanas@aceroscortados.com">lcanas@aceroscortados.com</a>	In person
<b>Meetings with the public sector, BANCOLDEX and ONUDI: 03-05-2023</b>					
1	Andrea Corzo	Ministry of Environmental	Sectoral and Urban Environmental Affairs Directorate	<a href="mailto:acorzoa@minambiente.gov.co">acorzoa@minambiente.gov.co</a>	In person
2	Martha Carrillo	Ministry of Environmental	Specialised Professional - Focal Point. Contractor Circular Economy	<a href="mailto:mmcarrillos@minambiente.gov.co">mmcarrillos@minambiente.gov.co</a>	In person
3	Jenny Alarcón	Ministry of Industry, Trade and Tourism	Contractor - Directorate for Productivity and Competitiveness	<a href="mailto:jalarcon@mincit.gov.co">jalarcon@mincit.gov.co</a>	In person
4	María Zapata	Ministry of Industry, Trade and Tourism	Director of Free Trade Zones (Advisor Directorate of Productivity and	<a href="mailto:mzapata@mincit.gov.co">mzapata@mincit.gov.co</a>	In person

			Competitiveness) Focal Point		
5	María Manrique	BANCOLDEX	Sustainable Development Leader	<a href="mailto:mariaf.manrique@bancoldex">mariaf.manrique@bancoldex</a>	In person
6	Juan Sebastián Gutiérrez and team	UNIDO	National Coordinator GEIPP	J.GUTIERREZBOTERO@unido.org	In person
<b>Focus Group with companies in the Western Free Trade Zone Park (Zoom): 21-04-2023</b>					
1	Yenny Paola Marín Orjuela; Michellangelo Sánchez	HOLANDINA	Head of maintenance	<a href="mailto:dirtecnica@holandinazf.com">dirtecnica@holandinazf.com</a>	online
2	Francy Arévalo	BBRAUN	Integrated Management System Coordinator	<a href="mailto:francy.arevalo@bbraun.com">francy.arevalo@bbraun.com</a>	online
3	Heidi Caicedo	RAMO	Environmental Manager	<a href="mailto:heidi.caicedo@ramo.com.co">heidi.caicedo@ramo.com.co</a>	online
4	Andrés Hincapie	Deco Spazio	Administrator	<a href="mailto:ahincapie@grupodecospazio.com">ahincapie@grupodecospazio.com</a>	online
5	Tatiana Hernández	NOVALENE	GIS Leader	<a href="mailto:yhernandez@plastilene.net">yhernandez@plastilene.net</a>	online
6	laura Cardozo	Novalene	Head of integrated management system	<a href="mailto:lcardozo@plastilene.net">lcardozo@plastilene.net</a>	online

Note: Two additional remote meetings with the GEIPP UNIDO National Coordinator were included.

## Annex 5. Overview and Mission Findings for GEIPP Peru

### 5.1 Project Details

<b>Project number:</b>	180318
<b>Project title:</b>	Eco-Industrial Parks Development in the Republic of Peru
<b>Thematic area code</b>	Energy and Environment
<b>Starting date:</b>	August 2020
<b>Duration:</b>	3 years and 5 month
<b>Project site:</b>	Republic of Peru
<b>Government Co-ordinating agency:</b>	Ministry of Production (PRODUCE)
<b>Main counterparts:</b>	Ministry of Production (PRODUCE)
<b>Executing agency/ cooperating agency:</b>	UNITED
<b>Project Inputs:</b>	
- <b>SECO inputs:</b>	2,000,000 CHF
- <b>Support costs (13%):</b>	260,000 CHF
- <b>Counterpart inputs:</b>	In kind contribution
- <b>Grand Total:</b>	CHF 2,260,000

### 5.2 Role of industrial development in the economy and environment in Peru

For decades, Peru's economy has been driven by the development of industry, mainly concentrated on the exploitation of natural resources. Since the "boom" of saltpetre, guano, rubber, fishmeal, minerals, the economy has focussed mainly on the mining industry and the processing of agricultural products. The economy grew strongly between 2003 and 2012 at an average rate of 6%. However, for the last decade average growth has fallen by almost half.

#### Background<sup>39</sup>:

After recovering quickly from the COVID-19 crisis, Peru's gross domestic product (GDP) grew 2.7% in 2022, supported by buoyant private consumption and exports. Exports were supported by the elimination of sanitary restrictions and the start of the production stage of the Quellaveco mining project. In 2023, GDP growth is projected at 2.4%, driven by the primary sectors and services. In addition, growth is expected to accelerate slightly in the

<sup>39</sup> Source: <https://www.bancomundial.org/es/country/peru/overview>

following years, to around 2.8%, supported by the resumption of investment in large-scale mining projects. Overall, Peru's macroeconomic fundamentals remain strong.

It can be said that Peru has not yet industrialized. Underlying factors include the lack of an industrial policy, inadequate incentives, lack of risk capital for new ventures and an unbalanced productive structure<sup>40</sup>. From the interviews conducted during the evaluation mission with representatives of the Chamber of Commerce of Lima, this situation has not changed until today. This suggests that GEIPP could play an important role in the manufacturing export sector through the incorporation of clean technologies, more efficient use of resources and potential increased productivity. In particular, the natural resources manufacturing industry is one of the most susceptible to environmental impact, which offers opportunities for GEIPP.

#### Economic growth and energy consumption:

Peru's economic growth has led to an increase in the country's energy demand. According to Peru's Ministry of Energy and Mines (MINEM), electricity demand has grown at an average annual rate of about 5% over the past decade. The energy matrix of Peru is made up as follows: (i) 56.09% Thermoelectric (using a mix of fossil fuels), (ii) 38.70% Hydroelectric, (iii) 3.08% Wind and (iv) 2.13% Solar. Since solar, wind and geothermal potential is high, there is significant room to expand the use of renewable and non-conventional energy.

#### Business and the environment in Peru:

The environmental performance of companies in Peru varies widely depending on the industrial sector, the size of the company and its commitment to sustainability. In general, companies in Peru show a trend towards adopting more sustainable practices. However, there are still challenges and opportunities for improvement in terms of waste management, energy efficiency, conservation of natural resources and reduction of negative environmental impacts, especially in certain industrial sectors.

There is an environmental regulatory framework oriented to conservation standards and pollution control. Some of the main regulatory standards with a direct impact on cleaner production and circular economy are described in Section 5.3 below.

Some aspects of the environmental performance of companies in Peru<sup>41</sup> are related to advances in sustainability, with the implementation of environmental management systems, the reduction of polluting emissions, the optimization of the use of natural resources and the adoption of renewable energies; environmental education and awareness is heterogeneous, since larger companies and exporters have invested much more resources than those of smaller companies in it and this has had a direct impact on the level of compliance with environmental regulations and corporate social responsibility.

#### Industrial zones in Peru:

Peru has several industrial zones distributed throughout the country, which play an important role in economic development and employment generation. Some of the main industrial zones in Peru are Callao and various areas of Metropolitan Lima (including Lurín,

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<sup>40</sup> Industrial Data, Universidad Nacional Mayor de San Marcos Lima, Peru, vol. 18, no. 2, July-December, 2015, pp. 89-98

<sup>41</sup> Interview with executives of the Chamber of Commerce of Lima

which participates in the project), as well as some located in the cities of Arequipa, Trujillo and La Libertad.

### Industrial Parks:

Today in Peru there are 19 industrial parks (IPs) created by law. Therefore, they have been created through a public policy decision. Another 9 parks are private. Some of the most important IPs are:

- Villa El Salvador Industrial Park (PIVES): Located in Metropolitan Lima, PIVES is one of the largest and oldest industrial parks in Peru. It has a wide variety of industries, including textiles, metalworking, plastics, food and beverages.
- Ancon Industrial Park (PIANC): Also located in Metropolitan Lima, PIANC focuses on the manufacturing industry, especially in the production of food, plastics, chemicals and metallurgy.
- Chilca Industrial Park: located 60km south of Lima, houses private parks that have been installed during the last decade and whose approaches are more connected to the efficient use of resources and sustainability. This is the case of the Sector 62 and La Chutana parks that participate in the GEIPP project in Peru.

## **5.3 The Peru Project and National Policies**

The Peru project is based on lessons learned from the UNIDO/UNEP Resource Efficiency and Cleaner Production Programme (RECPP) and is aimed at generating synergies among the different industrial parks and zones, as well as with the circular economy activities of Peru's Country Partnership Programme (CPP). The "Eco-industrial Park Pilot Project to Promote the Development of ERPML in Peru" was also considered, as well as the experiences of more current projects such as "National Strategy for the Development of Industrial Parks" and "Development of Sustainable Industrial Zones in Peru", where UNIDO provided technical assistance for the sustainable development of industrial parks and zones.

The GEIPP has been developed to respond to a number of recommendations from previous projects. The project in question, "Towards the Development of Eco-Industrial Parks in the Republic of Peru", is part of the GEIPP and, as such, addresses these recommendations in the context of Peru. The objective of the GEIPP is to demonstrate the feasibility and benefits of eco-industrial park approaches in expanding resource productivity and improving the economic, environmental and social returns of enterprises, thus contributing to inclusive and sustainable industrial development.

This project also incorporates lessons learned, recommendations and observations made in the Final Evaluation of the RECPP which are: (i) loss of opportunities for synergies and learning due to poor coordination between work streams in the project and across projects in the broader programme; (ii) insularity in project management, low institutional incentives for cross-project learning, and insufficient balance between technical and non-technical managerial skills; and (iii) poor results-based management and monitoring.

The objective of the project is to demonstrate the viability and benefits of eco-industrial park approaches in expanding resource productivity and improving economic,

environmental and social performance of companies, thus contributing to inclusive and sustainable industrial development (DIIS) in Peru.

The specific expected outcome of the EIP intervention in Peru is:

Improve the environmental, economic and social performance of industries in Peru through the implementation of EIP approaches in selected industrial parks and a greater role of EIP in nationally relevant environmental, industrial and other regulatory instruments.

The main partner of the project at the national level is the Ministry of Production with a lesser role for the Ministry of the Environment, as indicated below:

#### The role and policies of the Ministry of Production (PRODUCE):

The main policy instrument to promote industrial parks is integrated into PRODUCE's 2014 Plan Nacional para la Diversificación Productiva (PNDP), which focuses on the development of productive infrastructure as a mechanism for increasing productivity. Under the PNDP it was decided to publicly designate and finance a certain number of selected industrial park proposals, such as "PNDP Productive Infrastructure Projects", to be developed on public land and under public ownership.

One of the main responsibilities of the PNDP is to promote, facilitate, develop and execute the implementation of industrial parks, in coordination with other levels of government. In July 2019, the new National Competitiveness and Productivity Plan (D.S. No. 237-2019-EF) was published, which implements the National Competitiveness and Productivity Policy (PNCP), (D.S. No. 345-2018-EF), of December 2018. This Plan contains 84 policy measures, organized according to nine Priority Objectives.

Priority Objective No. 6 of this Plan refers to the need to "Generate the conditions to develop a productive business environment" and has fourteen policy measures, among which Policy Measure 6.3: National Strategy for the Development of Industrial Parks stands out. This promotes "ensuring the implementation of the development of a network of industrial parks at the national level, as well as establishing mechanisms to articulate and integrate them with all levels of government, institutions and public and private entities involved in industrial development."

The main normative instrument to promote the environmental performance of industries is the regulation of Environmental Management for the Manufacturing Industry and Domestic Trade (D.S. No. 017-2015-PRODUCE), approved in 2015, and amended in 2019 (D.S. No. 006-2019-PRODUCE). This establishes environmental management requirements for the holders of the activities of the manufacturing industry and domestic trade, under the environmental competence of the Ministry of Production. These include regulations to obtain environmental certification for investment projects of economic activities through the evaluation of preventive environmental management instruments (IGA), in order to prevent or control negative environmental impacts.

Cleaner Production Agreements (voluntary agreements) are included within the framework of guidelines governing sectoral environmental management and seek to promote eco-efficient practices in manufacturing industry and domestic trade, as well as to encourage companies and industrial investment projects to go beyond mandatory requirements. PRODUCE also established Maximum Permissible Limits (MPLs) for certain industrial sectors

(cement, beer and paper) to determine the discharge of pollutants or emissions into the environment.

Whilst the Ministry of Production has competence in environmental matters for industry, it is the Ministry of the Environment that manages the general environmental legal framework and the evaluation instruments for the authorization of projects for industry (Environmental Impact Assessment System). Both of these Ministries separately promote Clean Production Agreements (CPAs).

#### *National policies in industrial parks and zones*

In Peru there are more industrial zones than industrial parks and in view of the potential for replication, both parks and industrial zones were considered for inclusion in the GEIPP. In terms of national policy, the management of sustainable industrial areas/parks applies proactive and multi-stakeholder approaches, while the management of traditional areas/parks focuses on administrative and operational duties.

The instrument with which the parks are promoted today is the National System of Industrial Parks (SNPI), which is managed by PRODUCE. In the update of the Supreme Decree of the SNPI, during 2021, the UNIDO Program made its contribution, ensuring inclusion of the definition of an eco-industrial park as an: "area destined for industrial use in an adequate site that guarantees sustainability through the integration of social, economic and environmental quality aspects, in its location, planning, operations, management and decommissioning".

Any park, public or private, that meets the criteria established in the SNPI is considered of "national relevance" and is considered especially in decisions related to public policies, such as priority in the development of infrastructure and access roads. According to interviews with representatives of the Chamber of Commerce of Lima, it emerged that the strengthening of industrial activity is important for the projection of Peru's growth and sustainable development with equity and well-being, and within this challenge, eco-industrial parks can play a fundamental role.

## **5.4 Parks committed to the GEIPP project in Peru**

Prior to the generation of commitments with the parks that participated in the project, there was an evaluation and selection process based on a common methodology for all, which included no less than 51 criteria.

Preliminary considerations:

- The project in Peru focused on providing technical assistance so that existing parks can reach international standards that allow them to function as Eco-Industrial Parks.
- A step-by-step methodology was applied to analyse and prioritize the industrial parks that were supported by the GEIPP in Peru, in order to propose a selection of industrial parks for technical assistance. The methodology was applied in a systematic and transparent manner to support stakeholder discussions and provide the final selection of industrial parks for in Peru.

- The methodology and tools used by UNIDO in the process of analysis and selection of project participants were the result of coordination and agreement between the World Bank, GIZ and UNIDO.

Initially in August 2020, two parks were selected with PRODUCE - Sector 62 and La Chutana, belonging to the Municipality of La Chilca, located about 60 km south of Lima. Early in 2021, a third industrial park in the same La Chilca sector - Indupark, was added. At the same time, the industrial zone of Lurín, located a few kilometres south of Lima, was also selected

Two of the three selected parks have ten years or less since their creation and are still at the stage of settlement and installation of companies. The economic situation and political instability<sup>42</sup> in the country have hindered the movement of companies from urban areas to industrial parks, which promoted the idea of working with an industrial area such as Lurin, which already had a large volume of companies.

## 5.5 Justification and beneficiaries of the project

GEIPP in Peru builds on previous projects carried out by UNIDO since 1994, including the joint UNIDO/UNEP programme of National Cleaner Production Centres (CNPML) and the Resource Efficiency and Cleaner Production Program (RECPP), which ran for more than 20 years of operation, with significant funding from the Swiss Government. In Peru, the Global RECPP contributed to strengthening and building the capacity of the Centre for Eco-efficiency and Social Responsibility (CER).

The CER also implemented with UNIDO support the "Eco-industrial Park Pilot Project to Foster the Development of RECPP in Peru", which ended in April 2018. During this pilot project, a number of RECPP demonstration and capacity-building projects for industries were undertaken and technical assistance was provided. The results of this pilot project showed that it is necessary to develop a specific EIP model for Peru and to foster multisectoral and multi-stakeholder cooperation – under the initiative of the Government (PRODUCE) – to manage industrial parks in a sustainable manner.

These and other national and international initiatives showed the importance of advancing industrial interventions with sustainability approaches and the GEIPP has been developed to respond to this need. The current national project, "Towards the Development of Eco Industrial Parks in the Republic of Peru", is part of the GEIPP and, as such, will implement its approach in the context of Peru.

*Main beneficiaries of the project:*

- Ministry of Production (PRODUCE).
- Industrial Park managers: La Chutana, Sector 62, Indupark
- Ministry of Environment (MINAM).
- Beneficiary companies committed to the project, both in the industrial parks and in the industrial zone of Lurin.

Other potential beneficiaries with a less prominent role to date:

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<sup>42</sup> Joint declaration by the managers of the selected parks (on-site interviews).

- Other Ministries (MVCS, MINSA)
- Municipality of La Chilca and Lurín.

## 5.6 Introduction to participating EIPs

The methodology for selecting industrial parks considered five steps, i) short list of parks, ii) pre-selection with minimum qualitative criteria (prerequisites), iii) prioritization, iv) review of priority parks with UNIDO, WBG and GIZ focus of 2017, v) final selection.

The pre-selection criteria took account of the following aspects: Park Management, Size, Industrial Activities, Law and Regulation, Secrecy and Confidentiality, Risk, Location, Commitment. In the next stage, the prioritization criteria were linked to: Park Management, Environmental Aspects, Social Aspects, Economic Aspects, Replicability, Visibility.

Through this approach, and in conjunction with the owners of each park, a review of prioritized Industrial Parks against the international framework of GEIPP was carried out. This led to the selection of two industrial parks, Sector 62 and La Chutana. Subsequently, after a few months, the project added the Indupark IP. Since it proved difficult to find suitable companies from the intended IPs, the GEIPP Peru project added a set of ten companies from the Lurí industrial zone, in the southern sector of Metropolitan Lima.

- **Sector 62 Industrial Park**

The Sector 62 project began to be designed in 2012, with the Ibárcena Group, which is funded with Peruvian capital and has a history of more than 30 years managing commercial and fishing centres. The Group decided to settle in La Chilca since there is access to energy, gas and three water access wells. Land use was changed from Agricultural in 2013 and then environmental impact studies were conducted, prior to introduction of roads and urban development. In 2014 it was decided to apply the concept of eco-efficiency (LED lighting, optimized water use).

Sector 62 Internal Regulations include criteria of eco-efficiency, mobility and production efficiency. The infrastructure, which has been installed includes wastewater treatment plants and reuse of water for irrigation and industrial use (reverse osmosis plant), with cisterns and underground wiring. The Park is motivated to realize industrial symbiosis. It has a renewable energy source contract that began operating in August 2023. Information was collected (2022) to map quality and quantity of solid waste. Today the waste is sold and a contractor carries out the segregation and recovery. The Park management is thinking about segregating waste at the source and possible energy generation project, since there is now a law to promote renewable energy, wind farms and energy generation from landfills.

Approximately 60% of the total available land (140 hectares) in Sector has been sold. However, only 10% of the companies that have bought their own land have settled (14 hectares). There is a third stage of 68 hectares that is expected to be available soon, giving a total of 208 total hectares for this industrial park. The Park has "I3" zoning status, which corresponds to large-scale industry, but without heavy activity (no emissions are allowed).

The Park would like to be formally recognised with a format such as "Sector 62 complies with the international sustainability standards promoted by the United Nations – UNIDO."

It is expected that this would attract foreign investment, thereby improving technological standards and competitiveness. The Park is working to comply with international standards and is convinced that participating in GEIPP Peru will contribute to this objective.

Sector 62 is a member of the Chilca Pupusana Chamber of Commerce, where it concentrates its participation on social actions.

Park/Industrial Zone	• Key Positives	• Considerations for participation in GEIPP
Sector 62	<ul style="list-style-type: none"> <li>• Commitment to GEIPP Peru and motivated to move forward with a new phase of the project.</li> <li>• Park oriented towards sustainability. It has water treatment and reuse plants. Starting project evaluation of removable energy generation and waste segregation at the Source (at the level of each company).</li> <li>• It has two operational phases (140 hectares) with security and access control, perimeter protection and permanent surveillance, access to commercial area, services and green areas. A third phase of development of the park with an additional 68 hectares, with high-standard urbanization infrastructure, is expected to enter into operation in the short term.</li> <li>• They have an Internal Regulation (co-ownership) that includes the concepts of eco-efficiency, mobility, efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• Park management has incorporated the language of the circular economy into its strategic definitions.</li> <li>• Park's intended future development is in line with GEIPP's approach.</li> <li>• The park is seeking more details from GEIPP on profitability indicators associated with an eco-industrial park, to promote a greater adhesion of the companies to the Project.</li> </ul>

• **La Chutana:**

The idea of La Chutana was born in 2010. The managers are in the metalworking and urban industrial sector that was previously located in Lima. The Park is now located in La Chilca, 60 km south of Lima. This area does not have much water, and this has to be supplied from deep wells. La Chilca is the source of more than 50% of Peru's electricity generation from gas and has become an important industrial centre.

The managers looked for a sector that would have a focus for the next 80 years and not just to move industrial production from the city to the Park. Its sectoral coverage includes production, export, recycling and other activities, which can all be met under La Chutana's status. It has "I4" industrial classification, which is suitable for any type of industrial company, even one with heavy emissions).

