

TECHNICAL ASSISTANCE NEEDS
FOR THE TRANSFORMATION
INTO ECO-INDUSTRIAL PARKS

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TECHNICAL ASSISTANCE NEEDS FOR THE TRANSFORMATION INTO ECO-INDUSTRIAL PARKS

Based on assessment of 50 parks in eight countries against the
International Framework for Eco-Industrial Parks



2021

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- » **Colombia:** Parque Industrial Malambo (PIMSA), ZF de Occidente, ZF La Candelaria, ZF del Cauca, ZF del Pacífico;
- » **Egypt:** El Robbiki IP, Polaris International and Al Zamil IP, SIDC Industrial Park (in Suez Canal SEZ);
- » **Indonesia:** Batamindo IP, Bintan Inti, BSBcity, Gresik, Kabil IP, KIIC, Maspion, MM2100, Modern Cikande, Safe n Lock, Suryacipta;
- » **Nigeria:** Calabar Free Trade Zone, Lekki Free Zone; (Nigeria is not participating in GEIPP)
- » **Peru:** Adepia IP, Ancón Private IP, Indupark, La Chutana IP, Lurin IZ, Sector 62 IP;
- » **South Africa:** Atlantis SEZ, Babelegi IP, Bodirelo IP, Botshabelo IP, Dube TradePort SEZ, East London IDZ, Ekandustria IP, Phuthaditjhaba IP, Rosslyn Automotive Supplier Park, Seshego IP, Vulindlela IP;
- » **Ukraine:** IP Agromash (Zaporizhzhia), IP BTsVAK, IP Chemical metallurgical plant, IP Patriot;
- » **Viet Nam:** Amata, Deep C1&C2, Hiep Phuoc, Hoa Khanh, Khanh Phu, Long Thanh, Pho Noi A, Tra Noc 1&2.

The Global Eco-Industrial Parks Programme (GEIPP) (2019-2023) is made possible by funding provided by the Swiss Government through the State Secretariat for Economic Affairs of Switzerland (SECO).

The assessments against the International EIP Framework of two industrial parks in Nigeria (Calabar Free Trade Zone, Lekki Free Zone) and two parks in South Africa (Rosslyn Automotive Supplier Park and Phuthaditjhaba Industrial Park) were produced as part of the assignment "Enabling investments towards EIPs in Nigeria and South Africa", funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) through the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.



ABBREVIATIONS

A2F	Access to Finance
EIP	Eco-Industrial Park
FTZ	Free Trade Zone
GEIPP	Global Eco-Industrial Parks Programme (UNIDO)
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Development Cooperation)
IDZ	Industrial Development Zone
IFC	International Finance Corporation (part of World Bank Group)
IP	Industrial Park
ISO	International Standard Organisation
IZ	Industrial Zone
OH&S	Occupational Health and Safety
PPP	Public Private Partnership
RECP	Resource Efficient and Cleaner Production
SDG	Sustainable Development Goal
SEZ	Special Economic Zone
SME	Small and Medium-sized Enterprise
UNIDO	United Nations Industrial Development Organization
WBG	World Bank Group
ZF	Zona Franca



EXECUTIVE SUMMARY

Introduction

This report is the second publication of the GEIPP's "Lessons Learnt" series aimed at compiling and disseminating results from the Global Eco-Industrial Parks Programme (GEIPP). The programme implements country-level interventions in Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine and Viet Nam. The country-level interventions are supported by a global component that is providing methodological guidance and dissemination of good practices between and beyond GEIPP countries. The program aims at demonstrating the viability and benefits of advancing Eco-Industrial Parks practices at industrial parks in the program countries. The GEIPP is made possible by funding provided by the Swiss Government through the State Secretariat for Economic Affairs of Switzerland (SECO).

Over the past years UNIDO assessed 50 parks in eight countries (the seven GEIPP countries: Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine, Viet Nam as well as Nigeria) against the International Framework for Eco-Industrial Parks. This wealth of data offers the opportunity to analyse the results and extract lessons learnt for moving forward in assisting countries and industrial parks in their efforts for a more resilient, sustainable and socially considerate industrial development. This report provides:

- a) A comparative analysis and lessons learnt on compliance gaps of industrial parks with the International EIP Framework under park management, economic, environmental and social performance; and
- b) Recommended focus areas and types of technical assistance to industrial parks at global and country levels to increase their compliance with the International EIP Framework.

Compliance scorings and overall priority topics

Across all eight countries, the following topics of the International EIP Framework have the lowest baseline compliance scorings: Energy; Local community outreach; Environmental management and monitoring; Park monitoring and risk management; Waste and material use; Climate change and the natural environment. This indicates that technical assistance overall should prioritise these topics.

The types of technical assistance for the EIP transformation typically covers training and capacity building, technical advisory services, facilitation of investment opportunities and policy support. The analysis of the compliance scorings by category and topic can be used by GEIPP as an input to determine the type of required assistance at global and country levels.

Capacity building and advisory services

Common types of capacity building and advisory services are provided in this report to improve the parks' performance on each topic of the International EIP Framework, including the main target group of these efforts (e.g., park management and/or tenant firms) and prioritised countries. Capacity building typically covers both awareness raising and trainings customised to the needs to the targeted stakeholders. Advisory services cover tailor-made expert advices to address a specific opportunities and challenges facing an industrial park and/or tenant firm(s). Capacity building to park management is a key recommendation for almost all topics of the International EIP Framework.

Investment facilitation

Key EIP topics where there is a need to support the industrial parks and tenant firms with the facilitation of investment opportunities are: Planning and zoning; Energy; Water; Waste and materials use; Climate change and the natural environment; Social infrastructure; Local business and SME promotion; and Economic value



creation. Investment facilitation on the topic on “Planning and zoning” seems most needed for Nigeria, South Africa and Ukraine. Social and economic topics which require financial investment show a lower improvement potential compared to environmental and park management topics requiring financial investment. This seems to indicate that the investment facilitation efforts of GEIPP should prioritise environmental and park management topics. Overall, South Africa and Nigeria seem to benefit the most (in terms of their compliance with International EIP Framework) from investment facilitation. Peru shows lower intended improvements on topics which require financial investment, indicating a lower potential to increase their compliance with the International EIP Framework through investment facilitation.