The managers have sought to make La Chutana the No. 1 Industrial Park in Peru. Reforestation, clean production and recycling were priority issues in the development of the project, which also has a forest nursery, where they grow native species. It has 600 total hectares, of which 230 hectares are commercial / industrial, and the rest of the area is for reforestation. Sustainability is in the genesis of the project: "in the DNA of La Chutana".

The park has a wastewater treatment plant and permanently monitors water, energy and waste. Building on an Environmental Impact Assessment, the Park has indicators that it

must monitor consistently, since these correspond to the issues that are at the centre of its priorities. It is about to start up a compost plant, for organic solid waste. It also hopes to start with the installation of solar lighting poles, in addition to those that already exist in its security booths. The IP is developing a cogeneration plant project (gas engines) and has identified the potential use of steam by some companies and plans to share this approach within a year.

The number of companies currently in operation on La Chutana is 7 and there are 12 more projects under development or partially operating. Since 50 sites have been sold, this means that only 20% of companies are operational. Although 65% of the sites have been sold, most companies have not yet been installed on the park.

Park/Industrial Zone	Key Positives	Considerations for participation in GEIPP
La Chutana	<ul style="list-style-type: none"> <li>• Sustainability is in the DNA of the strategic focus of the industrial park.</li> <li>• It has a volume of installed companies (19 in total) that could allow opportunities for synergy of by-products and symbiosis.</li> <li>• It has a good relationship with companies and effective media.</li> <li>• It integrates reforestation (360 hectares) as a pillar of the park</li> <li>• They have strived to spread their approach to sustainability with the following approach: "create a business community in production and services that allows to improve the environmental, economic and social performance of all industries established within the whole".</li> <li>• It has a Wastewater Treatment Plant that allows reusing around 70 thousand m3 of water annually.</li> </ul>	<ul style="list-style-type: none"> <li>• It is an interesting ally for GEIPP, as they publicly promote their approach to sustainability.</li> <li>• They are aimed at making the collective benefit greater than what could be achieved by operating individually, promoting a sustainable and inclusive industry, contributing to local development and the economic reactivation of the country.</li> <li>• The industrial park considers that participating in the GEIPP allows them visibility and influence in public policies and is projected with a medium and long-term alliance work.</li> <li>• They are working with UNIDO on the Roadmap for eco-industrial parks.</li> </ul>

• **Indupark:**

This is one of the most recent projects of the selected parks and has 223 hectares available. The park belongs to a company whose owner, the Peruvian businessman Diego Farah, created Indupark with a focus on real estate development. The company invests in commercial and industrial businesses and carries out urban development, aiming to provide "real estate solutions": with installed services and property for sale.

Services offered in Indupark: healthy property, adequate zoning, services according to regulations. Water networks, drainage, electricity, streets, sidewalks, fibre optics, natural gas networks, public lighting, security (property management) fenced.

18 companies are operational, equivalent to 11% of the total properties sold. 160 plots of land have been sold, representing 95% of the total available. There are 4 production companies and the rest are warehouses. Park management considers that the arrival of the rest of the companies has not materialized because of the current weak political and economic situation.

The Park was established when there were no regulations for Industrial Parks and has more difficult access than Sector 62 and La Chutana.

Originally, the Indupark project was aimed at the attribute of sustainability. The company considered it to offer a theme of "environmental romanticism". Lately they have attached much less relevance to this because they have found that customers are very pragmatic, and their focus is on becoming competitive again after the pandemic, with cost and income being the determining factor of everything, and they do not clearly observe the contribution of an eco-industrial park in these dimensions. However, the administration remains convinced that socially and environmentally responsible industrialization is required to penetrate the global market.

Park/Industrial Zone	Key Positives	Considerations for participation in GEIPP
Indupark	<ul style="list-style-type: none"> <li>• They understand the concept of eco-industrial park.</li> <li>• They are motivated to move forward with environmental care initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>• They consider the impact on national policies to move more decisively towards eco-industrial parks as key.</li> <li>• They value the contribution of GEIPP in technical assistance, in transfer of capacities in workshops and talks.</li> <li>• They had been very successful in adding companies to the Project, but they understood that it was crucial to advance in the promotion process with UNIDO.</li> </ul>

## 5.7 Review of the park selection process

The GEIPP has been in execution for almost three and a half years and in that time there has been a productive choice of the Sector 62 and La Chutana parks. However, Indupark's participation may need to be reviewed in the light of the results obtained to date. Although GEIPP's stated focus in Peru was brownfield, in the selected parks there are also conditions and opportunities for interventions in the greenfield context, especially in the growth areas of current parks, which have been operating for a relatively short time.

Since the number of companies participating in the parks has been very small (one to two companies per park) it has been difficult to identify opportunities for symbiosis or synergy of by-products. According to field interviews, since the project lacks a critical mass of operating Industrial Parks, it was decided to add companies from the industrial zone of Lurin, which is seen as an interesting opportunity for GEIPP.

## 5.8 Overview of key evaluation mission findings for Peru

EVALUATION DIMENSIONS AND EVALUATION CRITERIA	EVALUATION FINDINGS
<p><b>INTENDED OUTCOMES</b></p> <ul style="list-style-type: none"> <li>• <b>OUTCOME 1:</b> EIP incentivized and mainstreamed in relevant policy and regulations leading to an increased role of EIP in environmental, industry and other relevant policies in Peru</li> <li>• <b>OUTCOME 2:</b> EIP opportunities identified, and implementation started, with environmental (e.g., resource productivity) economic and social benefits achieved by enterprises confirmed.</li> </ul>	
<p><b>1: Programme Strategy design/relevance results framework (log frame)</b></p>	
<p>a) To what extent did the programme design remain relevant throughout implementation?</p> <p>b) How strong is the country commitment/ownership?</p>	<p>a) Still relevant with the two original design outcomes (component 1).</p> <p>b) Not yet fully owned by the country, by the authorities. Political factors (many changes of presidents and sectoral authorities) have been decisive. They managed to include private parks as part of the legal framework; previously only public parks were part of the regulation. However, the concept of sustainability (environmental, economic and social dimensions) was included in the National System of Industrial Parks (NSIP). Industrial parks are included as "nationally relevant" (they are prioritised in terms of public infrastructure). It has been necessary to build an administrative procedure for the Ministry of Production (PRODUCE) to include industrial parks in the NSIP. The local UNIDO team has</p>

c) Were any management adaptations needed to achieve expected results?

worked together with PRODUCE on the criteria that establish the "national relevance" of the IPs.

c) Component 1 does not give guidance on how to deal with the particularities of each country. In the case of Peru, it has not been applied to parks that are fully operational (brownfield); for the most part, participating parks have a low level of business occupancy and therefore often show many characteristics of greenfield sites. This situation forced the local UNIDO team to modify its approach to intervention, focusing part of its efforts on an industrial zone, rather than specifically on individual parks.

d) What are major technical needs/demands from stakeholders at country level?

d) **For Government:** the main technical needs are in the planning of what to do (and how) to develop EIPs. Today there is a "Regulatory Roadmap" in the public sector, but it is focused only on the regulatory dimension rather than on development processes for the Parks.

**For Industrial Park Management bodies:** they need to learn how to promote the advantages of EIPs over conventional IPs.

**For IP tenant companies:** advice on productive efficiency and the opportunities for industrial symbiosis with their neighbours and advice on cleaner production.

**For Consultants and service providers:** i) Universities, demand specific knowledge in cleaner production and EIP, to complement their own management capacities ii) consulting companies (5) and individual consultants (40), who have helped to implement UNIDO tools and models.

**Business associations:** i) legal certainty to advance investments ii) establish eco-industrial parks as a state issue (as with conventional industrial parks), iii) from cases with recorded successes, data are needed to show other companies, since sustainability is not generally seen as a priority issue, iv) improve financing conditions (guarantees, payment terms) to mobilise investments, v) train and develop competencies in eco-industrial parks within business associations.

**Municipalities:** not yet incorporated into programme as it has been very complex to integrate them.

## 2. Progress towards results effectiveness

a) To what extent have the expected outcomes and objectives of the programme been achieved?

a) The expected results of the Programme have been partially achieved, taking into account the time it has been under implementation. However, the type of indicators used (e.g., number of standards) and the absence of explicit targets in the programme limit the capacity to assess the quantitative level of progress. This is so because GEIPP performance indicators refer to outputs that are not necessarily linked to outcomes. For example, "number of regulations" does not point to legal strengthening of eco-industrial parks. In Peru, one major intervention was achieved in the National System of Industrial Parks, and it was successful since it formalises the existence of private industrial parks and highlights the concept of their sustainability. Before this adjustment to the system, only the concept of public industrial parks existed, while private initiatives were not recognised as industrial parks, still less eco-industrial parks.

However, from a broader perspective, it can be observed that:

- the Programme has had an impact on environmental policy: today companies belonging to the EIPs have a fast track.
- EIP has been incorporated into the national industrial parks strategy.
- the industrial parks have moved towards the creation of waste exchanges.
- in relation to companies inside industrial parks and outside the park (e.g., Industrial Zona, Lurín), 52 potential areas for improvement in sustainability have been identified, including some which present opportunities for industrial symbiosis.

b) Is GEIPP on track to achieve its objectives?

b) Overall, yes. SECO/UNIDO support has made it possible to address some of the challenges in participating parks, which are not yet fully developed and display many characteristics of greenfield sites. Social considerations have been largely absent among the EIP activities in Peru. To date, no action in this dimension has been included in the Annual Operational Plan. Only the gender factor has been included, but mainly limited to measuring and stimulating the participation of women in training courses. There are no indicators, nor is there any suggestion of a systematic plan to incorporate positive gender focussed measures in such areas as hiring of local personnel, local suppliers or local distributors.

c) How successful are the new elements of the GEIPP, the collaboration with the park

management and the work at the policy level?

d) What are the remaining barriers to achieving the objectives of the programme and how can these be addressed?

c) Collaboration with the government has been very good, with open channels of communication and explicit collaborative work. Interest in the EIPs is growing and the demand from government for support has been very positive.

d) However, despite good relations with government stakeholders, political factors have been a major cause of the slow progress of the Programme, exacerbated by the post-pandemic economic situation. Political uncertainty, expressed in successive changes of presidents, ministers and CEOs of the main national authorities, has hampered the continuity of the UNIDO Programme.

The national economic situation has reduced the capacity of companies to commit to participating in EIPs. Many have postponed investments to move from urban areas to the EIPs, even when they already own plots and sites in the parks. The management or executive teams of many companies do not yet consider sustainability as a priority issue.

### 3. Programme approach:

- Design
- relevance
- effectiveness
- efficiency
- programme management

a) **How well does the GEIPP's programme approach work?**

a) The GEIPP approach does not suit countries like Peru, which is experiencing political instability and weak industrial development. It would require adjustments. The programmatic approach favoured the impact on result 1 rather than 2, which would explain why better results have been obtained in result 1. It should be noted that the project in Peru only began to be implemented in January 2021.

b) **How is it different from a compilation of individual projects?**

b) At country level, there is little leadership on the individual EIPs. Although their management bodies are actors, that should in principle manage and promote articulation between companies, leading to synergies and in some cases industrial symbiosis. Nor would there be a spokesperson or promoter of dialogue between production companies to contribute towards sustainable approaches. Economies of scale are also reduced in projects that require critical mass (e.g., waste recovery), particularly since participating parks are often not fully tenanted. So GEIPP in Peru has not yet developed far beyond a set of individual site-specific projects, with little programme-wide identity.

c) **How beneficial is the interplay between the country and global level (Component 1 and 2)?**

c) At the national level (for the seven participating countries) there has so far been only one opportunity for all participating countries to come together for interaction. This was considered very beneficial, because it allowed for the exchange of experiences of challenges and suggested contributions and solutions to them. On the other hand, interaction between Peru and Colombia has been constant and is considered very valuable.

d) **How useful is the global component of the GEIPP for countries?**

d) UNIDO has compiled information at the global level (in conjunction with other organisations such as the WB and GIZ) and this provides relevant information (success stories), methodologies and intervention tools.

<p>e) What is the outreach and perception of the GEIPP beyond the immediate programme stakeholders?</p>	<p>e) Outside of the direct stakeholders, awareness of GEIPP appears very limited. Dissemination has been concentrated on the beneficiaries (companies and park managers) and on public entities with whom work has been conducted.</p>
<p><b>4. Programme implementation and adaptive management</b></p> <ul style="list-style-type: none"> <li>• efficiency</li> <li>• programme management</li> <li>• monitoring and evaluation</li> <li>• financial management</li> <li>• stakeholder engagement and communication</li> </ul>	
<p>a) Has the programme been implemented efficiently, cost-effectively and been able to adapt to any changing conditions thus far?</p> <p>b) Will all funds be expended by programme closure?</p> <p>c) To what extent have programme-level monitoring and evaluation systems, reporting, and communications supported the programme implementation?</p>	<p>a) Despite the country's political crisis and changes in authorities and public counterparts, the programme has made progress in both its results areas (Outcomes 1 and 2). Peru has a team of local professionals with experience and skills in UNIDO/GEIPP innovations, who have adapted to the changing conditions of the political environment.</p> <p>b) To date, the project has been able to expend the entire budget allocated for each period. At the beginning of June 2023, 49% of the total budget has been spent.</p> <p>c) Monitoring and evaluation have been carried out regularly and have allowed adjustments to be made to the original programming. An example of this is having expanded the focus of support to companies outside the parks (into the industrial zone of Lurín), given the lack of companies within the parks. One aspect that has been weaker is</p>

communication with some stakeholders - including municipalities, departmental governments, academia and non-governmental organisations.

▪ Likelihood of transformative change / sustainability

a) What are the risks that are likely to affect the continuation and expansion of programme results?

b) Has the programme put in place mechanisms to ensure sustainability after its completion (in terms of financial, legal, institutional, socio-economic instruments, frameworks or processes)?

c) Are the programme's successful aspects being transferred to appropriate parties, potential future

a) Political instability in the country leads to a high turnover of authorities and government counterpart professionals. The country's economic uncertainty can affect the movement of companies to industrial parks, affecting their occupancy rates and thus the positive impact of industrial symbiosis or synergy of by-products.

b) The Programme has installed the concepts of sustainable parks in the regulatory framework and declared them "of national interest". This is a valuable step in the consolidation of the EIPs. The programme has only been implemented for a short time and has not yet had an impact on financial, institutional and socio-economic processes.

c) Importance has been given to capacity building in the supply of service providers, park managers and companies that inhabit the parks; no transfer of knowledge or competencies has been observed in terms of stakeholders who could continue or replicate this programme in the absence of UNIDO.

beneficiaries, and others who could learn from the programme and potentially replicate and/or scale it up in the future?

#### 5. Lessons learnt all evaluation criteria

a) What are key lessons learned from country level interventions, including good practices?

c) What lessons can be drawn from the more and less successful practices in designing, implementing and managing the programme?

Key lessons: a) and c).

- The most valued aspect is the inclusion of public and private parks in the National System of Industrial Parks, which is largely attributed to GEIPP.
- Not all parks consider the EIP's contribution in the same way. Some parks show more consistency than others between their statements and their actions. Performance indicators for levels of park transformation should be developed and linked to the level of support each park receives from the Programme.
- The lack of critical mass in the parks, including a minimum number of operational companies in each park, makes it difficult for the project to show results (synergies, symbiosis). To address this situation, it could be enhanced through communication, in particular by having a narrative that provides more accurate information on costs and benefits of an eco-industrial park; this same action helps to raise the priority of the issue and to meet the challenge of sustainability for company executives; the condition of "national relevance" in Peru can support the promotion of EIP and a clearer value offer.
  - An alternative way to approach the Programme when there is an insufficient number of companies in the parks, could be to consider intervening in the industrial zones (similar to the case of Lurín), but including some form of management unit financed by the Programme, comparable to the administration of the industrial parks.
- The Programme should consider the two possible approaches: brownfield and greenfield. The condition of the parks in Peru is more similar to greenfield.
- The indicators that have been used in the Programme do not necessarily point to the fulfilment of the objectives. For example, the "number of norms" that are developed in the legal framework in relation to eco-industrial parks does not predict what effects these might have. The indicator would be better designed to reflect the quality or impact of the intervention – e.g., at what level will the norm operate and is it widely regarded as suitable in the light of capacities to meet it?

b) What aspects of the overall GEIPP have been more and which less successful?

It is necessary to define goals and indicators that are culturally appropriate and that make it possible to measure progress towards the fulfilment of realistic goals and objectives.

- Favours relationships between like-minded countries (e.g., Peru and Colombia) provides a special learning opportunity. When idiosyncratic or cultural factors are similar, experiences are more likely to be replicable, which ultimately allows lessons learned in one country to be easily assimilated in the other.
- Regarding the loss of benefits for companies participating in the Programme that are located in industrial areas (outside industrial parks), this could be corrected if the Programme were to include management units in charge of articulating and coordinating services for these companies, with the aim of facilitating symbiosis between these companies and promoting joint investments in resource efficiency (water, energy).

b) The greatest success has been concentrated in Outcome 1: i.e., public policies and regulations. The least successful has been the search for symbiosis or synergies between companies.

## 5.9 Overview of Country SWOT analysis: Peru

Implementation Area	Strengths	Weaknesses	Opportunities	Threats
<b>Component 2</b>  <i>Generate and disseminate knowledge globally.</i>	Global element provides relevant information (success stories), methodologies and intervention tools.	Component 2 does not give guidance on how to deal with the particularities of each country.  So far has been only one opportunity for all		

	interaction between Peru and Colombia has been constant and is considered very valuable.	participating countries to come together for interaction.		
<b>Component 1 Outcome 1</b>  <i>Incentivise and mainstream EIP in country</i>	<p>Managed to include private parks as part of the legal framework.</p> <p>Parks are included as "nationally relevant" in industrial policy.</p> <p>The Programme has had an impact on environmental policy: today companies belonging to the EIPs have a fast track.</p> <p>EIP has been incorporated into the National System of Industrial Parks. (Supreme Decree N°15-2021-PRODUCE)</p> <p>Collaboration with the government has been very good, with open channels of</p>	<p>Not yet fully owned by the country, by the authorities</p> <p>GEIPP performance indicators refer to outputs that are not necessarily linked to outcomes.</p> <p>Outside of the direct stakeholders, awareness of GEIPP appears very limited</p> <p>Political uncertainty has hampered Programme continuity.</p>	<p>Favoring relationships between like-minded countries (e.g., Peru and Colombia) provides a special learning opportunity.</p>	<p>No transfer of knowledge or competencies has been observed in terms of stakeholders who could continue or replicate this programme in the absence of UNIDO.</p>

	<p>communication and explicit collaborative work.</p> <p>Peru has a team of local professionals with experience and skills in UNIDO/GEIPP innovations</p> <p>The greatest success has been concentrated in Outcome 1: i.e., public policies and regulations.</p>			
<p><b>Component 1 Outcome 2</b></p> <p>Identify and implement EIP opportunities</p>		<p>The national economic situation has reduced the capacity of companies to commit to participating in EIPs</p> <p>Participating parks have a low level of business occupancy and therefore often show many characteristics of greenfield sites, whilst project targets brownfield sites.</p>	<p>Performance indicators for levels of <i>park transformation</i> should be developed and linked to the level of support each park receives from the Programme</p> <p>An alternative way to approach the Programme when there is an insufficient number of companies in the parks, could be to consider</p>	<p>No transfer of knowledge or competencies has been observed in terms of stakeholders who could continue or replicate this programme in the absence of UNIDO.</p>

		<p>Social considerations have been largely absent</p> <p>Gender focus mainly limited to participation of women in training courses</p> <p>There is no systematic plan to incorporate positive gender focussed measures in such areas as hiring of local personnel, local suppliers or local distributors, nor are there relevant indicators,</p> <p>Little leadership on the individual EIPs, which could promote synergies or industrial symbiosis</p> <p>No on-Park promoter of dialogue between companies to contribute towards</p>	<p>intervening in the industrial zones (similar to the case of Lurín), but including some form of management unit financed by the Programme, comparable to the administration of the industrial parks.</p> <p>The Programme should consider the two possible approaches: brownfield and greenfield. The condition of the parks in Peru is mainly similar to greenfield.</p> <p>It is necessary to define goals and indicators that are culturally appropriate and that make it possible to measure progress towards the fulfilment of realistic goals and objectives.</p>	
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		<p>sustainable approaches</p> <p>Economies of scale are reduced in projects that require critical mass (e.g., waste recovery), since parks are often not fully tenanted</p> <p>GEIPP in Peru has not yet developed far beyond a set of individual site-specific projects, with little programme-wide identity.</p> <p>The least successful project element has been the search for symbiosis or synergies between companies.</p>		
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### 5.10 Terminal Evaluation Of GEIPP - Peru. Stakeholder Engagement Meetings (17<sup>th</sup> – 21<sup>st</sup> April 2023)

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	Name & Surname	Organisation	Portfolio	E-mail Address	Meeting set up
<b>Public sector (Directorate of Policies and Regulatory Analysis of the Ministry of Production) and INDUPARK industrial park. Date: 17-04-2023</b>					
1	Carlos Alberto González	PRODUCE	General Director	cgonzalez@produce.gob.pe	In person
2	Luis Antonio García Díaz	PRODUCE	Policy Director	lgarciad@produce.gob.pe	In person
3	Jean Pierre Deleplanque	PRODUCE	Advisor Directorate General for Policy and Regulatory Analysis	<a href="mailto:dgpar_temp14@produce.gob.pe">dgpar_temp14@produce.gob.pe</a>	In person
4	Mónica Rivera	INDUPARK	Deputy General Manager	<a href="mailto:monica.rivera@indupark.com.pe">monica.rivera@indupark.com.pe</a>	In person
<b>Visit to La Chilca sector, industrial parks Sector 62 and La Chutana; companies. Date: 18-04-2023</b>					
1	Steffanny Valverde	Sector 62	Project Manager	<a href="mailto:svalverde@pacificdf.com.pe">svalverde@pacificdf.com.pe</a>	In person
2	Gisela Flores	Sector 62	Business Manager	<a href="mailto:gflores@pacificdf.com.pe">gflores@pacificdf.com.pe</a>	In person
3	Jair Ballman	Globalplast	General Manager	<a href="mailto:Jair.balman@globalplast.com.pe">Jair.balman@globalplast.com.pe</a>	In person
4	Edward Guerrero	Globalplast	Plant Manager	<a href="mailto:Edward.guerrero@globalplast.com.pe">Edward.guerrero@globalplast.com.pe</a>	In person
5	Franco Repetto	Flink	CO Founder & CEO	<a href="mailto:franco@flink.pe">franco@flink.pe</a>	In person
6	Julio Grimani	PRECOR	Plant Manager	<a href="mailto:Julio.grimani@precor.com.pe">Julio.grimani@precor.com.pe</a>	In person
7	Robert Sobrevilla	PRECOR	Environment Specialist	<a href="mailto:robert.sobrevilla@precor.com.pe">robert.sobrevilla@precor.com.pe</a>	In person
<b>Lurín Industrial Zone Date: 19-04-2023</b>					
1	Rocío Lockett	METAX	Project and Development Manager	<a href="mailto:rlockett@metaxsac.com">rlockett@metaxsac.com</a>	In person

2	José Baylon	Archroma	Operation Manager	<a href="mailto:jose.baylon@archroma.com">jose.baylon@archroma.com</a>	In person
4	Drago Bozovich	BOZOVICH	Chairman of the Board	<a href="mailto:drago@bozovich.com">drago@bozovich.com</a>	In person
5	Pamela Bravo	SECO	Programme Officer	<a href="tel:+5112640305">(+51 1) 264 03 05</a>	In person
<b>Public sector (PRODUCE) and private sector (Cámaras de Comercio de Lima y de La Chilca, Sociedad Nacional de Industria). Date: 20-04-2023</b>					
1	Javier Dávila	PRODUCE	Deputy Minister	<a href="mailto:mjimenezd@produce.gob.pe">mjimenezd@produce.gob.pe</a>	In person
2	Thomas Duncan	CCL	Chairman of the Sustainability Commission	<a href="mailto:thomasduncank@gmail.com">thomasduncank@gmail.com</a>	In person
3	Mónica Rivera	Cámara Comercio La Chilca	President of the La Chilca Chamber of Commerce	<a href="mailto:monica.rivera@indupark.com.pe">monica.rivera@indupark.com.pe</a>	In person
4	Carlos García	SNI	General Manager, National Society of Industry	<a href="mailto:cgarciaj@sni.org.pe">cgarciaj@sni.org.pe</a>	In person
5	María Isabel Valle	PRODUCE (DGAA)	Director General Industry Environmental Affairs	<a href="mailto:mvalle@produce.gob.pe">mvalle@produce.gob.pe</a>	In person
6	Edson Espinoza	PRODUCE (DGAA)	Director of Environmental Management at the Directorate General of Environmental Affairs	<a href="mailto:eespinoza@produce.gob.pe">eespinoza@produce.gob.pe</a>	In person
7	Richard Alca	PRODUCE (DGAA)	Environmental Advisor to the Directorate General for Environmental Affairs	<a href="mailto:ralca@produce.gob.pe">ralca@produce.gob.pe</a>	In person
<b>Public Sector of National Programme for Productive Diversification of the Ministry of Production (PNDP), Ministry of the Environment (MINAM) and National Coordinator UNIDO.: 21-04-2023</b>					
1	Carlos Raffo	PRODUCE (PNDP)	PNDP Executive Coordinator	<a href="mailto:craffo@produce.gob.pe">craffo@produce.gob.pe</a>	In person
2	Giovanna Torres	PRODUCE (PNDP)	Responsible for PNDP's Legal Advice Area	<a href="mailto:gtorresr@produce.gob.pe">gtorresr@produce.gob.pe</a>	In person

3	Miguel Vassallo	<i>PRODUCE (PNDP)</i>	PNDP Project Management Coordinator	<a href="mailto:mvassallo@produce.gob.pe">mvassallo@produce.gob.pe</a>	In person
4	Jorge Gutierrez	<i>PRODUCE (PNDP)</i>	PNDP Technical Professional	<a href="mailto:pndp_temp07@produce.gob.pe">pndp_temp07@produce.gob.pe</a>	In person
5	César Falcón	<i>PRODUCE (PNDP)</i>	PNDP PIR Specialist	<a href="mailto:pndp_temp138@produce.gob.pe">pndp_temp138@produce.gob.pe</a>	In person
6	Luis Guillen	<i>MINAM</i>	General Director of Environmental Quality	<a href="mailto:lguillen@minam.gob.pe">lguillen@minam.gob.pe</a>	In person
7	Jorge Urbina	<i>UNIDO</i>	National Coordinator GEIPP	<a href="mailto:J.URBINAVERGAS@unido.org">J.URBINAVERGAS@unido.org</a>	In person

Note: Two additional remote meetings with the GEIPP UNIDO National Coordinator were included.

## Annex 6. Overview and Mission Findings for GEIPP South Africa

### 6.1 Project Details

<b>Project number:</b>	200019
<b>Project title:</b>	Global Eco-Industrial Parks Programme - South Africa: Country level intervention
<b>Thematic area code</b>	Energy and Environment
<b>Starting date:</b>	October 2020
<b>Duration:</b>	3 years
<b>Project site:</b>	Republic of South Africa
<b>Government Co-ordinating agency:</b>	Department of Trade, Industry and Competition
<b>Main counterparts:</b>	Department of Trade, Industry and Competition
<b>Other counterparts</b>	Department of Environmental Affairs, Forestry and Fisheries; Provincial Development Agencies, Selected Industrial parks and tenant companies
<b>Executing agency/ cooperating agency:</b>	UNIDO
<b>Project Inputs:</b>	
- SECO inputs:	1,280,518 CHF
- Support costs (13%):	166,467 CHF
- Counterpart inputs:	In-kind contributions to CSIR and participating parks through Industrial Parks Revitalization Programme and the Green Industries Programme covering also pre-feasibility studies for selected EIP priority action at Ekandustria Industrial Park.
- Grand Total:	<b>1,446,985 CHF</b>

### 6.2 Role of Industrial Development in the Economy and Environment of South Africa<sup>43</sup>

South Africa is an upper-middle income country with a population of around 58 million. It had a GDP per capita (PPP) of \$13,687 in 2018. South Africa has experienced limited economic growth in recent years as a result of global dynamics, policy uncertainty, alleged

<sup>43</sup> Contextual information in this report section is derived from: UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION. *Global Eco-Industrial Parks Programme - South Africa: Country level intervention Project Document. Revised. (Undated)*

corruption, labour and social aspects, and unstable electricity supply, with an associated decline in manufacturing value added in the country.

The South African economy is reasonably diversified. Services account for 61% of GDP, while the share of GDP from Industry is 25%. Major sectors are mining (Platinum, Gold, Chromium); automobile assembly; metalworking and machinery. Manufacturing is contributing some 12% of the total GDP and 58% of the exports in 2018. South Africa's Industries employ an estimated 23% of South Africa's workforce. The manufacturing activities are predominantly concentrated in the metropolitan areas of three provinces, namely Gauteng, Western Cape and Kwa-Zulu Natal, leaving many other parts of the country with low manufacturing capacity.

Industrial parks and zones play a major role in the production sector of South Africa, both in terms of the number of businesses involved and the employment generated. Government, through a range of public sector institutions, aims to establish industrial parks to serve a broad mandate. In particular, it intends to reach companies, which cannot afford high private sector rentals, by offering them the opportunity to have space to operate from at premises with subsidized rates. This drove the earlier creation of Industrial Development Zones (IDZ).

The private sector has also established industrial parks, with the aim of generating revenue from market-price rentals paid by tenants. This has resulted in a high number of (smaller) privately-owned Industrial Parks (about 300). There are also about 100 municipality-owned Industrial Parks across the country.

Over time, it was found that the government-sponsored Industrial Development Zones (IDZs) experienced substantial shortcomings and this approach was superseded by that of Special Economic Zones. These were mandated to attract Foreign Direct Investment (FDI) and enhance exports as well as to integrate industrial production into the Local Economic Development (LED) process.

### Definitions of categories of industrial locations

Category	Managing entity	Specific features / Definition
Industrial Parks (IP)	Private as well as Government funded	An industrial park as defined in South Africa generally exists to support, manage and administer industrial activities within a specified area in order to facilitate socioeconomic benefits for the surrounding area, its tenants and the country as a whole.
Industrial Development Zone (IDZ)	National Government	An Industrial Development Zone (IDZ) is a purpose-built industrial estate linked to an international seaport or airport and which is capable of leveraging fixed direct investments in value-added and export-orientated manufacturing industries. Most IDZs have transitioned to become Special Economic Zones (SEZs) or are in the process of doing so.
Special Economic Zone (SEZ)	Government owned	Special Economic Zones (SEZs) are geographically designated areas set aside for specifically targeted economic activities. The Special Economic Zones Act 16 of 2014 provides for the designation, promotion, development, operation and management of SEZs.

Environmental pollution has adversely affected the health of communities living near some industrial parks in South Africa. The environmental management of IPs is currently weak and IP development often shows limited awareness of environmental issues and of regulatory compliance requirements. Although South Africa is a signatory to the Paris Agreement, the necessary framework, systems and processes are not yet fully in place to measure and manage the usage of energy and water, as well as the production of waste. However, national efforts are underway to achieve this.

As a water scarce country with national average rainfall of less than 500 mm, South Africa is increasingly sensitive to climate change and associated water scarcity. This is reflected in the National Water and Sanitation Masterplan, which projects a national water shortage of 17% by 2030 if current water use patterns are not addressed. It is therefore imperative that water planning, use and treatment receive urgent attention in the country's industrial parks/zones. This is particularly so since mismanagement and inadequate infrastructure for the environmentally sound management of solid, recyclable and hazardous wastes are widespread across the nation's Industrial Parks.

### **6.3 The South Africa National Industrial Policies and the GEIPP Project**

The South African government has viewed Industrial Parks and Zones as important growth engines towards its strategic objectives of industrialisation, regional development and employment creation. It has therefore established various policies, frameworks and programmes specifically aimed at this sector.

#### *Policy on the Development of Special Economic Zones (2012) and SEZ Act (2014)*

The *Special Economic Zones* policy provides a framework for the development, operation and management of SEZs. It seeks to address some of the challenges of the earlier Industrial Development Zones (IDZ) Programme, which it superseded. Specifically, the SEZ programme seeks to:

- Expand strategic industrialisation focus to cover diverse regional development contexts and needs
- Provide a clear, predictable and systemic planning framework for the development of a wider array of SEZs to support industrial policy objectives, such as the Industrial Policy Action Plan
- Clarify and strengthen governance arrangements, expand the range and quality of support measures beyond provision of infrastructure
- Provide a predictable financing framework to enable long term planning.

#### *Industrial Park Revitalisation Programme (IPRP)*

The government introduced the above-mentioned Special Economic Zone (SEZ) programme to revitalize the Industrial Development Zones (IDZs), most of which have now transitioned to this new status. However, this left the many remaining Industrial Parks (particularly state-owned parks) across the country to face deteriorating operating and trading conditions, which often threatened their viability. To address this challenge, government launched the Industrial Park Revitalisation Programme (IPRP). Under this, Industrial Parks that were established prior to 2018, are eligible for revitalisation assistance to allow them to serve as catalysts for broader economic and industrial development in their host regions (townships and rural areas).

The Industrial Park Revitalisation Programme's (IPRP's) objectives include:

- removing barriers related to poor infrastructure
- improving market access and supporting individual firm level competitiveness
- assisting regions to build their industrial capacity
- strengthening and developing strategic industrial capabilities
- developing sustainable industrial clusters on the back of the old industrial assets and estates.

The IPRP consists of a phased approach, including (1) Security infrastructure upgrade; (2) Engineering designs and construction of shared infrastructure and main utilities; (3) Upgrading electricity infrastructure; (4) Compliance to regulatory requirements – social, economic and environmental; and (5) Renewable energy initiatives. To date 514 million South African Rand (ZAR) has been spent and an additional work program with a budget of ZAR 600 million is being implemented. A presidential stimulus package with a potential budget of additional ZAR 3 billion has been earmarked for the programme. The later phases of the programme have been adjusted to incorporate EIP concepts.

This national government programme (IPRP) started with 11 Industrial Parks and now includes 27 IPs and 15 SEZs throughout South Africa<sup>44</sup>. It is envisaged that, eventually, all Industrial Parks within South Africa (this includes the ones operated by local governments as well as privately owned IPs) will operate under the Industrial Parks Revitalisation Programme and its legal framework.

The policies on the IPs and SEZs stress the importance of understanding that SEZs and Industrial Parks should not stand in competition with each other, but rather seek to collaborate and support each other in providing the necessary platform for their tenants to be globally competitive. The interaction and interplay between Industrial Parks and SEZs should therefore be based on a long-term view that supports and facilitates best practices, supports growth and as a result leads to an increase in employment opportunities and a decrease in poverty and inequality, working collectively for the country.

#### *Vision 2030 and the Green Economy*

South Africa is moving to adopt green economy strategies and has put in place many programmes and policy frameworks in recent years, to translate its National Development Plan (“Vision 2030”) into action. These programmes aim to promote energy efficiency, green transport, sustainable housing and climate resilient agriculture<sup>45</sup>. The integration of the Green Economy Agenda underlies the intention to transform Industrial Parks into Eco Industrial Parks.

Alignment between various policy and support instruments to incentivise industry and consumers, and particularly alignment between industrial policy and the green economy agenda are of key importance to the nation's efforts at GHG mitigation and to support new green sectors for achieving a low-carbon development path. This transition to a low-carbon economy is seen not only as an environmental issue, but also as a driver of socio-economic change, with implications for economic policy, company competitiveness and long-term development sustainability. Interventions supported by the Industrial Park Revitalisation Programme are therefore consistent with the work of DTIC's Green Industries Unit and also

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<sup>44</sup> Source: Eco-Industrial Park (EIP) Baseline Assessment Report for South Africa. NCPC, DTIC and UNIDO (2019).

<sup>45</sup> <https://www.gov.za/issues/national-development-plan-2030>

relate to the recently introduced Carbon Tax, energy management plans, waste management plans, and other initiatives driven by the Department of Environment, Forestry and Fisheries (DEFF).

### **Renewable and Cleaner Production and the EIP Concept**

Over the past decade, there have been several initiatives taken by a range of actors in promoting Resource Efficient and Cleaner Production (RECP) practices as well as supporting EIP implementation.

UNIDO started to promote cleaner production activities in South Africa in the 1990s. A key player in this field has been the National Cleaner Production Centre of South Africa (NCPC-SA), which was launched in 2002 with UNIDO support and is co-located at the Council for Scientific and Industrial Research (CSIR). Beginning in 2010, a 4-year Industrial Energy Efficiency (IEE) Project was hosted by NCPC and later absorbed into its continuing activities. This programme was supported by national and international partners, including UNIDO, financed by the Swiss Secretariat for Economic Affairs (SECO), the UK Department of International Development (DfID) and the national Department of Trade, Industry and Competition (DTIC) and Department of Energy (DoE). Its goal was to demonstrate the positive impact of energy management on reducing greenhouse gas emissions and to demonstrate the effectiveness and financial benefits of in-plant energy management.

The NCPC's strategic objectives include:

- Awareness raising, advocacy and demonstration of the benefits of Resource Efficient and Cleaner Production (RECP)
- Technical support to industry through advisory services for the application of RECP methodologies and tools
- Facilitating implementation of RECP in industry
- Capacity building and development of RECP skills.

NCPC-SA provides funded programmes to assist in the implementation of RECP programmes for industrial sectors. Direct support for parks and their tenants includes technical assistance for the development of environmental management plans, energy management plans for the park management entity and for tenants, the integration of green procurement, resource efficiency, cleaner production, waste management, and energy efficiency into operations.

UNIDO and NCPC-SA have been collaborating since 2017 on EIP work in South Africa as part of the UNIDO's Global RECP Programme. Two Industrial Parks with different management models, namely Epping Industria, and East London Industrial Development Zone (ELIDZ), which is now classified as a Special Economic Zone, were supported under this programme. In addition to undertaking RECP assessments and capacity building activities for park management, significant efforts were made to identify and evaluate opportunities for industrial synergies.

UNIDO and German Development Cooperation (GIZ) collaborated with the NCPC-SA and DTIC from October to December 2019 on a GIZ funded assignment to assess three industrial parks: Phuthaditjhaba, Rosslyn Automotive Supplier Park, and East London IDZ against the International EIP Framework and to assess potential EIP investments. The assessments of these three parks and their tenant companies identified opportunities for investments to increase the sustainability of their operations and contribute towards a positive

investment climate. The work focuses on longer-term infrastructure options, mid-term technology options as well as short-term “good housing” opportunities.

A range of other activities and partnerships in South Africa overlap with the UNIDO EIP work. The World Bank is implementing a Cities Support Program (CSP), while the IFC supports both “Agri-processing Resource Efficiency (APRE)” and the Africa Cities Platform. The latter aims to help bridge the financing gap for urban infrastructure. Since Industrial Parks frequently intend to cooperate with surrounding communities in such areas as water supply, effluent treatment and waste processing in a symbiotic way, it is hoped that the Africa Cities Platform can facilitate the establishment of urban-industrial synergies.

GreenCape is a sector development agency, working to boost the green economy in South Africa. The Western Cape Industrial Symbiosis Programme (WISP) works with industry to increase resource efficiency and reduce waste by facilitating links towards a circular economy. GreenCape and City of Cape Town’s Resilience Department are collaborating on opportunities for transforming two target industrial parks into EIPs (Atlantis and Montague Gardens). In order for the GEIPP South Africa Country Level Intervention to capitalize on the work of Green Cape and to assure the creation of synergies, UNIDO has accepted DTIC’s proposal to engage GreenCape as an executing entity.

The Council for Scientific and Industrial Research (CSIR) Enterprise Programme focusses on the economic development of enterprises including opportunity identification, identify and packaging of development opportunities, sectoral strategies, incubation, SMME support and community development. Since the National Cleaner Production Centre is the Executing Agency for GEIPP, it is anticipated that synergies will be created with the CSIR Enterprise Program, which operates from the same location.

## **6.4 Parks engaged with the GEIPP project in South Africa**

The principles for selection of participating IPs are described in the country project document (P30) as follows: “To create maximum impact with the GEIPP South Africa Country Level Intervention and to remain focused while bearing in mind the available financial resources, the recommendation is to select two parks for in-depth technical assistance and one park for less intensive technical assistance. However, other parks will be included to the extent possible as recipients of ‘soft’ assistance - i.e., through trainings and awareness raising on EIP topics of common interest”.

The project document recommends selection of one “model” Industrial Park/ Zone with a high current performance against the International EIP Framework, combined with two Industrial Parks, which have high improvement potential, giving the following participants:

- East London Industrial Development Zone (ELIDZ) for technical assistance through the GEIPP South Africa Country Level Intervention as a “model” Industrial Park/ Zone
- Phuthaditjhaba IP as the first choice of Industrial Park for in-depth assistance
- Ekandustria as the park with high improvement potential to be supported with less intensive technical assistance.

The selection of the parks also was influenced by the intention of assisting parks with predominantly SMEs. “In this regard it is important to consider the dynamics when a larger

number of typically less technologically advanced and financially constrained companies are brought together for advancing EIP interventions”. (P30)

## 6.5 Justification and Beneficiaries of the Project

The project document for the South African component of GEIPP maintains that: “The development of EIPs and transformation of the existing IPs in South Africa in accordance with the principles of Circular Economy and Resource Efficient & Cleaner Production will help to use the potential of Industrial Parks under decentralized management more effectively, contribute to a cleaner environment, and support the creation of added value and new jobs. The implementation of this objective is designed to enhance UNIDO’s support to the Government of South Africa in fostering competitive and inclusive industry”.<sup>46</sup>

The development objective of the project is in line with that of GEIPP, to demonstrate the viability and benefits of Eco-Industrial Park approaches in scaling up resource productivity and improving economic, environmental and social performances of businesses, leading to the contribution to inclusive and sustainable industrial development in South Africa.