Policy support

The main entry point for the technical assistance on most topics is the park management entity (“bottom-up approach”). However, for a number of topics there is a potential key role for government agencies to support the EIP transformation through policy support (“top-down approach”). Key examples of regulatory challenges faced by industrial park management and tenant firms that would benefit from the strengthening of policy support include: The planning and zoning of industrial parks, expanding the requirements and incentives to industrial parks/firms to address and adapt to climate change, streamlining regulations to facilitate the safe reuse and recycling of industrial by-products and effluent streams between tenant firms.

Comparative country results

Detailed results of the compliance scorings and technical assistance needs for each of the GEIPP countries are included in Annex B of this report (Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine, Viet Nam). The analysis of the country-average compliance scorings and their specific technical assistance will be used as an input for the GEIPP country teams to determine the type of required assistance in the GEIPP country level projects.

Recommendations

Recommendations for (inter)national programmes supporting EIP transformations in specific countries:

- » Use the EIP Assessment Tool (available from: <https://www.greenindustryplatform.org/tools-and-platforms/unidos-eco-industrial-parks-eip-tools-english>) to assess the baseline and intended performance of selected industrial parks in country against the International EIP Framework;
- » Develop a country profile for the EIP transformation of industrial parks (as outlined in Annex B of this report), including levels of baseline and intended performance against the International EIP Framework and priority topics for technical assistance;
- » Plot the results from the EIP assessments (baseline compliance versus improvement potential) for each category of the International EIP Framework and then assess for expected and unexpected results (see Section 4.2 of this report);
- » Perform a root-cause analysis for any expected / unexpected results on specific topics covered by the International EIP Framework;
- » Use the findings and learnings from steps above to scope and prioritise technical assistance activities for the EIP transformation of industrial parks in the country, including capacity building, advisory services, investment facilitation and policy support (see Chapter 4 and Annex B of this report).



Recommendations for national stakeholders (e.g., industrial park management entities, relevant government agencies) in the eight countries assessed in this report:

- » Use the findings and learnings presented in this report to gain a better understanding of the current status of (eco-)industrial parks and potential for the EIP transformation in the country;
- » Use this report as an input to scope and prioritise activities to support industrial parks in their EIP transformation either through “top-down approaches” (policy support) or “bottom-up approaches” (direct support to the industrial parks and tenant firms).

Recommendations for the Global Eco-Industrial Parks Programme:

- » Use the analysis of the compliance scorings and technical assistance options per topic of the International EIP Framework as an input for the planning and scoping of technical assistance activities of the GEIPP country level projects. The provided capacity building and advisory service options need to be adapted and prioritised according to national contexts and needs in the countries;
- » Use the findings and approach of this report for initial scoping of technical assistance to industrial parks and government stakeholders;
- » Introduce the approach in further collaborations between UNIDO and leading international organisations working on EIPs.

Introduction

1



1 INTRODUCTION

1.1 THIS REPORT

This report is the second publication of the GEIPP’s “Lessons Learnt” series aimed at collecting and disseminating results from the Global Eco-Industrial Parks Programme.

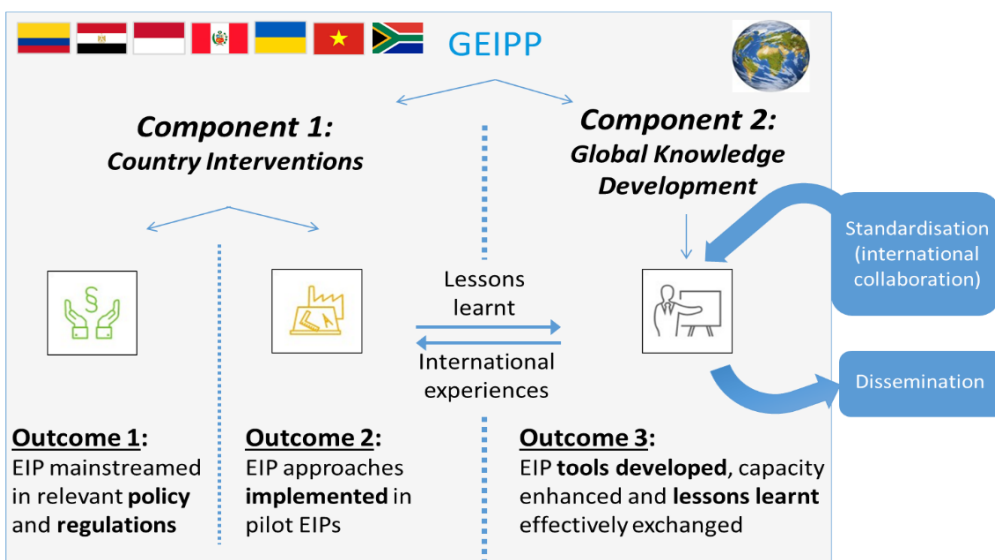
Based on the results of the EIP assessments undertaken with 50 industrial parks in eight countries by UNIDO to date, this GEIPP report reviews and provides insights into the technical assistance needs to transform industrial parks into eco-industrial parks. Specifically, it covers a comparative analysis and lessons learnt on:

- » Compliance gaps of industrial parks with the International EIP Framework under park management, economic, environmental and social performance;
- » Recommended focus areas and types of technical assistance to industrial parks at global and country levels to increase their compliance with the International EIP Framework.

1.2 GLOBAL ECO-INDUSTRIAL PARKS PROGRAMME

The objective of the Global Eco-Industrial Parks Programme (GEIPP) is to demonstrate the viability and benefits of greening industrial parks by improving resource productivity and economic, environmental and social performances of businesses and thereby contributing to inclusive and sustainable industrial development in the participating developing and transition economies.