The stakeholders of the South Africa GEIPP project fall under the following categories:

- Government, including provincial government, and regulatory entities
- Industrial Park/Zone operators and resident firms
- Other stakeholders (such as international development organizations, national organizations). This also includes the local communities where the Industrial Parks are located.

Macro-level beneficiaries include:

- Department of Trade, Industry and Competition
- Department of Environmental Affairs, Forestry and Fisheries
- Provincial Governments.

Meso-level beneficiaries:

- Provincial Development Agencies
- South Africa National Cleaner Production Centre (NCPC)
- Green industrial development organizations.

Micro-level beneficiaries:

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<sup>46</sup> UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION. Global Eco-Industrial Parks Programme - South Africa: Country level intervention Project Document. Revised. (P24) (Undated).

- Public and private IPs/SEZs and their resident firms selected for the South Africa GEIPP implementation.

## **6.6 Introduction to the three participating EIPs**

As noted in Annex 6, Section 6.4 above, the South Africa project aimed to select two parks for in-depth technical assistance and one park for less intensive technical assistance. However, other parks were to be included to the extent possible as recipients of 'soft' assistance - i.e., through trainings and awareness raising on EIP topics of common interest. Key information on the three parks participating is provided in Table 6.6.1 below.

GEIPP utilizes a highly detailed and complex selection process to determine which Industrial Parks best fit the Programme's International Framework. In view of the complex industrial landscape of South Africa, the selection of 3 parks out of several hundred potential candidates (including private sector parks) is likely to be somewhat qualitative and the elaborate process seems more useful in terms of describing the GEIPP global approach than in South Africa itself.

Table 6.6.1: Key Features of the three principal parks engaged in the South Africa GEIPP

BASIC INFORMATION	EAST LONDON (Eastern Cape)	PHUTHADITJHABA <sup>47</sup> (Free State)	EKANDUSTRIA <sup>48</sup> IP (Gauteng)
<b>Name of Park Management/Developer</b>	ELIDZ SOC	Free State Development Corporation	Economic Growth Agency (MEGA)
<b>Park Management Model Mandate</b>	The ELIDZ is operated by the ELIDZ SOC Limited under authorisation of a Zone Operating Permit issued by National Government. The Board of Directors conducts the affairs of the entity in accordance to generally accepted corporate practices and are committed to uphold the principles of the Code of Corporate Practices and Conduct, set out in the King III Report.	Free State Development Corporation (FDC) acts as the Industrial Park management entity	Mpumalanga Economic Growth (MEGA). Companies pay rent on a monthly basis. Operative costs are added to monthly rental cost (5-6% of rental fees). Companies pay park admin fees as part of their rental fees and municipality deposits. Admin fee is 500 ZAR one off payment as part of the lease agreement.
<b>Park Ownership (e.g., National, Foreign Direct Investment)</b>	The ELIDZ is a state-owned corporation owned by provincial government, i.e., the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) 74% and Buffalo City Metropolitan Municipality (26%). It is funded by the Department of Trade and Industry (DTIC) and DEDEAT, but it also generates its own income streams from the utilisation of the IDZ's property assets and associated zones services under its management control	Phuthaditjaba IP is owned and managed by the Free State Development Corporation (FDC), which is the official agency responsible for promoting economic development in the Free State Province.  for	Provincial government owned park
<b>Total land area (ha)</b>	236 ha	250 ha	Total area Ekandustria North = 455 ha Ekandustria North is the area controlled by MEGA, and therefore the focus of this EIP assessment. Ekandustria South is privately owned land, not under the control of MEGA. Total area Ekandustria South is less than Ekandustria North.
<b>Type of industrial park (e.g., brownfield or greenfield):</b>	Brownfield	Brownfield - approximately 75% occupancy rate	Brownfield. 30% of total land area is developed with buildings. 104 factory buildings in total, about 50% of buildings are used.
<b>Key industrial sector(s) in park</b>	Products currently manufactured at the ELIDZ include automotive components, fuels from recycled plastics, dairy products, solar panels, plastic products, fabricated steel products, and electronics.	Tenant pool of companies comprising garment and textile factories, plastic products manufacturers, construction and quarrying companies, chemical	Textile dyeing, Textile Cut Make Trim (CMT), Shoe production, Pet food production, Pie bakery, Polystyrene products manufacturing, Construction

<sup>47</sup> Even within official project documents, there are several variations of the spelling of Phuthaditjhaba and this report has not attempted to ensure consistency throughout.

<sup>48</sup> Across country project and GEIPP documentation, there is some inconsistency in the spelling of this park

		processing companies, agro-processing companies, pulp and paper factories, and snack producing companies.	materials, Automotive repair, Pallet recycling, Refractory and ceramics, mining explosion materials, Abattoir, Plastic recycling, Transport and logistics, Retail businesses and shops
<b>Number of companies in park</b>	24 industrial companies.  As of November 2019, comprised of 23 manufacturing operations, 7 freight companies, an industrial recycling operation, a conference centre with a canteen, one free-standing office complex, and a Science and Technology Park (STP).	296 companies	44 industrial companies are currently operating in Ekandustria in big factories. 18 SMMEs operating in smaller facilities. Total 62 companies in Ekandustria.  Some companies occupy multiple buildings. About 50-55 factory buildings are utilised by companies
<b>Number or percentage of small and medium sized enterprises (SMEs) (companies with less than 250 employees)</b>	Less than 30%	>80% of companies are SMEs  Small and medium sized companies (SMEs) typically occupy lots less than 500 m2, while large companies in the park typically occupy more than 500 m2.	50% of total companies currently operating in Ekandustria are SMEs. 18 SMMEs operating in the park.
<b>Total number of workers in park</b>	Total of 4,666 jobs in 2018/19  Number of reported direct manufacturing and service jobs in existence as at financial year end by the ELIDZ investors, ELIDZ Operator and its service providers.	A total of about 7100 workers are employed by companies in Phuthaditjhaba Industrial Park including FDC employees	Up to 2520 workers in 62 companies. 9 property team members are stationed at MEGA Ekandustria Office
<b>List of key existing infrastructures and utilities</b>	Water used by ELIDZ companies is supplied through the Buffalo City municipality water supply system.  Industrial wastewater generated by IDZ tenants is treated by themselves to the required local standards before it is channelled back into the municipal water system. No centralised WWTP yet in ELIDZ  Electricity used in ELIDZ is from main electricity network of ESKOM, so by default renewable energy proportion is low. ELIDZ has a small solar installation (18kW approx.).	Tenant companies utilize shared infrastructure and utility services, including facilities management (e.g., water and electricity supply), ICT services and centralised security services.	Water bulk supply is provided by local municipality to MEGA which then distributes the water to its tenant companies.  MEGA has a WWTP located in Ekandustria at the park, which treats industrial effluents. WWTP was originally designed for treating municipal effluents  Electrical network (e.g., mini substation, T3, 11kv, 132 kv substation). MEGA manages the electricity network which supplies power to the tenant companies in Ekandustria.  A local landfill site operated by MEGA has been closed due to compliance issues. This landfill was designed for municipal wastes, not for handling industrial and commercial wastes. Different landfills in the region are currently being used for waste disposal.

<p><b>Other activities on site</b></p>	<p>ELIDZ currently includes a conference centre with a canteen, one free-standing office complex, and a Science and Technology Park (STP). The STP hosts a water sample testing laboratory, artisan training academy, and several other office-based tenants. Park management also owns a three-dimensional (3D) printing facility, which uses a Makerspace Model. It allows for the exploration of new technologies, engages universities to be involved in research, while also generating revenue for the ELIDZ.</p>		
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### Key issues affecting the industrial park

<p><b>Strategic and priority opportunities and challenges for park, companies, and local community</b></p> <p><b>(Economic, environmental social and technical)</b></p>	<p>ELIDZ has a specific interest to transform itself into a smart industrial park. See details in ELIDZ EIP and smart solutions assessment report (Nov 2018). The ELIDZ has a signed project mandate describing the potential development of the park into a “Smart Park”,</p> <p>Based on the aspirations of the SA Government, the ELIDZ pursues the following as its Vision and Mission guiding the programmes and activities of the entity:</p> <p>Vision: World class Operator of a prestigious industrial complex where highly competitive organisations thrive on streamlined business benefits and stimulate sustainable regional economic growth.</p> <p>Mission: To provide investor solutions and to attract and develop strategic industries that strengthen South Africa’s global competitiveness through the development and operation of a thriving, specialized industrial complex.</p> <p>High-level Strategic Goals for the five-year term, 2015/16 –2019/20 are as follows:</p> <ul style="list-style-type: none"> <li>• Develop a strategic industrial complex;</li> <li>• Implement infrastructure delivery;</li> <li>• Attract strategic investment;</li> <li>• Provide a globally competitive location;</li> <li>• Build organisational capacity, resilience and excellence.</li> </ul>	<p>All organizations in South Africa are under pressure to increase jobs and expand their operations to meet the economic and job creation targets set by the government. The opportunity (and subsequent challenges) for FDC is to increase occupancy rate to 75% to 90% of built up area so as to create more jobs for the local community.</p> <p>The park is among the first seven parks selected to undergo the four phases of the Industrial Park Revitalization Programme (IPRP) of the department of Trade and Industry (the DTIC). To date the first phase of the IPRP has been completed to the value of R50 million, with three other phases to follow.</p> <p>The first phase included upgrading of the security infrastructure including fencing, street lighting, installation of boom gates, pedestrian gates, installation of CCTV cameras and control room, as well as the refurbishment of high mast lights. Phase 2 will deal with engineering designs and construction of new and existing roads, bulk water supply and sewage</p>	<p><b>Economic:</b></p> <ul style="list-style-type: none"> <li>* Securing water and electricity supply to tenant companies at reasonable price</li> <li>* Attract new tenant companies to Ekandustria. Attracting new companies will be addressed by point above (securing water and electricity supply).</li> <li>* Need for Master Plan to guide strategic development of industrial park and guide transformation of Ekandustria into SEZ.</li> </ul> <p><b>Environmental:</b></p> <ul style="list-style-type: none"> <li>* Need to upgrade WWTP with pre-treatment facility so it can better handle industrial effluents. Current WWTP is built for municipal effluents, not for industrial effluents.</li> <li>* Rehabilitation of existing landfill owned/operated by MEGA. This landfill is currently closed because of compliance issues.</li> <li>* Both the WWTP and landfill sites were built originally for municipal purposes only.</li> </ul> <p><b>Social:</b></p> <ul style="list-style-type: none"> <li>* Dealing with high rates of unemployment within Region 7, in which Ekandustria is located.</li> </ul> <p><b>Technical:</b></p> <ul style="list-style-type: none"> <li>*Upgrading infrastructures (e.g., landfill, WWTP, electrical and water</li> </ul>
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		treatment plant and industrial effluent control. Phase 3 shall deal with upgrades of electricity infrastructure and building new top structures that are in line with the expansion programme of the industrial parks. Phase 4 shall deal with the development of sustainable industrial clusters in industrial parks.	reticulation system). Investment properties need to be upgraded. Most infrastructures were built in the 1980s
<b>Water scarcity in the region?</b>	South Africa is regarded as a water scarce country, and therefore securing sustainable water supply for the future is an opportunity for the ELIDZ.	Currently there are water shortages facing Phuthaditjhaba Industrial Park and the region as a whole. Some of the park tenants are intensive water users. There is an increasing pressure and continuous need for park tenant companies to use the available water more efficiently. The only dam that supplies water to the park and community is operating at very low levels (about 10% full) as a result of lack of rainfall and ongoing droughts.	Inconsistent quality and high price of water supplied from municipality is a key challenge.  Malla Dyeing is main water intensive company located in Ekandustria
<b>Water pollution is a problem in the region?</b>	Wastewater that goes into the ELIDZ sewer system is not measured separately at the tenants premises. Tenants are required to pre-treat their wastewater (if necessary). The sewage is screened at the municipal outfall station to remove paper and solids, which is bagged and landfilled at Berlin, East London. The remaining effluent goes to a marine outfall. There is no centralised WWTP in ELIDZ	The existing wastewater treatment plant (WWTP) located in the industrial park is not functioning.  According to the discussions with Free State Development Corporation (FDC), there are no substantial water pollution issues generated by the industrial park tenants. This has not yet been confirmed with quantitative and qualitative data measurements.	See earlier notes on WWTP upgrade
<b>Are many energy intensive companies located in park?</b>	(Section not completed), but likely to be several high energy use companies.	A number of high energy intensive companies are located in the park (most electricity use).	Major electricity consuming companies: Transpeco (plastics recycling), Sasol Nitro, Marly Tiles (Chinese company)
<b>Traffic congestion in the region?</b>	Traffic congestion in and around ELIDZ is not a significant issue	Traffic congestion in and around Phuthaditjhaba IP is not a significant issue	No major issue
<b>Atmospheric pollution (e.g., SO<sub>2</sub>, NO<sub>x</sub>)?</b>	Each company within ELIDZ is responsible to control its own air emissions according to regulated requirements. No significant issues of air pollution in the ELIDZ.	According to the discussions with Free State Development Corporation (FDC), there are no substantial air pollution issues generated by the industrial park tenants.	No major issue. Controlled

		This has not yet been not confirmed with quantitative and qualitative data measurements.	
<b>Overall reputation of industrial park by communities and government representatives?</b>	ELIDZ has an overall good reputation with nearby communities, although it also faces substantial security and vandalism issues.	The overall reputation of Phuthaditjhaba is medium to low, due to historical and ongoing environmental and social issues in Phuthaditjhaba IP	Ekandustria itself has good reputation As a government-owned industrial park, management and administration processes of Ekandustria IP can be a challenge to deal promptly with industrial park's issues and required decision making. All IP processes are centralised through MEGA, including budget and central supply chains which are often time consuming.

## 6.7 Review of the Park Selection Process

The three IPs selected for the South Africa project show good variation in their key characteristics, from the “model” park of East London to the “struggling” park in Phuthaditjhaba. However, the GEIPP global selection process appears to be more useful for suggesting a systematic approach across countries than for the country itself. The evaluation team considers it highly likely that the choice of “model” parks in South Africa is limited, while the pool of “struggling” parks is substantial (as indicated by the need for a national Revitalization Programme). Assuming this to be so, it is considered that East London virtually selected itself, while other struggling parks could have been selected instead of Phuthaditjhaba with little effect on the results of the programme. The complete omission at this stage of any of the 300+ private parks from the programme also raises questions about representativeness and coverage of the selection process.

Considering these reservations, the South Africa Park selection process seems effective, but doubts are raised concerning its efficiency and appropriateness for a very small country level project.

## 6.8 Key evaluation mission findings – South Africa

EVALUATION DIMENSIONS AND EVALUATION CRITERIA	EVALUATION FINDINGS
<p><b>INTENDED OUTCOMES</b></p> <ul style="list-style-type: none"> <li>• <b>OUTCOME 1:</b> EIP incentivized and mainstreamed in relevant policy and regulations leading to an increased role of EIP in environmental, industry and other relevant policies in South Africa</li> <li>• <b>OUTCOME 2:</b> EIP opportunities identified, and implementation started, with environmental (e.g., resource productivity) economic and social benefits achieved by enterprises confirmed.</li> </ul>	
<p><b>1: Programme Strategy design/relevance results framework (log frame)</b></p>	
<p><b>d) To what extent did the programme design remain relevant throughout implementation?</b></p> <p><b>e) How strong is the country commitment/ownership?</b></p>	<p>a) The design remains relevant – but is seen to have delivered few tangible benefits at park level to date.</p> <p>b) Country commitment is increasing from an initial low level. However, “ownership” is highly fragmented between many different institutions and tiers of the government system. Particularly in predominantly poor areas, ownership by government bodies (provinces, municipalities, development corporations) is severely limited by lack of finance for actual support.</p> <p>c) No major adaptations were reported by country-level stakeholders. However, GEIPP has become integrated into an increasing network of government, national and</p>

<p>f) Were any management adaptations needed to achieve expected results?</p> <p>d) What are major technical needs/demands from stakeholders at country level?</p>	<p>international stakeholders, which has required the implementation team at NCPC to have a particular focus on the programme's Outcome 1 contributions.</p> <p>d) For technical aspects, the programme is reported as responsive, through support to training programmes and provision of national or international consultants for specific issues. Needs and demands vary among different types of park and company as well as relevant Provincial and Municipal bodies. Stakeholders have also been brought together at major events, such as National EIP day and the National Industrial Parks Summit.</p>
<p>2. Progress towards results effectiveness</p>	
<p>e) To what extent have the expected outcomes and objectives of the programme been achieved?</p>	<p>a) <b>For Outcome 1, EIP incentivized and mainstreamed</b>, progress is recorded in terms of collaboration of a range of institutions at various levels of government, as well as international partners and, to a lesser extent, the private sector. National and regional support programmes for industrial development have become available, including a Parks Revitalization Programme. GEIPP is identified by national stakeholders as one of the key contributors to this heightened awareness, particularly of the importance of improved environmental management of industrial parks (and of industry outside of parks). In time, this increased awareness and the programmes it has catalysed might lead to EIP mainstreaming, but this is some way off. This particularly true in poor areas of the country, where the income base within and outside the parks is often precarious.</p> <p><b>For Outcome 2, EIP opportunities identified and implementation started, with environmental (e.g., resource productivity) economic and social benefits achieved by enterprises confirmed.</b> Progress is highly variable. The EIP strategy of choosing IPs at different levels of development has proved worthwhile. It has shown that (some) progress towards EIP standards has been made in the relatively developed East London Industrial Development Zone, while the least developed park at Phuthaditjaba shows minimal progress. On the contrary, its three key sets of stakeholders (park management, Municipality and companies) all stated that they</p>

f) **Is GEIPP on track to achieve its objectives?**

have seen no benefits from participating in the programme, while it has redirected their time to unproductive meetings. The “mid-level” park of Ekandustria was not visited but has faced some start up challenges. For example, it took NCPC and DTIC 18 months to establish an industry group of five companies that had expressed an interest in RECP and associated industrial sustainability issues<sup>49</sup>.

- b) The extent to which GEIPP South Africa is on track to achieve its objectives relates to its log frame and, in the longer-term context, to its Theory of Change. Broadly speaking, it is clear that the three-year programme support time scale was far too short to expect decisive progress towards mainstreaming of EIP approaches and even more so to record substantial and tangible benefits in environmental, economic or social spheres.

**For Outcome 1**, progress is clear and verifiable, although there is still a long way to go before mainstreaming of EIP concepts and practices might be confirmed. In this area, the programme is widely cited as having a catalytic and enabling role, providing a foundation and impetus for a broad range of national and international partners to begin to address the substantial challenges facing industrial parks in particular and industry in general in the complex development landscape of South Africa.

**For Outcome 2**, the programme has shown that there is not “one track” towards progress. Wealthy companies, particularly international investors, are already “pushed and pulled” by market forces to demonstrate movement towards “green” operations and to show some evidence of being ethical and community responsive producers. These requirements make them amenable to EIP principles and standards, while their corporate profitability gives them resources to implement appropriate actions. Support through the GEIPP has in some cases identified opportunities for operational improvements, of which these companies had not previously been aware. Some of these were straightforward and low-cost and have been implemented. Others require more substantial expenditure and are often still at feasibility stage. The companies concerned could in principle pay for such improvements, since they are profitable enterprises. These companies are also able to pay sufficient rent to help site management bodies to promote environmental and socially productive approaches on a site-wide basis.

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<sup>49</sup> Bernd Oellermann, NCPC, personal communication.

g) **How successful are the new elements of the GEIPP, the collaboration with the park management and the work at the policy level?**

At the other end of the site hierarchy in terms of resources, Phuthaditjaba can be seen as struggling for survival. Among its key challenges are:

- crippling power cuts (including one period of 21 days)
- unreliable water supply
- inadequate waste management
- crumbling road system
- visibility of unused derelict and semi-derelict factory units
- location in area of very high poverty, contributing to crime, vandalism and overall poor environmental management
- rent arrears among existing tenants, high loss of tenants and lack of incentives to attract new tenants
- lack of resources among all key stakeholders – Municipality, Development Corporation and tenant companies. Ideas and initiatives cannot be implemented for lack of funds.

Given this bleak situation, the concepts and guidelines for a fully-fledged Eco Industrial Park are far from the everyday reality of any of the local stakeholders. Whilst small scale technical support activities in such areas as RECP raised awareness of good practices and possibilities, resources have not been available to implement on any scale. Whilst the Development Corporation and its many partners have produced ideas to improve park operations, these have mostly been delayed or lost in the “red tape” associated with funding proposals to various government agencies and actual progress is minimal to date.

Stakeholders engaged in the GEIPP on this park therefore expressed an overall sense of frustration with the process. The programme was characterised as a “meet and greet” exercise, which consumed scarce time with various “missions” (such as the evaluation) but so far showed no tangible benefits to the park or any of its stakeholders.