Figure 1: Overview of Global Eco-Industrial Parks Programme



Component 1 (Country level interventions) implements tailor-made initiatives in seven countries: Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine and Viet Nam, including incentivisation of EIPs in policies/regulations as well as identification and implementation of EIP opportunities in selected industrial parks.

Component 2 (Global Knowledge Development) focuses on the development of specific EIP tools, providing methodological guidance and dissemination of good practices between GEIPP countries and lessons learnt from international experiences.

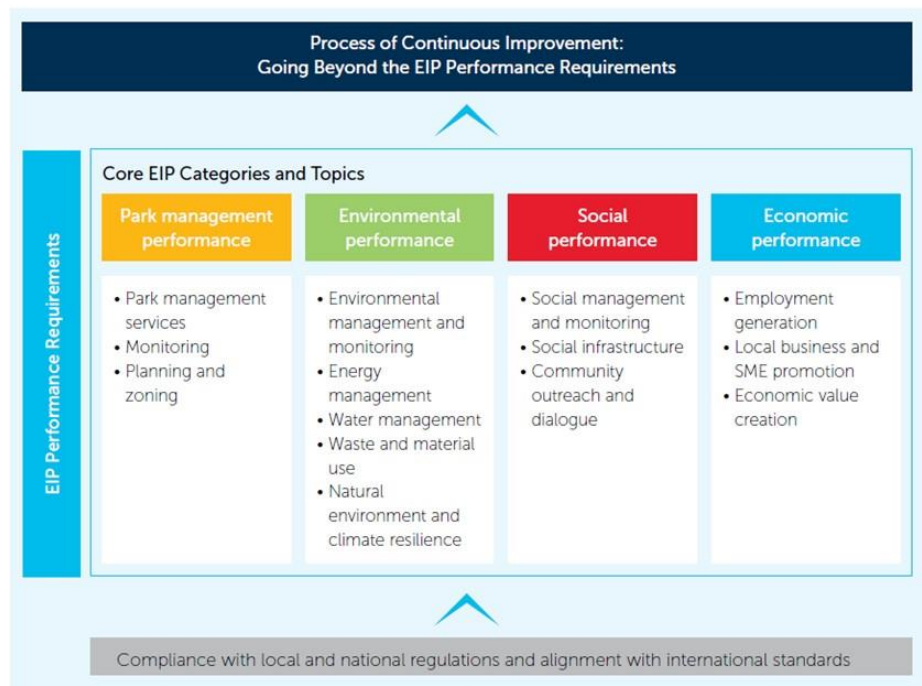


The Global Eco-Industrial Parks Programme (2019-2023) is made possible by funding provided by the Swiss Government through the State Secretariat for Economic Affairs of Switzerland (SECO).

1.3 INTERNATIONAL EIP FRAMEWORK AND ITS APPLICATION

UNIDO, World Bank Group and GIZ (German Development Cooperation) have collaborated to develop an international framework which provides guidance on what constitutes an eco-industrial park and how an industrial park can work towards becoming an eco-industrial park¹.

Figure 2: Overall framework for describing Eco-Industrial Parks (UNIDO, WBG, GIZ, 2017)



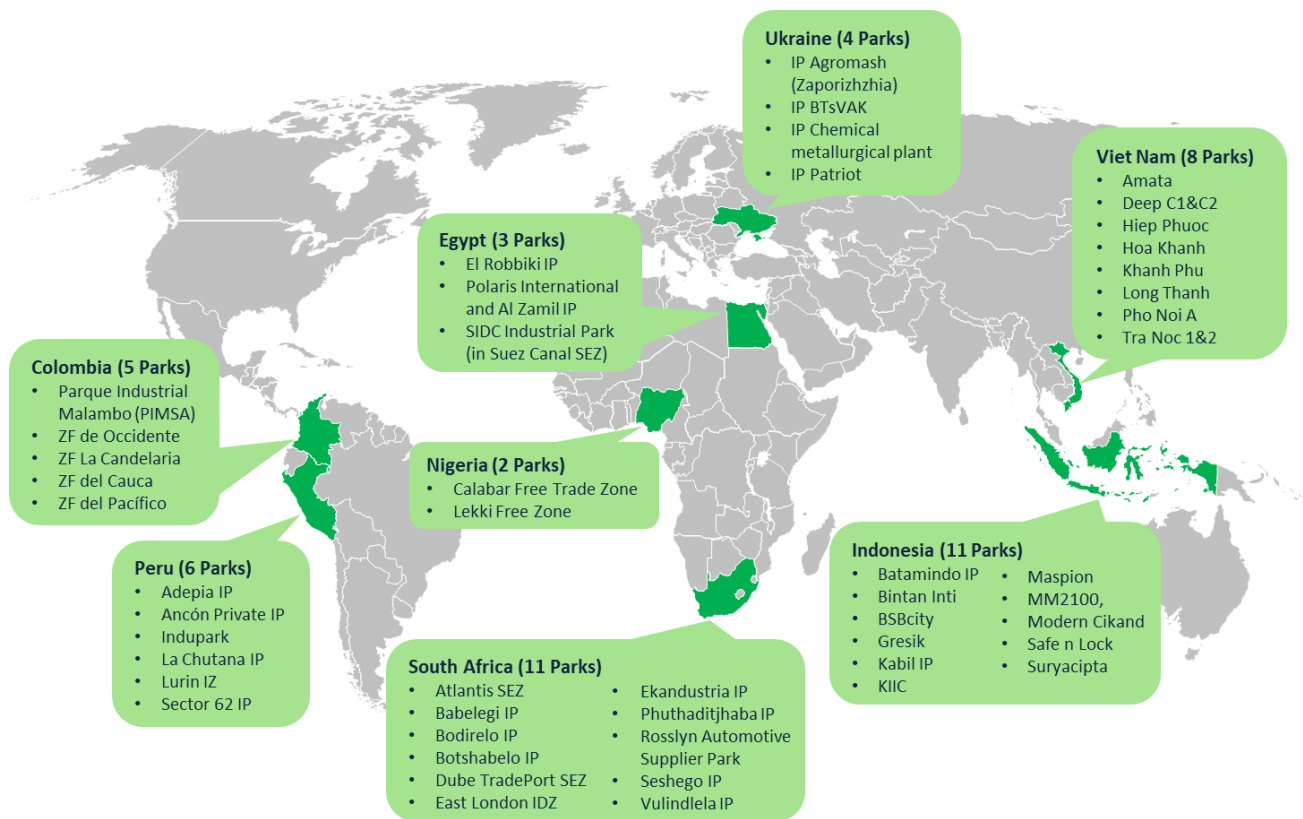
The framework is based on four key categories: Park management performance, environmental performance, social performance, and economic performance. The requirements within each category are divided into “prerequisites” and “performance indicators,” that can be verified and measured in qualitative and/or quantitative terms. The prerequisites highlight the basic requirements for EIPs, and the performance indicators describe expected performance levels that an EIP must meet. As a baseline, industrial parks must comply with all applicable local and national regulations. Further details on the international framework can be downloaded from the publication weblink in the footnote.