- c) Collaboration with Park Management has been productive in the East London context. Tenant companies here include high profile operations such Mercedes, (which also has larger production and learning facilities in East London outside of the park) and other international companies. Support to individual companies has

**d) What are the remaining barriers to achieving the objectives of the programme and how can these be addressed?**

produced possibilities to reduce operational costs, whilst improving environmental management (e.g., through improved building insulation). These give positive feedback to Park Management about the GEIPP participation, which is seen as valuable.

In Phuthaditjaba, Park Management is fully occupied trying to maintain and if possible, improve the park's viability as the major centre of investment and employment in a very poor surrounding area. Whilst the vision of GEIPP has been understood, it has not proved useful in the face of the fundamental day to day challenges of park management. Given that this park was introduced as part of a pilot concept to see how GEIPP can contribute to different situations, it can be seen as a valuable experiment for the programme. However, from the perspective of park management it has not yet proved valuable.

At policy level, national and international stakeholders contacted valued the contribution of GEIPP. It has attained a level of convening influence, which has helped bring together partners under the overall coordination of the National Cleaner Production Centre. The importance of this process is verified by the increasing engagement of the National Treasury in supporting EIP concepts and practices.

- d) Based on the evidence of the country mission and documentation it is premature to talk of "remaining barriers." All barriers remain. Although progress on policy matters has been notable, there is still far to go before the EIP concept is fully functional in South Africa. It is probable that all IPs currently face critical operational challenges, most notably with regard to consistency of the energy supply necessary for industrial operations. No stakeholders reported any tangible progress in this area. Whilst parks and companies are actively looking at alternatives in terms of solar PV, micro grids, etc, the technical, economic and legal viability of such proposals has yet to be confirmed as a broad solution.

In this situation, GEIPP has so far supported useful environmental management improvements for a range of companies, mostly at the more viable end of the corporate ladder and on higher quality parks. The ability of EIP concepts to offer tangible benefits to less affluent companies on lower quality parks in areas of high poverty has not been demonstrated and, in fact, looks unlikely unless the approach is radically revised to embed EIP in much larger programmes of social and economic

development. These would involve UNIDO in specific and targeted partnerships with a range of other stakeholder institutions, which could take it away from its specific mandate and proven areas of operational capacity.

**3. Programme approach:**

- Design
- relevance
- effectiveness
- efficiency
- programme management

**e) How well does the GEIPP's programme approach work?**

a) The programme approach has added value in terms of setting parameters of the EIP concept. Currently, this remains at the level of a "vision" and the various international guidance documents have so far had limited relevance, given the low starting point and substantial challenges facing many industrial parks in the country. More tangible benefits have been reported through the access given by the programme to a network of expert international and national consultants, who have been provided through UNIDO to address specific issues. The contribution and support provided by the global team has also been found useful.

**f) How is it different from a compilation of individual projects?**

b) Benefits of the programmatic approach over a set of individual projects have been realised more in East London than in Phuthaditjaba. For the former, information on standards attained in other countries provides some stimulus for high performing companies as well as the park management. Operational improvements in South Africa can also gain international visibility through the programme, which may provide reputational benefits both to the park and its companies. For Phuthaditjaba, some interest was expressed in the concept of benchmarking of IPs on key dimensions, even though the park is currently likely to be at a relatively low level of performance on virtually all aspects. Park stakeholders here reported that the programmatic approach has not been well delivered – whilst personnel were sponsored to visit high tech facilities in

Switzerland, they have not been to East London, which they believe would have provided far more useful dialogue on how to address their own challenges. For example, although the two parks are at very different levels of implementation, both face substantial challenges in terms of community acceptability and support, as well as with the national shortages and unpredictability of electric supply. Sharing of potential and actual approaches to address such country-specific issues, would add value to the programmatic approach as compared with individual projects.

On the other hand, the challenges facing the Phuthaditjaba park are so varied and substantial that it would benefit more from a large-scale support project, focussed on all the areas requiring attention. Currently, it is applying for disconnected support resources from a variety of programmes run by different levels of government, whilst participating in GEIPP. The outcome of funding applications is unpredictable and frequently delayed, making it hard to generate lasting improvements. Although this engagement in GEIPP is “intensive” according to the South Africa Project document, it is actually quite marginal to the issues faced by the park and cannot be predicted to make a major difference.

**g) How beneficial is the interplay between the country and global level (Component 1 and 2)?**

c) The interplay between country and global levels has provided benefits in terms of comparability of approaches, providing access to high level international expertise and sharing of experiences among park stakeholders in various countries. Some national stakeholders suggested that this interplay has provided as many benefits to UNIDO and its international funders and partners as to South African players. It is probable that the support provided to NCPC as the programme implementer through its collaboration with global stakeholders in the programme has enhanced its capacity and further raised its credibility.

**h) How useful is the global component of the GEIPP for countries?**

d) The global programme has been moderately useful for the efforts to enhance EIPs in South Africa. The concept and its communications support the view that the move from Industrial Parks to Eco Industrial Parks is being pursued by many countries and that it may at some stage become a type of “Gold Standard” in industrial development. This places pressure on the Government to promote the approach to ensure that the country can be promoted as a location suitable for international investors, many of whom already subscribe to concepts around a “green economy”. The global element therefore provides both a “pull” towards

e) What is the outreach and perception of the GEIPP beyond the immediate programme stakeholders?

recognized international standards and a “push” not to be seen as left behind other countries.

e) Given the plethora of national and international development initiatives in South Africa, GEIPP is seen to have a medium level of visibility outside of its immediate stakeholders. Some of its close partners, notably NCPC (as executing partner) and CISR are active in national communications and do give GEIPP additional exposure. The evaluation does not see this medium level of visibility as a challenge for two reasons. Firstly, GEIPP plays an important catalytic and influencing role among the many programmes, funds and projects promoting industrial development in the country, even where it is not specifically identified. Secondly, the GEIPP funding in South Africa is very small compared with the size of the challenges. It can therefore be expected to primarily reach “low hanging fruit” in the short to medium term, with less specific underlying effects on longer term national processes.

#### 4. Programme implementation and adaptive management

- efficiency
- programme management
- monitoring and evaluation
- financial management
- stakeholder engagement and communication

a) **Has the programme been implemented efficiently, cost-effectively and been able to adapt to any changing conditions thus far?**

a) The programme is managed by NCPC and at national level it has operated efficiently and cost effectively. Specifically, partners reported timely provision of advice and consultancies and satisfaction with the quality of support received. However, some stakeholders indicated that they spent more time than necessary in discussion with the programme, given the low level of direct support it can give them. In the specific circumstances of Phuthaditjaba, the consensus reported by park stakeholders was that they have received no benefits from participating in GEIPP. Whilst this may be a somewhat “broad brush” conclusion it does indicate that from the perspective of one set of intended beneficiaries, their participation has been inefficient, requiring substantial inputs for little or no return. This was not the perception in East London, where benefits are perceived by park management, by its Science and Technology Park and by individual companies. However, the cost-effectiveness of this support might be questioned in view of the positive economic circumstances of companies directly benefitting, which suggests that they could have paid for the type of consultancies undertaken under GEIPP, which may have delivered environmental and economic benefits to them. This might have left more of the limited available resources for exploration of the intersection of improved environmental standards with possibilities to incorporate more approaches targeting community attitudes towards the park and enhanced poverty reduction experiments. Whilst it is clear that the EIP is not in itself a strongly poverty focussed intervention at this stage and within its current budget, more coherent consideration could have been given to possible processes to make such elements more central in the medium to long term. This reflects an apparent underlying characteristic of GEIPP as an international “top down” approach, which has not fully incorporated the flexibility needed to address challenges raised from the “bottom – up.”

b) **Will all funds be expended by programme closure?**

b) Although around \$90,000 remained at the end of June 2023, it is likely that all funds will be expended by programme closure.

c) **To what extent have programme-level monitoring and evaluation systems, reporting, and communications supported the programme implementation?**

c) Programme level monitoring and evaluation has a considerable focus on “SMART” measures, with reporting on quantifiable aspects such as energy savings and CO2

emissions avoided. However, as yet these have been rather small, since improved production practices are mostly at an early stage, or under feasibility study. It cannot therefore be said that “SMART” reporting has fundamentally supported implementation. In practice, the major contributions of GEIPP to date in South Africa have been in such areas as awareness raising, policy and partnership development. The programme has had a catalytic and influencing role, which is positively regarded by its national and international stakeholders. These qualitative aspects are not well captured by programme level M&E systems but are more evident in narrative progress reporting and in discussions with key partners.

Programme communications have played some role in establishing the GEIPP global context and in offering evidence of activities and achievements in EIPs in other countries. Whilst of interest to participants, such information is not seen as central to their own programme development and implementation. Stakeholders indicated that they would have benefitted more from in-person exchanges and visits with participating parks in South Africa, than from any broader international GEIPP community, including countries with substantially different environmental, economic and social challenges from their own.

## 6. Likelihood of transformative change / sustainability

- **What are the risks that are likely to affect the continuation and expansion of programme results?**

a) A second phase of the programme, again with SECO funding, is at an advanced stage of planning. A major risk is that this will move on to another set of “pilots,” without continuing to support the first three. Parks visited are far from “complete” in their understanding and capacity to develop as EIPs. They need continuing support and implementation of practical measures, which can show that EIP is not just a vision devised and promoted by international agencies, but a grounded approach that can be adapted and delivered in a range of countries and situations, with consistent benefits. Stakeholders in the poorer location suggested that the main beneficiaries of the pilot approach are UNIDO and its partners and that far more resources would need to be made available to make any meaningful improvement to their Industrial Park. Whilst some further funding might be forthcoming through national programmes, the importance of continuing to move from the EIP concept to “real life” progress in terms of beneficial environmental management was emphasised. In this respect, key stakeholder constituents in Phuthaditjaba emphasised that they

b) Has the programme put in place mechanisms to ensure sustainability after its completion (in terms of financial, legal, institutional, socio-economic instruments, frameworks or processes)?

c) Are the programme's successful aspects being transferred to appropriate parties, potential future beneficiaries, and others who could learn from the programme and potentially replicate and/or scale it up in the future?

have not yet benefitted from any substantive "results", which could be continued or expanded.

- b) The programme is within the portfolio of the NCPC, which is well connected to a wide network of national and international stakeholders supporting the EIP concept. A second phase of the programme is at an advanced stage of planning. Awareness of the EIP approach has been raised nationally. These are positive contributions towards sustainability. However, they will not "ensure" sustainability. This depends in particular on the functioning of a broad range of South African institutions at national, provincial and municipal level. Currently, even when these are committed to supporting improved industrial production, operational challenges and "red tape" often lead to delayed or abandoned inputs. Further, national level deficiencies, notably in power distribution and water supply, drastically reduce the capacity of all IPs to function and undermine commitments and implementation of environmental improvements. These are likely to continue to be mainly within the reach of the more affluent companies on well-resourced Industrial Parks.
- c) With regard to the transfer of lessons from successful aspects, the programme has initiated a variety of national events, well-supported by a range of interested national and international parties. Awareness of the GEIPP approach has been raised, particularly among key government institutions such as the DTIC and the Treasury. Some specific outputs at individual company level have also been shared. At this stage, it is difficult to identify substantive successes, which are ready to share more widely as lessons. The processes, which could lead to such lessons are still at an early stage and it is unrealistic to expect positive outcomes, ready for replication or scaling up at this stage. One aspect, which has emerged as a potential barrier to specific lesson learning is the perceived need for commercial confidentiality among major companies, particularly international investors. The concept of sharing specific details of measures, which have helped company performance is weak, although more generic progress in terms of improved green credentials is shared in corporate publicity and marketing material.

## 7. Lessons learnt all evaluation criteria

a) What are key lessons learned from country level interventions, including good practices?

- a) The South Africa programme has raised an important issue associated with implementation of the GEIPP approach at country level. This concerns the use of “pilot” sites at different levels of development. On the one hand, this has shown that, even within the same country, the potential for implementation of EIP measures varies greatly from one site to another and even within the same park, from one company to another. From the global perspective, this is a key lesson. Whilst the GEIPP production of global guidelines, standards, etc., is valuable to establish broad parameters of the concept and approach, these products need substantial tailoring for each country, and even for each park location if they are to contribute to national standards of environmentally sensitive production and to address the targeted challenges with regard to environmental, economic and social development needs. This would contribute to processes of “levelling up” within each country.

Furthermore, the suggested improved approaches to reach “international standards” can most readily be accessed by companies and parks, which are already at a relatively high standard, by virtue of their sound economic position. In the situation of parks, which are currently struggling to survive, the time taken by key stakeholders to implement the “pilot” outweighs the very limited benefits, which might be realised by companies or the park as a whole. From this perspective, in a country with substantial development challenges, such as South Africa, putting the EIP approach into practice in a range of parks at different economic, social and environmental management levels may actually become a means of increasing inequality. This poses a reputational risk for UNIDO, unless it can demonstrate that the programme has in place measures to contribute to poverty reduction. However, the evaluation did not find any coherent approach to this fundamental and complex issue.

Looking at the situation outlined above, the GEIPP intervention in South Africa has not so far presented itself overall as an example of “good practice”. Whilst park managers and companies in East London report some potential and realised improvements in environmental management proposed through programme support (often still at feasibility study stage), corresponding stakeholders in Phuthaditjaba made no such claims. The latter reported that their IP faces so many fundamental and substantial issues that the type of improvements suggested by EIP studies would add little value, even if there were any resources to implement them.

- What aspects of the overall GEIPP have been more and which less successful?

How UNIDO could best respond to this difficult situation is highly challenging. A brief review of Phuthaditjaba suggests that GEIPP approaches would only be beneficial as part of a complete revitalization of the park and the surrounding communities. This appears to be well beyond the resources, mandate and principal areas of expertise of UNIDO. A national park revitalization programme is being promoted by DTIC, with substantial inputs from NCPC. However, the outcomes for Phuthaditjaba from this source may be limited and unpredictable, given government “red tape” and slow and unpredictable funding procedures. Park management and the Municipality are also pursuing funding options, including to trial renewable energy and local grid options, but how or when these will deliver cannot yet be specified. A general lesson for the future of the programme can be derived from this specific example. Whilst the inclusion of parks with substantial room for improvement provides a valuable research resource, careful consideration needs to be given in advance as to how their participation in GEIPP can be dovetailed with other sources of support (from national and/or international sources) to ensure that the park does not experience its collaboration with UNIDO as a disbenefit.

- b) Based on the South Africa programme, the most successful element to date has been the raising of national awareness of the possibility of improving the environmental performance of the country’s Industrial parks, contributing to Outcome 1. This awareness has in turn helped to convene a growing range of national bodies intending to support EIP approaches, whether through funding or through attempts to streamline the “red tape” preventing progress at various levels and on major issues, such as reliable energy supply. The country faces numerous fundamental development challenges and there is widely expressed doubt about the effectiveness of government approaches and institutions at all levels. The positive contribution of the GEIPP, as implemented by NCPC at this national level is therefore viewed as relatively successful in a difficult operational environment.

So far, tangible results under Outcome 2 are less evident. Park Management in East London has been helped by assistance from UNIDO sources to identify areas where improvements can be made, both park-wide and for individual tenant companies. Where these have cost implications, they often remain at the feasibility study stage. The relatively limited efforts to date with regard to social dimensions have not yet brought the IP a high degree of community support. Vandalism and security remain important issues and appear to some extent based on unrealistic community

c) What lessons can be drawn from the more and less successful practices in designing, implementing and managing the programme?

expectations of what the IP might deliver, particularly with regard to its employment potential. In this respect, it is notable that the park hosts a number of high-tech companies, such as Mercedes Benz and Clariter (autos and plastics), which do not employ large numbers of unskilled or semi-skilled employees.

Phuthaditjaba has a very different company composition from East London. Most of its producers are small to medium size garment factories. Their production processes are a relatively low level of technology and most of the employees are semi-skilled, often having received training “on the job”. Although there are opportunities for small improvements, which may have been identified under the Programme, these will not alleviate the major challenges facing company operations in particular and the Park in general. For this reason, none of the key stakeholder sets identified benefits from participating in the programme.

Overall, Outcome 2 in South Africa is so far regarded as relatively unsuccessful. Although results over time may improve this assessment, the GEIPP approach has not yet shown a close match with the national needs, in particular in those locations and Parks where resources are inadequate to support anything beyond survival needs. The pilot approach has shown a major weakness, in its inability to adequately support a site selected to illustrate the potential contribution of EIP to low performing Parks in areas of substantial poverty.

c) **“Big Picture” lessons include the following:**

- GEIPP should develop a more comprehensive and coherent approach to address the challenges facing low resource Parks, serving mainly small and medium size enterprises in locations where poverty is prevalent
- GEIPP should discuss with its partners how to effectively partner the programme at national level with adequate support packages to place improved environmental management within broader rehabilitation packages for struggling IPs. This will reduce the possibility that EIP is seen as irrelevant in contexts of poverty
- GEIPP should demonstrate how its global products and guidelines can be made more useful to countries and Parks with limited resources
- GEIPP should analyse and respond to the danger (for Outcome 2) of becoming primarily an unpaid consultancy service for high income companies on relatively well-resourced IPs

- GEIPP should explore how to ensure that its global products and guidelines, including those with international partners, can be effectively “grounded” to provide significant benefits to low-income countries facing varying development challenges.

## 6.9 Overview of Country SWOT analysis: South Africa

Implementation Area	Strengths	Weaknesses	Opportunities	Threats
<b>Component 2</b>  <i>Generate and disseminate knowledge globally.</i>	<p>Benefits have been reported through the access given by the programme to a network of expert international and national consultants, who have been provided through UNIDO to address specific issues.</p> <p>The contribution and support provided by the global team has been found useful.</p> <p>In the “high end” Park in East London, information on standards attained in other countries provides stimulus for high performing companies</p>	<p>Although the programme approach has added value in terms of setting parameters of the EIP concept, this remains at the level of a “vision” and the various international guidance documents have so far had limited relevance, given the low starting point and substantial challenges facing many industrial parks in the country.</p> <p>Park stakeholders in Phuthaditjaba reported that the programmatic approach has not been well delivered – whilst stakeholders visited high tech facilities in Switzerland, they have</p>	<p>GEIPP should explore how to ensure that its global products and guidelines, including those with international partners, can be effectively “grounded” to provide significant benefits to low-income countries facing varying development challenges.</p> <p>GEIPP should demonstrate how its global products and guidelines can be made more useful to Parks and companies with limited resources</p>	

	<p>as well as the park management.</p> <p>Operational improvements in South Africa can gain international visibility through the programme, which may provide reputational benefits both to the park and its companies.</p> <p>The global programme has been moderately useful for the efforts to enhance EIPs in South Africa. Communications support the view that the move from Industrial Parks to Eco Industrial Parks is being pursued by many countries and that it may at some stage become a type of “Gold Standard” in industrial development. This places pressure on the Government to promote the approach to ensure that the country can be promoted as a location suitable for</p>	<p>not been to East London, which they believe would have provided far more useful dialogue on how to address their own challenges</p> <p>GEIPP appears to be an international “top down” approach, which has not fully incorporated the flexibility needed to address challenges raised from the “bottom – up.”</p>		
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	international investors, many of whom already subscribe to concepts around a “green economy”.			
<p><b>Component 1 Outcome 1</b></p> <p><i>Incentivize and mainstream EIP</i></p>	<p>Country commitment is increasing from an initial low level.</p> <p>GEIPP has become integrated into an increasing network of government, national and international stakeholders,</p> <p>Project has had a catalytic and enabling role, providing a foundation for a broad range of national and international partners to begin to address the substantial challenges to reach EIP progress.</p> <p>GEIPP has attained a level of convening influence, which has helped bring together partners under the overall coordination of the National Cleaner Production Centre</p>	<p>Country ownership is highly fragmented between many different institutions and tiers of the government system</p>		

	<p>GEIPP is seen to have a medium level of visibility outside of its immediate stakeholders. Some of its close partners, notably NCPC (as implementer) and CISR are active in national communications and give GEIPP additional exposure.</p> <p>The major contributions of GEIPP have been in such areas as awareness raising, policy and partnership development. The programme has had a catalytic and influencing role, which is positively regarded by its national and international stakeholders. These qualitative aspects are not well captured by programme level M&amp;E systems but are more evident in narrative progress reporting and in discussions with key partners.</p> <p>The most successful element to date has been</p>			
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	<p>the raising of national awareness of the possibility of improving the environmental performance of the country's Industrial parks. This awareness has helped to convene a growing range of national bodies intending to support EIP approaches</p>			
<p><b>Component 1 Outcome 2</b> <i>Identify and implement EIP opportunities</i></p>	<p>Stakeholders have also been brought together at major events, such as National EIP day and the National Industrial Parks Summit.</p> <p>The EIP strategy of choosing IPs at different levels of development has shown that (some) progress towards EIP standards has been made in the relatively developed East London Industrial Development Zone, while the least developed park at Phuthaditjaba shows minimal progress.</p> <p>Wealthy companies have proved amenable to EIP</p>	<p>Particularly in predominantly poor areas, ownership by government bodies is severely limited by lack of finance for actual support.</p> <p>In time, increased awareness and the programmes GEIPP has catalyzed might lead to EIP mainstreaming, but this is some way off. This is particularly true in poor areas of the country, where the income base within and outside the parks is often precarious.</p> <p>The “mid-level” park of Ekandustria has faced start up challenges. It</p>	<p>Programme delivery is within the portfolio of the NCPC, which is well connected to a wide network of national and international stakeholders supporting the EIP concept.</p> <p>The second phase should further develop and support the role of NCPC, which is central to the long-term possibilities for implementation of EIP in the country</p> <p>Challenges facing the Phuthaditjaba park are so varied and substantial that it would benefit more from a large-scale support project, focussed</p>	<p>There is still far to go before the EIP concept is fully functional in South Africa. It is probable that all IPs currently face critical operational challenges, most notably with regard to consistency of the energy supply necessary for industrial operations</p> <p>Unless the GEIPP approach is radically revised to embed EIP in much larger programmes of social and economic development, it is unlikely to succeed in low-income parks or locations. These would involve UNIDO in</p>

	<p>principles and standards, while their corporate profitability gives them resources to implement appropriate actions.</p> <p>In the high-quality East London EIP, support to individual companies has produced possibilities to reduce operational costs, whilst improving environmental management (e.g., through improved building insulation). These give positive feedback to Park Management about the GEIPP participation, which is seen as valuable.</p> <p>GEIPP has so far supported useful environmental management improvements for a range of companies, mostly at the more viable end of the corporate ladder and on higher quality parks</p>	<p>took project implementers 18 months to establish an industry group of five companies that had expressed an interest in RECP and associated industrial sustainability issues.</p> <p>The three-year programme support time scale was far too short to expect decisive progress towards mainstreaming of EIP approaches and even more so to record substantial and tangible benefits in environmental, economic or social spheres.</p> <p>Lower income sites and companies are struggling for survival and cannot afford to implement proposed measures and regard their GEIPP participation as ineffective.</p>	<p>on all the areas requiring attention.</p> <p>GEIPP should develop a more comprehensive and coherent approach to address the challenges facing low resource Parks, serving mainly small and medium size enterprises in locations where poverty is prevalent</p> <p>GEIPP should discuss with its partners how to effectively partner the programme at national level with adequate support packages to place improved environmental management within broader rehabilitation packages for struggling IPs. This will reduce the possibility that EIP is seen as irrelevant in contexts of poverty</p> <p>GEIPP should analyse and respond to the danger of becoming</p>	<p>specific and targeted partnerships with a range of other stakeholder institutions, which could take it away from its specific mandate and proven areas of operational capacity.</p> <p>A major risk is that the next phase of GEIPP will move on to another set of “pilots,” without adequately supporting the first three. Parks visited are far from “complete” in their understanding and capacity to develop as EIPs.</p> <p>The concept of sharing details of measures, which have helped company performance is weak, although more generic progress in terms of improved green credentials is shared in corporate publicity and marketing material</p>
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		<p>The ability of EIP concepts to offer tangible benefits to less affluent companies on lower quality parks in areas of high poverty has not yet been demonstrated</p> <p>Programme level monitoring and evaluation has a focus on “SMART” measures, with reporting on quantifiable aspects such as energy savings and CO2 emissions avoided. However, as yet these have been rather small, since improved production practices are mostly at an early stage, or under feasibility study. It cannot therefore be said that “SMART” reporting has fundamentally supported implementation.</p> <p>The relatively limited efforts to date with regard to social dimensions have not yet brought EIPs a high</p>	<p>primarily a low paid or unpaid consultancy service to high income companies on relatively well-resourced IPs</p>	<p>in a country with substantial development challenges, putting the EIP approach into practice in a range of parks at different economic, social and environmental management levels may actually become a means of increasing inequality, since profitable companies in successful parks will be most able to implement improved processes.</p>
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		<p>degree of community support. Vandalism and security remain important issues and appear to some extent based on unrealistic community expectations of what an IP might deliver.</p> <p>Overall, Outcome 2 is so far regarded as relatively unsuccessful. Although results over time may improve this assessment, the GEIPP approach has not yet shown a close match with the national needs, in particular in those locations and Parks where resources are inadequate to support anything beyond survival needs. The pilot approach has shown a major weakness, in its inability to adequately support a site selected to illustrate the potential contribution of EIP to low performing Parks in areas of substantial poverty</p>		
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## 6.10 Terminal Evaluation Of GEIPP - South Africa. Stakeholder Engagement Meetings (2nd - 11th May 2023)

	Name & Surname	Organisation	Portfolio	E-mail Address	Meeting set up
<b>East London Industrial Development Zone (ELIDZ) Date: 02-03-05-2023</b>					
1	Chris Ettmayr	ELIDZ	Renewable Energy & ICT Sector Manager	<a href="mailto:Chris@elidz.co.za">Chris@elidz.co.za</a>	In person
2	Sibusiso Ralarala	ELIDZ	Corporate Social Investment Manager	<a href="mailto:SibusisoR@elidz.co.za">SibusisoR@elidz.co.za</a>	In person
3	Ludwe Macingwane	ELIDZ	Science and Technology Manager	<a href="mailto:Ludwe@elidz.co.za">Ludwe@elidz.co.za</a>	On Line
4	Vuyo Sikwebu	Clariter	Operation Manager	<a href="mailto:vuyo.sikwebu@clariter.com">vuyo.sikwebu@clariter.com</a>	In person
<b>the dtic Date: 04-05-2023</b>		<b>the department of trade industry and competition (the dtic)</b>			
1	Thami Klassen	the dtic	Director: Regional Industrial Development	<a href="mailto:TKlassen@thedtic.gov.za">TKlassen@thedtic.gov.za</a>	In person
<b>NCPC-SA Date: 04-05-2023</b>		<b>National Cleaner Production Centre of South Africa (NCPC-SA)</b>			
1	Ndivhuho Raphulu	NCPC-SA	NCPC-SA Director	<a href="mailto:NRaphulu@csir.co.za">NRaphulu@csir.co.za</a>	In person
2	Bernd Oellermann	NCPC-SA	Senior Project Manager (EIP)	<a href="mailto:BOellermann@csir.co.za">BOellermann@csir.co.za</a>	In person
4	Henry Nuwarinda	NCPC-SA	Project Manager (EIP)	<a href="mailto:HNuwarinda@csir.co.za">HNuwarinda@csir.co.za</a>	In person
5	Wynand van der Merwe	NCPC-SA	Skills & Development Manager	<a href="mailto:WvdMerwe@csir.co.za">WvdMerwe@csir.co.za</a>	In person

**TERMINAL EVALUATION OF GEIPP - SOUTH AFRICA**

	Name & Surname	Organisation	Portfolio	E-mail Address	Meeting set up
<b>SECO</b>		<b>Date: 04-05-2023</b>			
<b>State Secretariat for Economic Affairs (SECO), Switzerland</b>					
1	Mudombi Shakespear	SECO	Programme Manager	<a href="mailto:shakespear.mudombi@eda.admin.ch">shakespear.mudombi@eda.admin.ch</a>	In person
2	Daniel Laucmenauer	SECO	Head of SECO	<a href="mailto:daniel.lauchenauer@eda.admin.ch">daniel.lauchenauer@eda.admin.ch</a>	In person
<b>GIZ NatuRes</b>		<b>Date: 05-05-2023</b>			
<b>GIZ Natural Resources Stewardship (GIZ NatuRes)</b>					
1	Nyingwa, Amanda GIZ ZA	GIZ NatuRes	Technical Advisor	<a href="mailto:amanda.nyingwa@giz.de">amanda.nyingwa@giz.de</a>	In person
2	Lawrence, Faith GIZ ZA	GIZ NatuRes	Country Co	<a href="mailto:faith.lawrence@giz.de">faith.lawrence@giz.de</a>	On line

	Name & Surname	Organisation	Portfolio	E-mail Address	Meeting set up
<b>International Finance Corporation (IFC) Date: 05-05-2023</b>					
1	Rong Chen	IFC	Senior Operations Office	<a href="mailto:rchen@ifc.org">rchen@ifc.org</a>	In person
2	Raymond Greig	IFC		<a href="mailto:rgreig@ifc.org">rgreig@ifc.org</a>	In person
	Nonhlanhla Fikile Vususuthu	IFC		<a href="mailto:nhalimana@ifc.org">nhalimana@ifc.org</a>	In person

<b>National Treasury</b> Date: 05-05-2023					
1	Rudewaan Arendse	National Treasury	National Consultant	<a href="mailto:rudewaan.arendse@gmail.com">rudewaan.arendse@gmail.com</a>	On line
2	Karen Harrison	National Treasury	Director	<a href="mailto:Karen.Harrison@Treasury.gov.za">Karen.Harrison@Treasury.gov.za</a>	On line

### TERMINAL EVALUATION OF GEIPP - SOUTH AFRICA STAKEHOLDER ENGAGEMENT MEETINGS

	<b>Name &amp; Surname</b>	<b>Organisation</b>	<b>Portfolio</b>	<b>E-mail Address</b>	<b>Meeting set up</b>
<b>Phuthaditjhaba Industrial Park</b> Date: 08-5-2023					
1	Refiloe Moahpi	FDC Phuthaditjhaba Industrial Park Management	Technician (FDC)	<a href="mailto:refiloe@fdc.co.za">refiloe@fdc.co.za</a>	In person
2	Suren Ranjith	Phuthaditjhaba Industrial park Tenant	Textile Company Owner	<a href="mailto:Surenranjith123@gmail.com">Surenranjith123@gmail.com</a>	In person
3	Tefo Matla	FDC-Phuthaditjhaba Industrial Park Management	Park Manager (FDC)	<a href="mailto:Tefo@FDC.CO.ZA">Tefo@FDC.CO.ZA</a>	In person
4	Bodibe Ntebo	FDC-Phuthaditjhaba Industrial Park Management	Technician (FDC)	<a href="mailto:nsebolelo@gmail.com">nsebolelo@gmail.com</a>	In person
5	Krumalo Nellie	FDC-Phuthaditjhaba Industrial Park Management	Property Consultant (FDC)	<a href="mailto:nellie@fdc.co.za">nellie@fdc.co.za</a>	In person
6	Sellwane Lemaona	FDC-Phuthaditjhaba Industrial Park Management	Property Consultant (FDC)	<a href="mailto:sellwane@fdc.co.za">sellwane@fdc.co.za</a>	In person

7	Alester Njozo	FDC-Phuthaditjhaba Industrial Park Management	Credit Management (FDC)	<a href="mailto:ngozo@fdc.co.za">ngozo@fdc.co.za</a>	In person
<b>Maluti TVET: Date: 08-05-2023 (TVET- Technical Vocational Education and Training)</b>					
1	Thanndeka Mahlatjie	Maluti TVET	Centre Manager	<a href="mailto:Mahlatji.ktc@malutitvet.co.za">Mahlatji.ktc@malutitvet.co.za</a>	In person
2	Mazi Khambule	Maluti TVET	Acting Director	<a href="mailto:Khambule.mr@malutitvet.co.za">Khambule.mr@malutitvet.co.za</a>	In person

	Name & Surname	Organisation	Portfolio	E-mail Address	Meeting set up
<b>Maluti Aphofung Local Municipality: Date: 09-05-2023</b>					
1	T.S. Malkhele	Muluti Municipality	Acting Director Local Economic Development	<a href="mailto:Makhelet123@gmail.com">Makhelet123@gmail.com</a>	On line

### TERMINAL EVALUATION OF GEIPP - SOUTH AFRICA STAKEHOLDER ENGAGEMENT MEETINGS

	Name & Surname	Organisation	Portfolio	E-mail Address	Meeting set up
<b>The dtic and SECO NCPC-SA: Date: 10-05-2023</b>					
	Thami Klassen	<i>the dtic</i>	Director: Regional Industrial Development	<a href="mailto:TKlassen@thedtic.gov.za">TKlassen@thedtic.gov.za</a>	

1					In person
2	Mudombi Shakespear	SECO	Programme Manager	<a href="mailto:shakespear.mudombi@eda.admin.ch">shakespear.mudombi@eda.admin.ch</a>	In person

## Annex 7. Overview and Mission Findings for GEIPP Vietnam<sup>50</sup>

### 7.1 Project Details

<b>Project number:</b>	180321
<b>Project title:</b>	Eco-industrial park intervention in Viet Nam - Perspective from the Global Eco-Industrial Parks Programme
<b>Thematic area code</b>	Energy and Environment
<b>Starting date</b>	May 2020
<b>Duration:</b>	3 years
<b>Project site:</b>	The Socialist Republic of Viet Nam
<b>Government coordinating agency:</b>	Ministry of Planning and Investment (MPI)
<b>Main counterparts:</b>	Ministry of Planning and Investment (MPI) Other relevant Ministries
<b>Other counterparts</b>	Provincial Authorities, Industrial Park Authorities of Hai Phong, Da Nang, Can Tho, Dong Nai, Ho Chi Minh City
<b>Executing agency/ cooperating agency:</b>	UNIDO
<b>Project Inputs:</b>	
- <b>SECO inputs:</b>	1,700,000 CHF <sup>51</sup> (equivalent to USD 1,683,000 as of 13 June 2019)
- <b>Support costs (13%):</b>	221,000 CHF (not included in the Project Budget)
- <b>Expected Counterpart inputs</b>	170,590 USD from MPI as counterpart fund;
- <b>Grand Total (tentative):</b>	1,853,590 USD

### 7.2 Role of Industrial Development in the Economy and Environment of Vietnam

Viet Nam has experienced sustained rapid economic growth over the last 15 years, much of which has been generated by the processing and manufacturing sectors. Economic benefits of this development have been accompanied by adverse changes in environmental quality. Although environmental legislation is in place at national level to address these negative

<sup>50</sup> Background data on the potential role of EIP in Vietnam is derived from the document *Eco-industrial park intervention in Viet Nam - Perspective from the Global Eco-Industrial Parks Programme*. GEIPP. UNIDO. 2019. Figures refer to the year 2019.

<sup>51</sup> From the SECO inputs an amount of up to CHF 113,000 including the 13% UNIDO support cost contribution can be used for the development of the project document

effects, structures and practices to implement intended controls have so far been limited and largely unsuccessful.

Underlying the relatively weak uptake of environmental management practices is the fact that “at present, the current economic system in Vietnam is mainly operating according to market signals, not paying much attention to factors that have (positive or negative) impacts on the environment and the society. The market for environmental goods and services, environmentally friendly products, and recycled products has not been really interested and supported to operate in sync with the world trend.

The legal conditions and infrastructure for the development of circular economy, especially the infrastructure for waste collection, classification and recycling, are still insufficient and inadequate, making it difficult to implementing new business models”<sup>52</sup>.

Industrial growth has been one of the key drivers of Viet Nam’s increasing energy intensity, accounting for almost half (48%) of the energy use. Up to 2030, Viet Nam’s overall GHG emissions are expected to increase fivefold, per capita emissions fourfold, and the carbon intensity of GDP by 20 percent. The government recognized the importance of green growth and passed the Viet Nam Green Growth Strategy for the period 2011–2020 with a broader vision to 2050. Viet Nam has also pledged, in its Nationally Determined Contribution (NDC) submitted to the United Nations Framework Convention on Climate Change (UNFCCC), to reduce 8 percent of the greenhouse gas (GHG) emission by 2030 compared to the business-as-usual scenario and to further aim at 25 percent reduction with support from the international community.

**Industrial zones:** Various Government entities have participated in the creation of industrial development zones to facilitate the establishment of new industries, through the provision of essential utilities, water and effluent treatment. In 2019, the total number of industrial zones (IZs) was 333. Out of these, 258 were operational across 61 Vietnamese provinces. Most IZs are located in the main economic areas of the country, namely the Mekong River Delta (51), Southeast (113) and Red River Delta (89). The economic value of IZs for Viet Nam is substantial: the total turnover reached over 194 billion USD, increasing by 15% per annum. The total export sales stood at nearly 122 billion USD, up 19% per annum and making up 55% of the total export value of Viet Nam. The total revenue amounted to more than 113 trillion VND (equivalent to 4.9 billion USD), 17% higher than the previous year. Furthermore, more than 100 new industrial zones are under consideration.

The prevalence of industrial zones in Viet Nam and their critical role in economic growth makes the transformation of these into eco-industrial parks (EIP) an urgent and significant challenge. The opportunity to improve the environmental, social and economic performance of a proportion of these parks could make a significant contribution to the tenant companies, park management entities, neighbouring communities and to national sustainable development.

### **7.3 The Vietnam Project and National Policies**

The development objective of the Vietnam project is in line with that of the overall GEIPP and other past and present programmes managed by UNIDO. This is to demonstrate the viability and benefits of Eco-Industrial Park approaches in scaling up resource productivity

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<sup>52</sup> *Review the status of legislation waste management in the industrial parks of Vietnam.* (P9). Prepared by: Le Hoang Lan, Consultant. GEIPP Vietnam, 2022.

and improving economic, environmental and social performance of businesses and thereby contribute to inclusive and sustainable industrial development in Vietnam.

The specific expected outcome of the EIP intervention in Viet Nam is:

Improved environmental, economic and social performance of industries in Viet Nam through the implementation of EIP approaches in selected pilot industrial parks and an increased role of EIP in environmental, industrial and other relevant policies at the national level.

Prior to the current UNIDO-SECO project, a GEF-SECO intervention - *Implementation of eco-industrial park initiative for sustainable industrial zones in Vietnam* - was implemented from 2014 until 2019. This had the objective of increasing the transfer, deployment and diffusion of clean and low-carbon technologies and practices for the minimization of GHG emissions, POPs releases and water pollutants as well as improved water-efficiency and the sound management of chemicals in industrial zones (IZ). This project contributed towards improved national legislation and regulation, intended to promote the transformation of more than 300 IZs into EIPs. In particular, Decree 82/2018/ND-CP 'Management of Industrial Parks and Economic Zones' is a major foundational element. This Decree, which merges or replaces several older Decrees covering industrial zones (29/2008, 164/2013 and 11/2015) - prescribes the planning, establishment and operation of policies on and state management of industrial parks and economic zones. It applies to regulatory bodies, organizations and individuals involved in investment and business activities in industrial parks and economic zones. In its Section 4, the Decree explicitly mentions instructions for the enhancement of Eco-Industrial Parks, which the GEIPP Vietnam project aims to support.

Article 40 of Decree 82 provides a platform for the UNIDO GEIPP intervention in the country. It states that the objectives of development of eco-industrial parks in Vietnam are as follows:

1. Promote the economic effectiveness of enterprises operating in industrial parks through application of cleaner production methods, effective exploitation of resources and building of industrial symbiosis
2. Improve effectiveness in protection of the internal and ambient environment of industrial parks by minimizing polluting sources and wastes, and encourage use of clean technologies, cleaner and eco-friendly production methods
3. Build a business community in an industrial park, which has capacity to compete with others in the market, protect and develop the living environment for communities within the precinct of the industrial park, and fulfil sustainable development objectives.

Article 41 of Decree 82 specifies the following policy areas, which should be pursued to encourage development of eco-industrial parks:

1. Encourage investors to develop infrastructure of industrial parks, improve technical and social infrastructure, provide high-quality public utilities, connect with enterprises located within industrial parks and assist them in creating industrial symbiosis to transform it into an eco-industrial park
2. Encourage enterprises in an industrial park to improve management and operation procedures, renovate and apply technologies towards cleaner production, reduce polluting sources, reuse wastes and scrap, and effectively exploit resources.

## 7.4 Parks engaged with the GEIPP project in Vietnam

In common with other GEIPP country projects, activities in Vietnam support the conversion of existing IPs into EIPs but will not engage in new park development. Its focus is on “brownfield” sites rather than on “greenfield” sites.

Based on a report developed during the preparatory phase, entitled “Review of industrial parks for GEIPP in Vietnam” as well as on recommendations from the Vietnamese Government, two “model” industrial parks were initially selected in Viet Nam (Amata and Deep C). These parks scored high against the International EIP framework since they showed strong management committed to the EIP concept and potential for improvement with the limited financial resources available from the project. As a result of interventions under GEIPP, it was intended that these model parks should become examples of achievement and that they could be visited during organized tours in order to inspire other IP stakeholders in the country. In these industrial parks, the project will focus on (i) the provision of specialized advisory services, and (ii) the development of synergies within and outside the parks and less on RECP assessments.

Also drawing on the application of the EIP selection tool during the preparatory phase, Hiep Phuoc Industrial Park in Ho Chi Minh City was identified as showing significant improvement potential. A more “in-depth” intervention was planned in this park, including RECP assessments as well as identification and implementation of industrial synergies. Accordingly, most of the capacity building and technical cooperation efforts under GEIPP are intended to be provided to this park.