To date, 50 industrial parks in eight countries (Colombia, Egypt, Indonesia, Nigeria, Peru, South Africa, Ukraine, and Viet Nam) have been assessed by UNIDO team on their baseline and intended performance against the prerequisites and performance indicators outlined in the International EIP Framework. These parks are presented in Figure 3.

1 UNIDO, WBG, GIZ (2017). An International Framework for Eco-Industrial Parks. <https://openknowledge.worldbank.org/handle/10986/29110>.



Figure 3: Map showing 50 industrial parks in eight countries assessed to date by UNIDO



Methodology

2

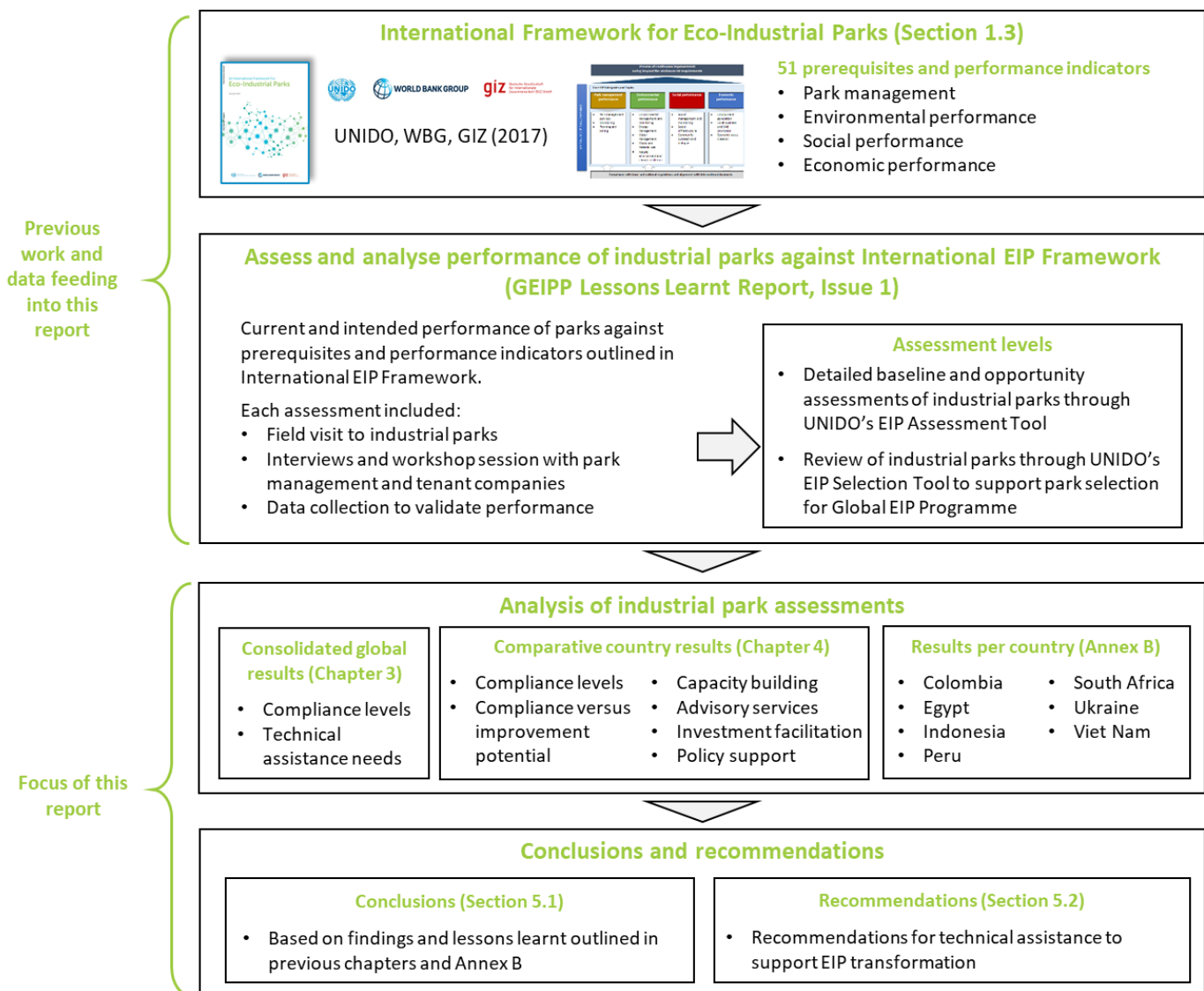




2 METHODOLOGY

The figure below presents the overall methodology applied to identify, review and consolidate the technical assistance needs for the EIP transformations at global and country levels. The figure includes cross-references to relevant chapters in this report. Details of the methodology are included in Annex A and the following chapters. The results per country are provided in Annex B².