Already over 6 billion US\$ has been invested by foreign developers or joint ventures in Viet Nam Industrial Zones. So far, these investments have shown limited attention to resource efficiency and reduced environmental degradation. Furthermore, investments in clean solutions at the single factory level are still very limited in Viet Nam, since the vast majority of producers are SMEs and transaction costs for investment appraisals are often prohibitive for local banks and financiers.

## 7.5 Justification and Beneficiaries of the Project

The country project document maintains that, without the intervention, the increasing demand for industrial production will likely be met through “business-as-usual” approaches. Under these, producers will seek the perceived lowest production costs and shortest returns on investment, whilst neglecting or downplaying the importance of protecting environment and human health. As well as contributing to stated national objectives for Vietnam, the project will contribute through its lessons to the Global component of the GEIPP.

The main beneficiaries identified in Viet Nam are:

- Ministry of Planning and Investment
- Other relevant Ministries (including MONRE, MOST and MOC)
- Provincial authorities of Hai Phong, Dong Nai, and Ho Chi Minh City
- Target Industrial Parks and their tenants: Deep C in Hai Phong City, Amata in Dong Nai province, and Hiep Phuoc in Ho Chi Minh City
- Other industrial zone authorities, industrial park developers and tenants indirectly benefitting, mainly from capacity building and awareness raising activities.

In addition to the main three parks targeted, the project aimed to continue supporting the development of business cases for industrial symbiosis options identified at the Hoa Khanh Industrial Park (Da Nang) and Tra Noc 1&2 Industrial Park (Can Tho) under the earlier GEF-SECO EIP Project (see 7.3 above).

UNIDO is one of 17 signatories of the UN Country Framework document for Vietnam<sup>53</sup>. With potential regard to GEIPP, it is one of 14 UN Agencies contributing to Outcome 2 of the Framework – Climate Change response, disaster resilience and environmental sustainability. It is also one of 15 Agencies contributing to Outcome 3 - Shared prosperity through economic transformation. Although the Framework mentions the intention for UN Agencies to work collaboratively, it does not specify how this might be delivered. Given the large number of Agencies listed as engaged in Outcomes 2 and 3, it could prove difficult to move from intention to practice and this seems to have been the case, since specific national level collaboration between UNIDO GEIPP and other UN activities did not strongly emerge as a feature from stakeholders contacted in-country. Indeed, the potential for UNIDO to contribute to the overall UN Country Framework outcomes appears to have been highly restricted at the time this document was signed off. Whilst the total intended UNIDO Country Framework Budget was \$28,938,450, only \$2,438,450 of funding had actually been identified, leaving \$26,500,000 to be realised from new sources. At this time, GEIPP was therefore perhaps the major funded UNIDO activity in Vietnam and the possibilities for UNIDO as a whole to collaborate in broader UN programmes appeared limited, pending increased funding.

## 7.6 Introduction to the three participating EIPs<sup>54</sup>

GEIPP implements a detailed selection process against an International Framework for sites regarded as potential participants in the programme. In the case of Vietnam, the process appears to the evaluation team somewhat over-elaborate to select only two or three sites out of more than 300 Industrial Zones in the country. Furthermore, national stakeholders added their own preferred characteristics to those of the international classification. These proposed:

- one park in the north of Viet Nam
- one park in the south of the country
- at least one industrial park with a substantial proportion of SMEs
- at least one industrial park with high national ownership in the park developer and tenant companies.

The original intention of the Vietnam selection process was to select TWO parks for inclusion:

- One leading “model” park
- One Park with high improvement potential.

The final selection was for three parks. Key factors presented in the country document for the selection of these three IPs in Vietnam are outlined below.

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<sup>53</sup> ONE STRATEGIC FRAMEWORK FOR SUSTAINABLE DEVELOPMENT COOPERATION BETWEEN THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIET NAM AND THE UNITED NATIONS FOR THE PERIOD 2022-2026. UN Vietnam (Undated).

<sup>54</sup> *Global Eco-Industrial Parks Programme - Viet Nam: Country Level Intervention. Review of industrial parks for the Global Eco-Industrial Parks Programme in Viet Nam.* UNIDO 2019

### Amata in Dong Nai Province

- Amata (in the south of Vietnam) has the highest score on its current performance against the GEIPP International Framework, as well as on its intended performance at end of the GEIPP. It is therefore a “model” park.

Park/ Industrial Zone	Key positives	Considerations for GEIPP <sup>55</sup>
Amata (Dong Nai)	<ul style="list-style-type: none"> <li>• Clear high-level commitment from developer and available funds/resources towards EIP.</li> <li>• Large existing industrial park (550 ha).</li> <li>• Total 151 operating companies. Balanced mix of operating SMEs (30%) and large companies (70%)</li> <li>• Park is very organised and well-advanced (potential to service as model EIP?)</li> </ul>	<ul style="list-style-type: none"> <li>• 93% of companies are international and well-developed companies (45% Japan, 11% Korean, 11% Taiwan). It may be more difficult to engage with these companies.</li> </ul>

Some key features of Amata are as follows. “Amata Industrial Park also know as Long Binh Industrial Park (Amata), located at Long Binh Ward, Bien Hoa City, Dong Nai Province. The Industrial Park have total area is equal to 513.01 ha, of which the Land for lease is 364.19 ha, land area already leased is 350.71 ha, Greenery area of the industrial park is 69.87 ha, accounting for 13.6% of the area. Currently, the IP has a total of 172 investment projects, of which 166 are operating, 01 is under construction; 02 enterprises preparing to build; 01 standard enterprise operation and 02 temporary enterprises<sup>56</sup>”.

The park is managed by the Amata City Bien Hoa Joint Stock Company, a source of foreign direct Investment. Amata City Bien Hoa., JSC (ACBH) was established in 1994 as the first overseas integrated industrial estate of Amata Corporation PCL on 700 hectares in Bien Hoa City.<sup>57</sup>

Amata City Bien Hoa IP houses multinational corporations with a total investment of well over US\$2,4 billion and a total workforce of more than 48,000 workers. Amata specializes in planning, developing, managing, and marketing integrated industrial estates. The company strives not only to provide a location for businesses, but to create integrated cities with a range of services designed to support its client companies and the people who work for them. This means there is an international standard road system, a private security system that incorporates support from local police, reliable utilities and waste disposal facilities, well-maintained green areas and ready built factories for those who want to immediately get up and running.

“Founded in 1989 and fired by the vision of founder, Thai entrepreneur Vikrom Kromadit, Amata has grown from a tiny entity into an industrial giant with industrial estates covering over 6,000 hectares of land on strategically located sites in Thailand and Vietnam, with more in development in Lao PDR and Myanmar”<sup>58</sup>.

<sup>55</sup> The “Considerations for participation” were inputs from site visits by the GEIPP team.

<sup>56</sup> ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR DEEP C (HAI PHONG) AND AMATA (DONG NAI) INDUSTRIAL PARKS IN VIETNAM (P6). GEIPP. UNIDO. 2021.

<sup>57</sup> Website. Yellow Pages, Vietnam.

<sup>58</sup> www.amata.com

### Deep C in Hai Phong City

- Deep C (in the North of Vietnam) is the second highest scoring park against the GEIPP International Framework on its current performance and intended performance at end of GEIPP. It is also a “model” park.

Park/Industrial Zone	Key Positives	Considerations for participation in GEIPP
Deep C1&C2 (Hai Phong)	<ul style="list-style-type: none"> <li>• Clear high-level commitment from developer and available funds/resources towards EIP.</li> <li>• Good understanding of EIP concept by developer and associated opportunities (e.g., reuse of gypsum, shared steam boiler).</li> <li>• Potential significant impacts with EIP interventions.</li> <li>• Large existing industrial park (Deep C1 = 448 ha), with clear opportunity to influence design and development of Deep C2 area (500 ha).</li> </ul>	<ul style="list-style-type: none"> <li>• Park has higher proportion of capital intensive and modern processing companies (e.g., petrochemical, plastics), which are not necessarily labour intensive.</li> <li>• Park would need highly specialised expertise on specific topics of interest (e.g., water treatment, gypsum reuse, steam boilers).</li> </ul>

In terms of its management and development: “DEEP C Industrial Zones is a Belgian developer and operator of an Industrial zone and port infrastructure cluster in Hai Phong and Quang Ninh province - the most dynamic growing region in North Vietnam, began in 1997 with the development of DEEP C Haiphong I (formerly known as Dinh Vu Industrial Zone), a collaboration between Belgian investor Rent-A-Port and Hai Phong People’s Committee. Over the past 24 years, it has constantly expanded to three industrial zones in Hai Phong and two in Quang Ninh, forming DEEP C industrial zone cluster covering 3,400 hectares at the epicentre of the region’s manufacturing and infrastructure boom, with proximity to the international airport, deep seaport, and extended expressway network”<sup>59</sup>.

### Hiep Phuoc in Ho Chi Minh City

In the scoring system intended to provide the basis for park selection, Hiep Phuoc was in the category with the highest number of “to be confirmed” scores, which would not provide high eligibility to participate. However, it is reported to have “high economic potential” (e.g., capacity to invest or attract investment, stimulation of the local economy). It is in the South of the country.

Park/Industrial Zone	Key Positives	Considerations for participation in GEIPP
Hiep Phuoc (Ho Chi Minh)	<ul style="list-style-type: none"> <li>• Clear high-level commitment from developer and available funds/resources towards EIP.</li> <li>• Large existing industrial park (phase 1 = 311 ha).</li> </ul>	<ul style="list-style-type: none"> <li>• Limited number of actual manufacturing companies (about 45-50). Total of 104 companies in park, but about 35 are high-tech companies, 8 logistical companies and 15 mechanical companies.</li> </ul>

<sup>59</sup> ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR DEEP C (HAI PHONG) AND AMATA (DONG NAI) INDUSTRIAL PARKS IN VIETNAM (P4). GEIPP. UNIDO. 2021

	<ul style="list-style-type: none"> <li>• Clear opportunity to influence design and development of phase 2 (597 ha, 40% developed) and phase 3 (393 ha).</li> <li>• Balanced mix of operating SMEs and large corporations.</li> </ul>	
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Hiep Phuoc Industrial Park is located in Nha Be District, Ho Chi Minh City. With a total area of 1,686 hectares, Hiep Phuoc is the largest industrial park in the city, possessing a strategic location with comprehensive infrastructure, facilities, three international seaports. Easily connected to the highway, international airport.

Currently, Hiep Phuoc Industrial Park attracts about 200 investors, creating jobs for about 11,000 workers in the following industries:

- Microelectronics, Optoelectronics, Information Technology, Telecommunications.
- Precision Mechanics and Automation.
- Biotechnology is applied in the fields of agriculture, health, and the environment.
- New Materials, Nanotechnology, New Energy.

High-tech industries, clean production, key industries that the city encourages, limiting potentially polluting industries.

The Park is managed by Hiep Phuoc Industrial Park JS Company, which established Vie-Pan Techno Park Company Ltd on the basis of joint venture with the purpose of building Japanese small and medium plants at Hiep Phuoc Industrial Park<sup>60</sup>. The park is therefore supported by Foreign Direct Investment, emanating mainly from Japan.

Although Hiep Phuoc did not provide a strong fit with the original principles outlined in the national selection document, it was included as a participant in the final National Project Document<sup>61</sup>. The rationale provided was:

“Based on the application of the EIP selection tool during the preparatory phase, **Hiep Phuoc** Industrial Park in Ho Chi Minh City showed significant improvement potential. A more “in-depth” intervention is planned in this park, including RECP assessments, industrial synergies identification and implementation. In consequence, most of the capacity building and technical cooperation efforts will be provided to this park”.

## 7.7 Review of the Park Selection Process

Although the GEIPP has developed a global selection process, its application in Vietnam illustrates significant challenges. Against the original intention to select two parks with different characteristics, the initially selected participants were actually both “model” parks of a high standard. A third park was then added, because of its apparent high potential for improvement. Furthermore, the nationally proposed additional requirements for selection gave a total of six characteristics, to be met by the original two parks. Even adding the third park to the project did not enable all of the selection requirements to be

<sup>60</sup> ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR HIEP PHUOC (HO CHI MINH) INDUSTRIAL PARK. GEIPP. UNIDO. 2022.

<sup>61</sup> PROJECT DOCUMENT. Eco-industrial park intervention in Viet Nam - Perspective from the Global Eco-Industrial Parks Programme. UNIDO 2019.

met. In particular, the participating parks are all characterised by a substantial degree of international investment in ownership, management and among tenant companies. They do not provide evidence of the potential to improve parks dependent on national investment, management or predominance among tenants. Even the (additional) park selected for its significant potential for improvement, Hiep Phuoc, is owned and managed by a Japanese-owned company with a high level of investment resources in Vietnam.

## 7.8 Overview of Key Evaluation Mission Findings for Vietnam

### Intended Outcomes of GEIPP Vietnam

EVALUATION DIMENSIONS AND EVALUATION CRITERIA	MISSION EVALUATION FINDINGS
1: Programme Strategy design/relevance, results framework (log frame)	
<p>g) To what extent did the programme design remain relevant throughout implementation?</p> <p>h) How strong is the country commitment/ownership?</p> <p>i) Were any management adaptations needed to achieve expected results?</p>	<p>a) The programme design has remained relevant throughout the implementation period.</p> <p>b) Country commitment is increasingly strong, as government understanding of the approach has developed. Ownership varies among different levels of government and between local authorities. The extent to which authorities have funds to promote an EIP approach to industrialization also varies. Competition has arisen among localities, which see a recognized high level of environmental management in parks as projecting the type of “cutting edge” image, which can attract investors, particularly from overseas.</p> <p>c) No stakeholders reported the need for major adaptations to the programme.</p>

d) What are major technical needs/demands from stakeholders at country level?

d) Take up of technical improvements appears to be largely driven by park management and production companies, which already see themselves as market leaders, or potential market leaders. Park managers are particularly interested in possibilities to reduce energy costs through renewables, mainly solar PV, but also wind and other sources. Recycling/re-use of wastewater is also of interest, although currently stalled by lack of clarity on exact standards to be adopted.

Industrial symbiosis opportunities are also under consideration and may need technical assistance, which could be provided through the programme. However, some of the companies with potential interest are hampered by strong approaches to commercial confidentiality, which prevent them from sharing information on outputs or on appropriate inputs.

Demand for support through the programme in such areas as energy efficiency is still strong, often “brokered” to companies by park management. Even high-tech companies reported that RECP reviews produced unexpected opportunities to save energy and reduce costs, often through simple measures, which they have previously overlooked.

## 2. Progress towards results - effectiveness

h) To what extent have the expected outcomes and objectives of the programme been achieved?

a) The underlying objective of the programme in Vietnam is to raise awareness and implementation of opportunities and approaches to achieve environmental, economic and social benefits through improved environmental management on Industrial Parks. Under **Outcome 2**, on the pilot sites, which are all relatively prosperous, there has been some take up of improved production methods, including energy efficiency, building on reviews conducted with support from GEIPP. Other proposed measures were reported to be under review for their technical and financial viability. More fundamentally, in terms of **Outcome 1**, there is considerable support for the overall programme concept from central and local levels of government. However, it takes substantial time for such support to generate opportunities at the level of individual parks. This requires national

i) **Is GEIPP on track to achieve its objectives?**

legislation and regulation, moving down through the government system to city and local authorities, which have supervision of parks at ground level.

Park management companies reported intentions to take initiatives in such areas as energy and water management, waste recycling or re-use, etc. However, even when technical aspects have been clarified, companies reported that many legal and administrative barriers remain. For example, standards required for output re-use have often not been legally specified, so that the range of potential uses remains limited, despite the broad national intention to activate approaches in such areas. Licenses for large scale solar PV systems can take years for approval and procedures for selling surplus energy to the national grid are not approved. Overall, it is assessed that there has been steady progress in terms of heightened awareness and acceptance of the EIP concept and associated practices, representing movement towards **Outcome 1** objectives. However, this progress is not yet sufficient to enable broader uptake of technical innovations under **Outcome 2**, many of which need to be clearly compliant with national legislation and standards. These aspects of **Outcome 1** will still take time and consistent government prioritisation to be fully delivered and in the meantime, this situation will impose knock-on delays in meeting expected **Outcome 2** deliverables.

b) Technical opportunities for movement towards EIP approaches have been demonstrated and some advances made. Nevertheless, progress towards ultimate GEIPP objectives is on a relatively slow track, whilst waiting for different levels of the political, administrative and legislative system to respond to the many new issues arising. In this respect, it is clear that the more progressive parks are actually well ahead of the national system in terms of initiatives they would like to take.

Given that the three pilot parks are all of a high standard, it can be said that GEIPP is on track to meet some of its objectives in this type of environment. However, it is also clear that Vietnam has large numbers of IPs with far less capacity for innovation. Constraining factors would include:

- Most of land already let for production, removing the possibility to meet new Green Space requirements for EIPs

j) **How successful are the new elements of the GEIPP, the collaboration with the park management and the work at the policy level?**

d) **What are the remaining barriers to achieving the objectives of the programme and how can these be addressed?**

- Predominance of Small, Medium and Micro Enterprises, with less resources and capacity to focus on improved environmental management
- Less pressure on smaller companies to meet environmental and social standards to meet market or shareholder pressures
- Less focus of park managers on high standards to attract major international investors.

The extent to which GEIPP is “on track” will be analysed in detail in the light of its Log Frame and Theory of Change in Section 6 of this report. Overall, the programme is assessed as progressing towards its objectives. However, these cannot be considered as deliverable within the initial three-year timescale of the Vietnam project and the intended Phase 2 will therefore provide essential further support to long-term delivery of the objectives.

c) Collaboration of the programme with park management companies has been productive and highly valued. The participating park managers see themselves as “front runners” in the country’s move towards higher standards of environmental management, with appropriate economic and social progress. The management companies are major investors in the parks and are eager to understand and meet the highest international standards, to secure their current and future client base. GEIPP is seen as helping them to understand and meet these standards. However, it cannot be assumed that cooperation with managers of smaller and less profitable IPs would generate the same level of positive results. It is probable, for example, that such parks and their clients would see fewer benefits from investing their limited time and resources into the pursuit of EIP approaches, which may not offer very tangible benefits for their level of business.

d) Amongst stakeholders, GEIPP is seen as an important player in promoting and supporting the national move towards the eco-industrial approach and standards. Its policy level work is regarded as important, influential and productive and the Vietnam Government is increasingly committed to the adoption of GEIPP standards. It sees these as offering a potential advantage in

attracting regional and international investors to locate production in Vietnam, rather than in competing countries in the region.

However, implementation of national policies and standards is regarded as moving slowly by the more advanced EIPs, which reported a range of initiatives “in the pipeline,” but delayed pending clarity in terms of policies, legislation and acceptable standards (for example, quality of wastewater acceptable for different types of re-use).

It is unrealistic to expect that government processes, from national to local level will rapidly become more streamlined to advance progress of the GEIPP. This reflects the challenges of breaking down long-term processes into funding programme periods. The key barrier to achieving programme objectives is therefore time, which is initially being addressed through the second phase. However, it is considered unlikely that even this continuation will see the achievement of all objectives under the two outcomes.

### 3. Programme approach:

- Design
- relevance
- effectiveness
- efficiency
- programme management

#### i) How well does the GEIPP’s programme approach work?

a) The government is strongly committed to making the Vietnam economy highly competitive regionally and internationally. The global dimension of the programme is therefore important and government would like to be able to “benchmark” the performance of its parks according to GEIPP standards against other countries, both to track progress and to support its competitive advantage.

Similarly, national organisations supporting the EIPs, such as WRI-MONRE, need to ensure that the advice they offer to parks and companies reflects international “cutting edge” thinking and is likely to deliver tangible benefits in terms of cleaner production.