Figure 4: Methodology overview



² Note this is provided only for the countries included in GEIPP.

Technical assistance needs:
Consolidated global results

3

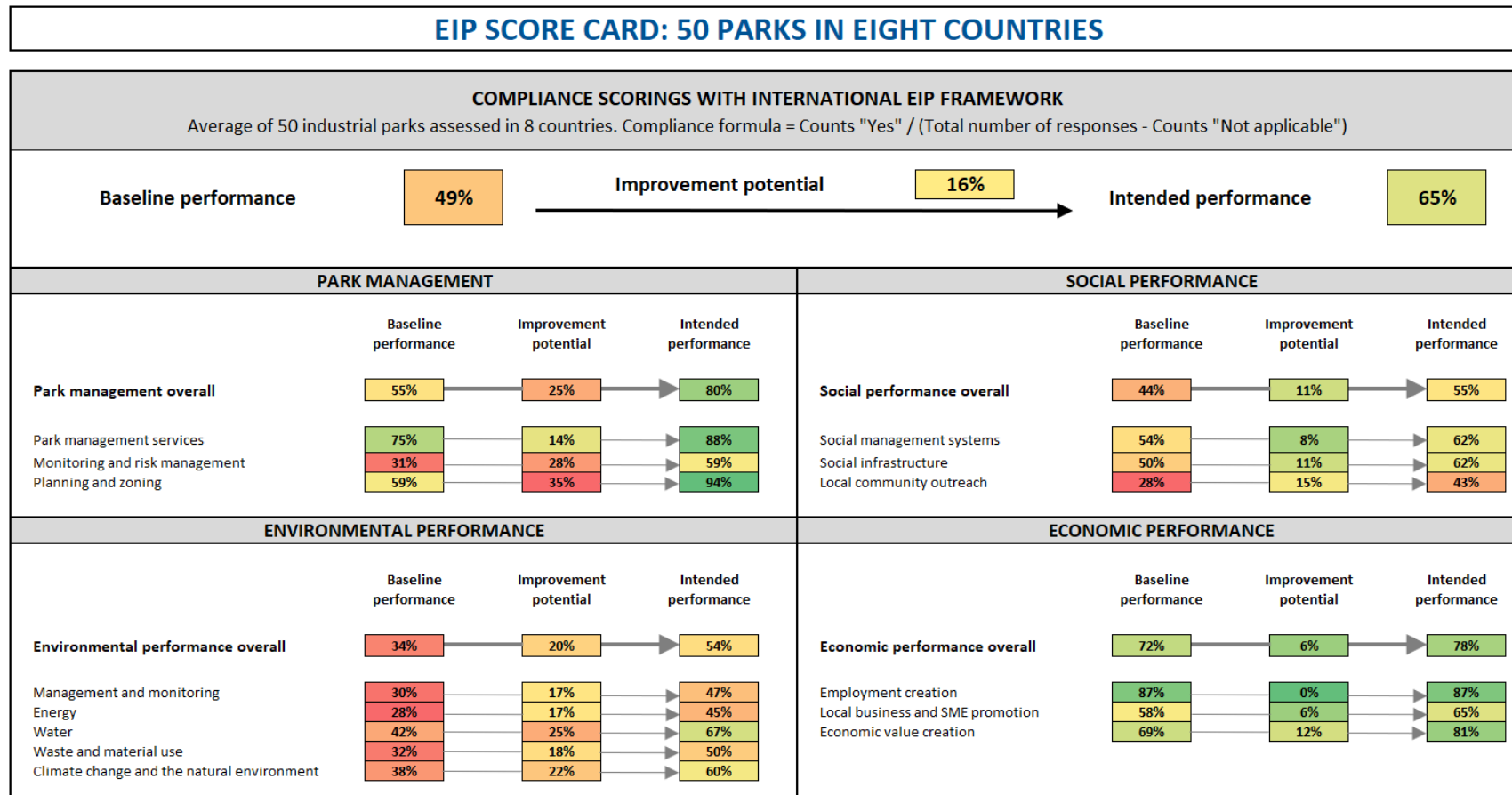


3 CONSOLIDATED GLOBAL RESULTS

3.1 COMPLIANCE SCORINGS

Figure 5 presents the average compliance scorings of the 50 industrial parks assessed in eight countries, organised by the categories and topics of the International EIP Framework. The detailed methodology underpinning this figure is available in GEIPP Lessons Learnt Series, Issue 1; Lessons learnt from assessing 50 Industrial parks in eight countries against the International Framework for Eco-Industrial Parks.

Figure 5: EIP score card at global level





Overall, the baseline compliance of all parks assessed to date is 49% with an intended compliance of 65%, giving an improvement potential of 16% across all eight countries. The environmental and social performance categories have lower compliance (34% and 44% respectively) compared to economic performance (72% baseline compliance) and park management (55% compliance). However, park management shows highest intended improvement potential (25%) compared to other categories.

Across all eight countries, the following topics have the lowest baseline compliance scorings indicating that technical assistance overall should prioritise these topics covered by International EIP Framework:

- » Energy (28%);
- » Local community outreach (28%);
- » Environmental management and monitoring (30%);
- » Park monitoring and risk management (31%);
- » Waste and material use (32%);
- » Climate change and the natural environment (38%).

The following topics have the highest baseline compliance scorings across all eight countries indicating overall that park management and tenant firms need less intensive technical assistance on these topics covered by the International EIP Framework:

- » Employment generation (87%);
- » (Basic) park management services (75%);
- » Economic value creation (69%).

3.2 TECHNICAL ASSISTANCE NEEDS

Table 1 presents a review of the technical assistance needs at global level, based on the EIP assessments of 50 parks across eight countries. The table indicates the types of technical assistance recommended per topic covered by the International EIP Framework.

Key points on the technical assistance for the EIP transformation across all eight countries are:

- » The *types of technical assistance* for the EIP transformation typically cover training and capacity building, technical advisory services, investment facilitation and policy support. Specific topics under park management, economic, environmental and social performance that industrial parks do not fulfill indicate topics for technical assistance. Therefore, the analysis of the compliance scorings by category and topic can be used by GEIPP as an input to determine the type of required assistance at global and country levels;
- » *Common options for technical assistance* are provided in Table 2 in order to work towards meeting specific prerequisites and performance indicators defined under each topic. The list of provided technical assistance options is not all-inclusive. It is up to each GEIPP country team to review the applicability of each option for their respective country and industrial parks;
- » *Training and capacity building* to park management is a key recommendation for almost all topics. Capacity building to tenant firms covers all environmental topics as well as most topics under social and economic performance. Often, when working on the EIP transformation of industrial parks, capacity building sessions to park management and tenant firms can be combined on topics of common interest (e.g. development of industrial synergies, park management services to tenant firms, access-to-finance). On the other hand, certain EIP topics are most relevant either to park management (e.g. EIP concept design planning, EIP baseline assessment) or tenant firms (e.g. resource efficient and cleaner production);



- » The main entry point for the technical assistance to the parks on most topics is the park management entity and the tenant companies in the parks (“bottom-up approach”). However, for a number of topics there is a potential key role for government agencies to support the EIP transformation through policy support (“top-down approach”). Examples of regulatory challenges faced by industrial park management and tenant firms that would benefit from the strengthening of policy support include: The planning and zoning of industrial parks, expanding the requirements and incentives to industrial parks/firms to address and adapt to climate change, streamlining regulations to facilitate the safe reuse and recycling of industrial by-products and effluent streams between tenant firms;
- » For the EIP transformation and technical assistance to industrial parks it is key to focus on the implementation of both short-term (up to 2 years) as well as medium-/long-term initiatives (up to 5 years). The short-term initiatives should focus on low cost and “quick win” measures to deliver concrete benefits and thereby secure ongoing commitment and interest amongst park stakeholders to the EIP concept. The medium-term initiatives should focus more on investment opportunities which deliver strategic and substantial benefits to the park and its stakeholders. In this regard, Table 1 highlights topics where there is a need for support industrial parks and tenant firms with the facilitation of investment opportunities (e.g. Planning and zoning; Energy; Water; Waste and materials use; Climate change and the natural environment; Social infrastructure; Local business and SME promotion; and Economic value creation).



Table 1: Review of technical assistance needs at global level

INTERNATIONAL EIP FRAMEWORK		BASELINE COMPLIANCE	TYPE OF TECHNICAL ASSISTANCE NEEDS						
Topic	Number of prerequisites & indicators		All country ratings	TRAINING AND CAPACITY BUILDING		TECHNICAL ADVISORY SERVICES		FACILITATE INVESTMENT	POLICY SUPPORT
				To park management	To tenant companies	To park management	To tenant companies		
PARK MANAGEMENT									
(Basic) park management services	4	75%	X		X				
Monitoring and risk management	4	31%	X		X				
Planning and zoning	1	59%	X		X		X	X	
ENVIRONMENT									
Management and monitoring	2	30%	X	X					
Energy	6	28%	X	X	X	X	X	X	
Water	4	42%	X	X	X	X	X	X	
Waste and material use	3	32%	X	X	X	X	X	X	
Climate change and the natural environment	5	38%	X	X		X	X	X	
SOCIAL									
Social management systems	6	54%	X	X	X				
Social infrastructure	5	50%	X	X	X		X		
Local community outreach	2	28%	X		X				
ECONOMIC									
Employment generation	3	87%		X					X
Local business & SME promotion	3	58%	X	X			X		
Economic value creation	3	69%	X		X		X		



Table 2: Common technical assistance options per topic of the International EIP Framework

Topics in International EIP Framework	Common technical assistance options
Park management	
(Basic) park management services	<ul style="list-style-type: none"> • Set up and operate a well-functioning park management entity. • Manage and maintain park property, infrastructure, and services. • Set up and effectively operate contracts/charters/agreements with tenant companies. • Provide services and common infrastructures which meet demands of existing and new tenant companies.
Monitoring and risk management	<ul style="list-style-type: none"> • Set up and maintain a monitoring system for economic, environmental and social performance of park and critical risks. • Set up and maintain a plan to react to possible negative impacts due to climate change risks. • Set up and maintain a functioning system to comply with regulations and international standards. • Set up and maintain sustainability reporting for the park (e.g., in line with International EIP Framework).
Planning and zoning	<ul style="list-style-type: none"> • Develop an industrial park Master Plan incorporating all key building blocks of Master Planning and embedding EIP approaches.
Environment	
Management and monitoring	<ul style="list-style-type: none"> • Set up and maintain environmental / energy management system for industrial park. • Set up and maintain environmental / energy management system.
Energy	<ul style="list-style-type: none"> • Energy efficiency and RECP related approaches. • Identify and assess available waste heat sources in the park. • Monitoring energy within the operation of park and tenant companies (with the aim to reduce consumption). • Identify and assess renewable energy opportunities in the park, including feasibility studies. • Support access-to-finance investigations. • Set carbon and energy intensity targets and supporting action planning.
Water	<ul style="list-style-type: none"> • Identify and assess effluent streams in the park operations and tenant companies and conduct feasibility studies on potential reuses. • Water efficiency and RECP related approaches. • Water stewardship. • Industrial effluent treatment standards and treatment processes. • Identify and assess industrial effluent reuse opportunities in the park and feasibility studies on potential reuses.
Waste and material use	<ul style="list-style-type: none"> • Identify and assess available waste and materials streams in the park, and feasibility studies on potential reuses. • Resource efficiency and RECP related approaches. • Material stewardship. • Waste management practices, standards and treatment processes. • Identify and assess waste avoidance, minimisation, reuse/recycling opportunities in the park and related feasibility studies.