The project office provides a bridge between the global programme and stakeholders at national and sub-national levels, sharing updated information on products and events relevant to the country programme. Overall, stakeholders reported good contacts and support from the project office, linking them to international trends in EIP approaches, which are highly valued. The programme approach is therefore working well, particularly for government and related bodies and for international park management companies running high-performance parks. It is not yet clear that similar benefits will accrue to parks with fewer international stakeholders, operating at a lower level of finance and with a majority of SMEs.

j) How is it different from a compilation of individual projects?

b) The country has not implemented the EIP approach as an internally focused initiative, simply contributing to national targets for environmental management and economic and social development. Rather government stakeholders at various levels (national, city, municipality, Park Management Authority) link EIP to the very competitive market to attract international investors to produce in Vietnam, as well as for national investors to select particular park locations within the country. In this context, awareness of international EIP standards is important to ensure that Vietnam maintains itself as a leading provider of “cutting edge” production facilities. This could not be provided by a “programme”, which is simply a compilation of individual projects.

k) How beneficial is the interplay between the country and global level (Component 1 and 2)?

c) The global programme has been active in producing documents, guidelines, workshop reports and other resources, which the country has used to ensure that it is consistently pursuing approaches supported as best practice by the international community. The interplay between country and global levels is therefore viewed as one of the key benefits of participation in GEIPP, since this enables calibration of the national performance, which would not be possible in a programme with a limited national focus. Support offered by the UNIDO global team was reported to be efficient, of high quality and effective and is highly valued.

l) How useful is the global component of the GEIPP for countries?

e) What is the outreach and perception of the GEIPP beyond the immediate programme stakeholders?

d) For Vietnam, the global component is an essential and highly valued part of UNIDO's support. It is this element, which enables government to promote EIP concepts and approaches as part of its ambition to place the country as a leading investment location for international companies, as well as for key national enterprises. Some stakeholders, including private companies went so far as to propose even stronger contributions from the global component. These ranged from informal performance "benchmarking" through to some form of formal certification of parks in terms of their EIP achievements.

e) The Vietnam programme selected three parks to participate – Hiep Phuoc, Amata and Deep C. These are all well-functioning parks with international management companies and some high-profile clients, both national and international, as well as smaller enterprises. The government Park Management Authorities have also been closely engaged in development of these EIPs. Beyond these immediate stakeholders, a variety of other interested parties have participated in workshops and other events organised by the programme. Considerable interest is said to have been expressed by a range of Park Management Authorities, IP developers and companies to join future phases of the programme, of which at least one more is in planning. Some stakeholders have suggested that the challenge of bringing all levels and sizes of parks into the EIP universe could be addressed by having EIP certification or standards at different levels such as Gold, Silver and Bronze. The current immediate stakeholders cluster around a notional Gold standard, while most of the parks in the country are reputed to be at what could be seen as a Bronze level. It is proposed that such a system could significantly expand the outreach of the programme, since the vast majority of parks cannot envisage reaching the highest standard, even in the long term. This is because some of the standards for EIP status set retrospectively by government cannot be met. For example, many parks have let so much of their land to tenants that they cannot meet new requirements for open space.

4. Programme implementation and adaptive management

- efficiency
- programme management

- monitoring and evaluation
- financial management
- stakeholder engagement and communication

a) Has the programme been implemented efficiently, cost-effectively and been able to adapt to any changing conditions thus far?

a) The mission interacted with stakeholders from central and local government, park management companies, tenants and the funding partners. They all reported that the project office is highly active and has responded well to the evolution of the EIP approach in Vietnam. It is therefore considered efficient, cost effective and adaptable.

b) Will all funds be expended by programme closure?

b) The country project is on track to expend all funds by closure. A second phase, with additional funding, is in preparation.

c) To what extent have programme-level monitoring and evaluation systems, reporting, and communications supported the programme implementation?

c) Programme level monitoring and evaluation has a focus on SMART indicators, mainly of environmental benefits. (Check further). However, to date the most significant results at country level have been in terms of raised awareness among government and private sector stakeholders of the concepts and requirements of EIP approaches. This has led to numerous policy and legal instruments, specifying the requirements for EIPs and their management. Although widely perceived as somewhat slow, these instruments have supported and enabled programme implementation. Global reports and communications have also been followed by government bodies, notably at central and PMA level and used to promote EIP development and implementation.

#### 8. Likelihood of transformative change / sustainability

a) What are the risks that are likely to affect the continuation and expansion of programme results?

a) The Vietnam participation in GEIPP will be continued through a second phase. Since the three participating park management companies are all well-funded and have high technical capacity, it is not clear that they need additional support through UNIDO. RECP assessments and other activities to date have produced modest results at park and company level, which could be followed up through

b) Has the programme put in place mechanisms to ensure sustainability after its completion (in terms of financial, legal, institutional, socio-economic instruments, frameworks or processes)?

paid consultancy support provided through national entities such as WRI, or other means.

The major risk emerging from discussions held by the mission is considered to be how to expand the range of parks and companies involved to adequately reflect different levels of financial and management capacity. The EIP approach should reach varying operating contexts in terms of park scale, location, development history, types of tenants and level of support available from provincial and Park Management Authorities.

The principal challenge to overall country level results is that the GEIPP approach and its implementation in Vietnam could lead to a two-tier system, with a small number of affluent EIPs and their (often major international) companies reaching the desired standards and the great majority of more basic parks, with little or no progress towards EIP intentions. This would have a negative distributional effect, with limited contribution to poverty-related goals and objectives of government, UNIDO and SECO.

b) Since the country project will be continued through a second phase of GEIPP, an element of sustainability has already been put in place. Furthermore, with important support from the project office and UNIDO global resources, the government has enacted many policy and legal measures to promote and delineate further development of EIP.

At Municipal and Park Management Authority level, financial limitations were reported and it was indicated that this factor limits the possibility of existing parks to move towards cleaner production. In this area, it does not appear that the intention to scale up the distribution of EIPs as a means of sustainability has been adequately designed or implemented to reach older and smaller parks, including those with many SMEs.

Overall, the intentions of the GEIPP in Vietnam with regard to socio-economic development are not sufficiently defined to be assessed in terms of results. The same applies with regards to intended gender outcomes. Monitoring in these areas is largely focussed on such aspects as number of female participants in training exercises and female employees. Broader social aspects are reported (if at all) in terms of availability of schools for workers' children and working

c) Are the programme's successful aspects being transferred to appropriate parties,

potential future beneficiaries, and others who could learn from the programme and potentially replicate and/or scale it up in the future?

conditions. However, since the objectives and goals have not been defined within a specific social development framework, it cannot be reported that there are clear results, still less sustainability.

c) In overview, the most successful aspect of the programme in Vietnam is its influence on and assistance to national approaches to Industrial Parks. Although these have been a major part of the country's economic development strategy, their historical environmental performance has been poor. The EIP approach has therefore been seen as an important advance in national policy and practice. Successful aspects have been discussed at a range of meetings and workshops across the country and are gradually being incorporated in national and local policies, legislation and regulations. Given the high degree of government commitment to the EIP approach, it is likely that this will be increasingly incorporated into those existing IPs, which aspire to be recognised as on the "cutting edge" and therefore leading candidates for international and high-profile national investment.

The extent to which EIP approaches can be implemented in the majority of existing IPs, which may be smaller and less sophisticated than the pilot EIP sites, remains to be seen. Given the existing occupancy and layout of many such parks, it will be impossible for them to attain some of the EIP standards. This appears to represent a major challenge to replication and scaling up and holds the potential to create a two-tier system among IPs, to the benefit of more profitable parks with a high profile and international investment. Given the government's emphasis on rapid economic growth, this may be acceptable in the short to medium term. However, in the long term, given the prevalence of IPs across the country, this could heighten the imbalance between "rich" and "poor" parks, with adverse effects on national poverty and equality.

To date, actual production improvements at park or factory level were reported to be on a relatively small scale. Many RECP-type assessments have been conducted in the pilot parks with direct or indirect UNIDO support. Where these have suggested easy and low-cost improvements to production processes, many of these have been adopted. Some have been moved to feasibility study stage, while others are queued and may not be activated for some time. A fundamental challenge to replication or scaling up of effective improvements is the strong culture of commercial confidentiality, particularly among high profile foreign

investors. Park managers and companies confirmed that results perceived to offer production cost savings are seen as a commercial comparative advantage and will not be shared outside of the company, even for neighbours on the park. In one company, this approach is so strong that the branch, which had adopted new approaches claimed that these would not even be shared with other branches of the same company.

## 9. Lessons learned all evaluation criteria

a) What are key lessons learned from country level interventions, including good practices?

d) The over-arching key lesson, which is unlikely to surprise any stakeholders, is that the national level transition from IP to EIP culture is likely to be a long-term process. Lessons from the pilot phase with regard to factors contributing to this time scale include:

- Need to support government to define and specify the national approach to EIP
- Extensive and usually slow-moving processes to prepare, approve and activate policies, legislation, national and local regulations
- Process of raising capacity of national providers of EIP related services and advice
- Strengthening of capacity of Provincial and Park Management Authorities to support, manage and monitor performance of EIPs
- Heightened availability of funds to enable park management companies and appropriate production or distribution entities to assess and plan improved environmental, economic or social management processes
- Development of understanding of potential benefits of transition from IPs to EIPs for small and medium size parks and their tenants
- Strengthened sustainability of EIP approach through attainment of “tipping point” at which the “pull” factors of market forces become more important than the “push” factors of legislative requirements and regulations. Initially, this will particularly affect international production/distribution and park management companies. However, over time this is likely to affect an increasing proportion of national entities, as they seek to establish themselves as of “international standard”.

b) What aspects of the overall GEIPP have been more and which less successful?

- c) What lessons can be drawn from the more and less successful practices in designing, implementing and managing the programme?
- d) aging the programme?

b) **Outcome 1** of the Vietnam country project is assessed as the more successful GEIPP approach to date. Its emphasis on awareness raising, promoting the enabling environment and catalysing enhanced legislative and regulatory frameworks has complemented and enabled government's intentions to strengthen environmental management of national industrial production.

**Outcome 2**, which focusses more on park level implementation and benefits, has so far made less progress. This is seen as inevitable since many proposed park or company level technical improvements have hit barriers in terms of lack of clarity on whether they meet required national or local legal or regulatory standards and requirements. Examples include standards to be met by treated wastewater, before it can be re-used or "sold on," acceptable composition of sludge for agricultural or landscaping purposes, electricity supply standards and quantities enabling sale of surplus to the national grid and many others. The fact that so many potential outputs under Outcome 2 have been delayed illustrates that there is still far to go before all of the necessary or desirable Outcome 1 results are effective.

c) "Big Picture" lessons include the following:

- GEIPP should develop a comprehensive and coherent approach to address the challenges facing low resource IPs serving mainly small and medium size enterprises
- GEIPP should analyse and respond to the danger of becoming a low paid or unpaid consultancy service to high income companies on relatively well-resourced IPs
- GEIPP should explore how to ensure that its global products, standards and guidelines, including those produced with international funding partners, can be effectively "grounded" to provide significant benefits to low-income countries facing major but varying development challenges
- GEIPP urgently needs to develop objectives and approaches to ensure that the programme maximises its contribution to social (including gender) development, poverty reduction, just transition and equity. These aspects currently appear weak and unplanned, lacking any coherent strategy or objectives.

## 7.9 Country SWOT analysis: Vietnam

Implementation Area	Strengths	Weaknesses	Opportunities	Threats
<p><b>Component 2</b></p> <p><i>Generate and disseminate knowledge globally.</i></p>	<p>The government is strongly committed to making the Vietnam economy highly competitive regionally and internationally. The global dimension of the programme is therefore important and government would like to be able to “benchmark” the performance of its parks according to GEIPP standards against other countries, both to track progress and to support its competitive advantage</p> <p>Stakeholders reported good contacts and support from the project office, linking them to international trends in EIP approaches, which are highly valued. The programme approach is therefore working well, particularly for government and related bodies and for international park management companies running high-performance parks.</p>	<p>It is not yet clear that substantial benefits from the global perspective will accrue to parks with fewer international stakeholders, operating at a lower level of finance and with a majority of SMEs.</p>	<p>Some stakeholders, including private companies went so far as to propose even stronger contributions from the global component. These ranged from informal performance “benchmarking” through to some form of formal certification of parks in terms of their EIP achievements.</p> <p>GEIPP should explore how to ensure that its global products, standards and guidelines, including those produced with international funding partners, can be effectively “grounded” to provide significant benefits to low-income countries facing major but varying development challenges</p>	<p>GEIPP urgently needs to develop objectives and approaches to ensure that the programme maximises its contribution to social (including gender) development, poverty reduction, just transition and equity. These aspects currently appear weak and unplanned, lacking any coherent strategy or objectives.</p> <p>Although these critical aspects are ultimately expected to contribute towards results at field level, they need to be based on coherent programme level strategies and objectives at global level. The evaluation did not find evidence of such resources.</p>

	<p>Government stakeholders at various levels link EIP to the very competitive market to attract international investors to produce in Vietnam, as well as for national investors to select particular park locations within the country. In this context, awareness of international EIP standards is important to ensure that Vietnam maintains itself as a leading provider of “cutting edge” production facilities. This could not be provided by a “programme”, which is simply a compilation of individual projects.</p> <p>The global programme has been active in producing documents, guidelines, workshop reports and other resources, which the country has used to ensure that it is consistently pursuing approaches supported as best practice by the international community. The interplay between country and global levels is therefore viewed as one of the key benefits of participation in GEIPP, since</p>			
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	<p>this enables calibration of the national performance, which would not be possible in a programme with a limited national focus. Support offered by the UNIDO global team was reported to be efficient, of high quality and effective and is highly valued.</p>			
<p><b>Component 1</b> <b>Outcome 1</b> <i>Incentivise and mainstream EIP</i></p>	<p>Country commitment is increasingly strong, as government understanding of the approach has developed.</p> <p>Considerable support for the overall programme concept from central and local levels of government.</p> <p>GEIPP policy level work is regarded as important, influential and productive and the Vietnam Government is increasingly committed to the adoption of GEIPP standards. It sees these as offering a potential advantage in attracting regional and international investors to locate production in Vietnam, rather than in competing countries in the region.</p>	<p>Ownership varies among different levels of government and between local authorities, influenced by their access to funds to promote an EIP approach</p>		<p>it takes substantial time for Government support to generate opportunities at the level of individual parks. This requires national legislation and regulation, moving down through the government system to city and local authorities, which have supervision of parks at ground level.</p> <p>It is unrealistic to expect that government processes, from national to local level will rapidly become more streamlined to advance progress of the GEIPP. This reflects the challenges of breaking down long-term</p>

	<p>Beyond the immediate pilot park stakeholders, a variety of other interested parties have participated in workshops and other events organised by the programme. Considerable interest is said to have been expressed by a range of Park Management Authorities, IP developers and companies to join future phases of the programme,</p> <p><b>Outcome 1</b> of the Vietnam country project is assessed as the more successful GEIPP approach to date. Its emphasis on awareness raising, promoting the enabling environment and catalyzing enhanced legislative and regulatory frameworks has complemented and enabled government's intentions to strengthen environmental management of national industrial production.</p>			<p>processes into funding programme periods.</p>
<p><b>Component Outcome 2</b>      <b>1</b></p>	<p>Even high-tech companies reported that RECP reviews produced unexpected opportunities to save energy</p>	<p>Take up of technical improvements appears to be largely driven by park management and</p>	<p>How to expand the range of parks and companies involved to adequately</p>	<p>EIP-promoted areas such as recycling/re-use of wastewater are of interest, but currently</p>

<p>Identify and implement opportunities EIP</p>	<p>and reduce costs, often through simple measures, which they have previously overlooked.</p> <p>Some take up of improved production methods, including energy efficiency, building on reviews conducted with support from GEIPP</p> <p>The more progressive parks are well ahead of the national system in terms of initiatives they would like to take.</p> <p>Collaboration of the programme with park management companies has been productive and highly valued. The participating park managers see themselves as “front runners” in the country’s move towards higher standards of environmental management, with appropriate economic and social progress</p> <p>The most significant results at country level have been in terms of raised awareness among government and private sector stakeholders of</p>	<p>production companies, which already see themselves as market leaders, or potential market leaders.</p> <p>Emphasis on quantitative measures or relatively small environmental gains reduce the value of monitoring system</p> <p>Overall, the intentions of the GEIPP in Vietnam with regard to socio-economic development are not sufficiently defined to be assessed in terms of results.</p> <p>The same applies with regards to intended gender outcomes.</p> <p>Overall, Outcome 2, which focusses more on park level implementation and benefits, has so far made less progress than Outcome 1. This is seen as inevitable since many proposed park or company level technical</p>	<p>reflect different levels of financial and management capacity</p> <p>To expand the outreach of the programme, some stakeholders proposed a formal tiered EIP system (Gold, Silver, Bronze) since the majority of parks cannot envisage reaching the highest standard, even in the long term, but might reach the lower levels and improve performance on GEIPP criteria.</p> <p>GEIPP should develop a comprehensive and coherent approach to address the challenges facing low resource IPs serving mainly small and medium size enterprises</p> <p>GEIPP should analyse and respond to the danger of becoming a low paid or unpaid consultancy service to high income companies on relatively well-resourced IPs</p>	<p>stalled by lack of clarity on approved standards to be adopted.</p> <p>Vietnam has large numbers of IPs with far less capacity for innovation than those in the project to date. Constraining factors for these parks include:</p> <ul style="list-style-type: none"> <li>• Most of land already let for production, removing the possibility to meet new Green Space requirements for EIPs</li> <li>• Predominance of Small, Medium and Micro Enterprises, with less resources and capacity to focus on improved environmental management</li> <li>• Less pressure on smaller companies to meet environmental and social standards to meet market or shareholder pressures</li> <li>• Less focus of park managers on high</li> </ul>
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	<p>the concepts and requirements of EIP approaches</p>	<p>improvements have hit barriers in terms of lack of clarity on whether they meet required national or local legal or regulatory standards and requirements.</p>	<p>standards to attract major international investors.</p> <p>Danger that Vietnam GEIPP could lead to a two-tier system, with a small number of affluent EIPs and their (often major international) companies reaching the desired standards and the great majority of more basic parks, with little or no progress towards EIP intentions.</p> <p>in the long term, given the prevalence of IPs across the country, GEIPP could heighten the imbalance between “rich” and “poor” parks, with adverse effects on social equality and just transition.</p> <p>A fundamental challenge to replication or scaling up of effective improvements is the strong culture of commercial confidentiality,</p>
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				particularly among high profile foreign investors
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## 7.10 List of persons met In Vietnam

### I. Ho Chi Minh city

#### **Hiep Phuoc IP Developer**

1. Mr. Giang Ngoc Phuong, Vice General Director
2. Mr. Ha Minh Thien, Head of Environmental Division
3. Mr. Tran Thanh Tung, Head of Division of Environmental Management, HEPZA
4. Ms. Truong Thi Phuc Diem, Official, Environmental Division

#### **Jotun Co., Ltd**

1. Mr. Nguyen Tri Thien, Head of Safety, Environmental Health and Quality Policy

#### **HEPZA**

1. Mr. PHAM THANH TRUC, Deputy Head of HEPZA
2. Ms. NGUYEN THI LAN HUONG, Head of Administration Division
3. MR. TRAN THANH TUNG, Head of Division of Environmental Management
4. MR. NGUYEN QUOC BAO, Division of Environmental Management.

### II. Dong Nai city

#### **AMATA INDUSTRIAL PARK**

1. MR. PHAM ANH TUAN, Head of Department of Water and Environmental Management
2. MS. NGUYEN THI HOANG PUOC, Head of Department of Customer Care
3. MR. PHAM TIEN TUE, Staff under the Department of Water and Environmental Management
4. MS NGUYEN THI LOAN ANH, Personal assistant to the General Director
5. MR SURAKIJ KIATTHAKORN, General Director.

#### **Dong Nai PMA**

1. Nguyen Huu Nghia, Head of Environmental Division

### III. Hai Phong city

#### **Meeting with Deep C IP**

1. Ms Melissa Slabbaert, Head of QHSE and sustainable Department, Deep C IP
2. Ms Diep Thi Kim Hoan, CEO Office Manager, Deep C IP
3. Ms Nguyen Thi Tuyet Lan, Environmental Manager, Deep C IP
4. Ms Tran Thi Hanh Dung, Sustainability Officer, Deep C IP

#### **Meeting with Shi-Etsu Magnetic Material Vietnam Co. Ltd. In Deep C IP**

1. Ms Nguyen Thi Lien, Manager, Analysis and Environment Department
2. Mr Do Van Hai, Group Leader (Maintenance)
3. Ms Melissa Slabbaert, Head of QHSE and sustainable Department, Deep C IP
4. Ms Diep Thi Kim Hoan, CEO Office Manager, Deep C IP
5. Ms Nguyen Thi Tuyet Lan, Environmental Manager, Deep C IP

6. Ms Tran Thi Hanh Dung, Sustainability Officer, Deep C IP

Meeting with Hai Phong PMA and Community

1. Mr Bui Ngoc Hai, Deputy Head of HEZA
2. Mr Nguyen Duc Thinh, Manager, Entrepreneur Division, HEZA
3. Mr Pham Huu Quang Huy, Manager, Investment Management Division, HEZA
4. Mr Vu Quang, Official, Planning and Construction Management Division, HEZA
5. Mr Nguyen Van Tuan, Vice Chairman of Hai An District People's Committee
6. Mr Nguyen Van Vuong, Official, Natural Resources and Environment Management Division, HEZA

## IV. Ha Noi

Meeting with MOIT

1. Mr. Nguyen Hoang Giang, Deputy General Director, Planning Department, Ministry of Industry and Trade

Meeting with Water Resources Institute (WRI), MONRE

1. Mr. Tran Van Tra, Deputy Director General, WRI
2. Ms. Nguyen Tu Anh, Deputy Director in charge - Department of WR Economics and Management

Meeting with Vietnam Cleaner Production Company

1. Le Xuan Thinh, Director
2. Vu Nang Nam, Technical expert

Meeting with Department of Economic Zones Management (DEZM), MPI

1. Mr. Le Thanh Quan, General Director, DEZM
2. Ms. Vuong Thi Minh Hieu, Deputy General Director, DEZM

Meeting with SECO Ha Noi

1. Mr. Do Quang Huy, National Programme Officer SECO

Meeting (online) with PMU

1. Nguyen Tram Anh, National Technical Specialist



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