Topics in International EIP Framework	Common technical assistance options
Climate change and the natural environment	<ul style="list-style-type: none"> • Monitoring, managing, and minimizing GHG emissions. • Assess operational environmental impact and minimize impacts on prioritized ecosystems. • Sustainable and low water-use park landscaping, including use of native flora and fauna. • Pollution prevention and emission reduction strategies. This could be included in the overall RECP trainings to companies. • Set up and maintain risk management frameworks.
Social	
Social management systems	<ul style="list-style-type: none"> • Plan and manage social quality standards. • Set up and maintain Occupational, Health & Safety management system. • Set up and maintain effective and efficient grievance management system. • Set up code of conduct systems to deal with grievances (and other social aspects as required). • Set up and maintain harassment prevention and response system.
Social infrastructure	<ul style="list-style-type: none"> • Review existing social infrastructures in the park and business case development for missing social infrastructures. • Set up and undertake survey with employees working in the park on their satisfaction and suggestions on social infrastructure. • Set up and maintain effective and efficient security management and monitoring system for the park. • Develop skills / vocational training and development programs. • Encourage female workforce to benefit from skills development programmes.
Local community outreach	<ul style="list-style-type: none"> • Undertake community surveys in relation to opportunities, challenges of industrial parks and seeking community feedback. • Set up and deliver community dialogue on ongoing / regular basis.
Economic	
Employment generation	<ul style="list-style-type: none"> • Awareness raising on importance, benefits and lower risks arising from direct employment of workers.
Local business & SME promotion	<ul style="list-style-type: none"> • Promote the establishment of SMEs in industrial park which add value to park and its (larger) tenant companies. • Sustainable and local procurement.
Economic value creation	<ul style="list-style-type: none"> • Develop feasibility studies for promising EIP initiatives, including facilitating access-to-finance. • Attract new and keep existing anchor tenants through EIP and industrial synergy approaches.

Technical assistance needs:
Comparative country results

4



4 COMPARATIVE COUNTRY RESULTS

Detailed results of the compliance scorings and technical assistance needs for each of the GEIPP countries (Colombia, Egypt, Indonesia, Peru, South Africa, Ukraine, Viet Nam) are included in Annex B of this report.

4.1 COMPLIANCE SCORINGS

The analysis of the country-average compliance scorings can be used as a basis to determine the type of required technical assistance for specific countries. Organised by the key topics of the International EIP Framework, Table 3 illustrates the average compliance scorings of the assessed industrial parks per country and thereby also the levels of recommended technical assistance.

Table 3: Summary of average compliance scorings at country level

INTERNATIONAL EIP FRAMEWORK Topic	Level of baseline compliance - Analysis of "Yes" ratings - Average per topic Formula = Counts "Yes" / (Total number of responses - Counts "Not applicable").							
	COLOMBIA	EGYPT	INDONESIA	NIGERIA	PERU	SOUTH AFRICA	UKRAINE	VIET NAM
	5 parks	3 parks	11 parks	2 parks	6 parks	11 parks	4 parks	8 parks
PARK MANAGEMENT								
(Basic) park management services	100%	75%	91%	75%	50%	61%	56%	88%
Monitoring and risk management	30%	25%	48%	50%	0%	36%	0%	59%
Planning and zoning	100%	100%	100%	0%	50%	36%	0%	88%
ENVIRONMENT								
Management and monitoring	60%	33%	50%	25%	33%	14%	0%	25%
Energy	33%	22%	20%	17%	36%	27%	21%	46%
Water	60%	17%	47%	25%	63%	25%	44%	56%
Waste and material use	47%	0%	65%	0%	22%	24%	58%	38%
Climate change and the natural environment	52%	40%	45%	30%	30%	40%	25%	43%
SOCIAL								
Social management systems	77%	39%	88%	67%	25%	65%	33%	40%
Social infrastructure	58%	57%	73%	60%	30%	38%	45%	43%
Local community outreach	40%	0%	68%	50%	0%	14%	38%	13%
ECONOMIC								
Employment generation	100%	100%	86%	83%	100%	85%	75%	67%
Local business & SME promotion	73%	44%	45%	67%	33%	67%	100%	38%
Economic value creation	60%	78%	59%	83%	50%	85%	67%	71%



By country, the table above illustrates that the following topics have the *lowest* compliance scorings (lower than 40%) indicating that technical assistance overall should prioritise these topics covered by International EIP Framework:

- » *Colombia*: Park monitoring and risk management (30%); Energy (33%); Local community outreach (40%);
- » *Egypt*: Local community outreach (0%), Waste and material use (0%), Water (17%), Energy (22%), Park monitoring and risk management (25%), Environmental management and monitoring (33%), Social management systems (39%);
- » *Indonesia*: Energy (20%);
- » *Nigeria*: Planning and zoning (0%), Waste and material use (0%), Energy (17%), Environmental management and monitoring (25%), Water (25%), Climate change and the natural environment (30%);
- » *Peru*: Park monitoring and risk management (0%), Local community outreach (0%), Waste and material use (22%), Social management systems (25%), Social infrastructure (30%), Climate change and the natural environment (30%), Environmental management and monitoring (33%), Local business and SME promotion (33%), Energy (36%);
- » *South Africa*: Local community outreach (14%), Environmental management and monitoring (14%), Waste and material use (24%), Water (25%), Energy (27%), Park monitoring and risk management (36%), Planning and zoning (36%), Social infrastructure (38%);
- » *Ukraine*: Park monitoring and risk management (0%), Planning and zoning (0%), Environmental management and monitoring (0%), Energy (21%), Climate change and natural environment (25%), Social management systems (33%), Local community outreach (38%);
- » *Viet Nam*: Local community outreach (13%), Environmental management and monitoring (25%), Waste and material use (38%), Local business and SME promotion (38%), Social management systems (40%).

Table 4 presents a detailed comparison of the country-averages of the baseline and intended performance as well as the improvement potential.



Table 4a: EIP score cards at country levels (Colombia, Egypt, Indonesia, Nigeria)

EIP SCORE CARDS: COUNTRY LEVELS													
INTERNATIONAL EIP FRAMEWORK (UNIDO, WORLD BANK, GIZ, 2017)		Level of compliance - Assessed industrial parks Analysis of "Yes" ratings Formula = Counts "Yes" / (Total number of responses - Counts "Not applicable")											
Topic	Number of prerequisites & indicators per topic	COLOMBIA			EGYPT			INDONESIA			NIGERIA		
		Baseline performance	Improvement potential	Intended performance	Baseline performance	Improvement potential	Intended performance	Baseline performance	Improvement potential	Intended performance	Baseline performance	Improvement potential	Intended performance
OVERALL EIP SCORE	51	64%	9%	73%	45%	18%	63%	63%	13%	76%	45%	23%	69%
PARK MANAGEMENT		77%	12%	88%	67%	14%	81%	80%	9%	88%	42%	46%	88%
(Basic) park management services	4	100%	0%	100%	75%	8%	83%	91%	2%	93%	75%	25%	100%
Monitoring and risk management	4	30%	35%	65%	25%	33%	58%	48%	23%	72%	50%	13%	63%
Planning and zoning	1	100%	0%	100%	100%	0%	100%	100%	0%	100%	0%	100%	100%
ENVIRONMENT		50%	17%	67%	22%	32%	55%	45%	21%	67%	19%	29%	48%
Management and monitoring	2	60%	10%	70%	33%	17%	50%	50%	27%	77%	25%	50%	75%
Energy	6	33%	17%	50%	22%	17%	39%	20%	23%	42%	17%	33%	50%
Water	4	60%	30%	90%	17%	50%	67%	47%	28%	75%	25%	25%	50%
Waste and material use	3	47%	20%	67%	0%	44%	44%	65%	9%	74%	0%	17%	17%
Climate change and the natural	5	52%	8%	60%	40%	33%	73%	45%	18%	64%	30%	20%	50%
SOCIAL		58%	0%	58%	32%	10%	41%	76%	15%	91%	59%	9%	68%
Social management systems	6	77%	0%	77%	39%	22%	61%	88%	6%	94%	67%	8%	75%
Social infrastructure	5	58%	0%	58%	57%	7%	63%	73%	20%	92%	60%	20%	80%
Local community outreach	2	40%	0%	40%	0%	0%	0%	68%	18%	86%	50%	0%	50%
ECONOMIC		78%	3%	81%	74%	7%	81%	64%	3%	67%	78%	6%	83%
Employment generation	3	100%	0%	100%	100%	0%	100%	86%	-12%	74%	83%	0%	83%
Local business & SME promotion	3	73%	0%	73%	44%	11%	56%	45%	3%	48%	67%	17%	83%
Economic value creation	3	60%	10%	70%	78%	11%	89%	59%	18%	77%	83%	0%	83%



Table 4b: EIP score cards at country levels (Peru, South Africa, Ukraine, Viet Nam)

EIP SCORE CARDS: COUNTRY LEVELS													
INTERNATIONAL EIP FRAMEWORK (UNIDO, WORLD BANK, GIZ, 2017)		Level of compliance - Assessed industrial parks Analysis of "Yes" ratings Formula = Counts "Yes" / (Total number of responses - Counts "Not applicable")											
Topic	Number of prerequisites & indicators per topic	PERU			SOUTH AFRICA			UKRAINE			VIET NAM		
		Baseline performance	Improvement potential	Intended performance	Baseline performance	Improvement potential	Intended performance	Baseline performance	Improvement potential	Intended performance	Baseline performance	Improvement potential	Intended performance
OVERALL EIP SCORE	51	37%	7%	45%	44%	24%	68%	40%	24%	64%	51%	11%	62%
PARK MANAGEMENT		33%	12%	45%	45%	40%	85%	19%	63%	81%	78%	8%	86%
(Basic) park management services	4	50%	14%	64%	61%	30%	91%	56%	31%	88%	88%	0%	88%
Monitoring and risk management	4	0%	21%	21%	36%	27%	64%	0%	56%	56%	59%	13%	72%
Planning and zoning	1	50%	0%	50%	36%	64%	100%	0%	100%	100%	88%	13%	100%
ENVIRONMENT		37%	8%	45%	26%	28%	54%	30%	14%	43%	41%	11%	52%
Management and monitoring	2	33%	0%	33%	14%	27%	41%	0%	0%	0%	25%	6%	31%
Energy	6	36%	11%	47%	27%	15%	42%	21%	21%	42%	46%	2%	48%
Water	4	63%	13%	75%	25%	34%	59%	44%	13%	56%	56%	9%	66%
Waste and material use	3	22%	17%	39%	24%	27%	52%	58%	0%	58%	38%	13%	50%
Climate change and the natural	5	30%	0%	30%	40%	35%	75%	25%	35%	60%	43%	23%	65%
SOCIAL		18%	9%	28%	39%	16%	55%	39%	23%	61%	32%	9%	41%
Social management systems	6	25%	0%	25%	65%	9%	74%	33%	8%	42%	40%	6%	46%
Social infrastructure	5	30%	3%	33%	38%	16%	55%	45%	10%	55%	43%	15%	58%
Local community outreach	2	0%	25%	25%	14%	23%	36%	38%	50%	88%	13%	6%	19%
ECONOMIC		61%	0%	61%	79%	9%	88%	81%	6%	86%	58%	15%	74%
Employment generation	3	100%	0%	100%	85%	6%	91%	75%	-8%	67%	67%	17%	83%
Local business & SME promotion	3	33%	0%	33%	67%	15%	82%	100%	0%	100%	38%	4%	42%
Economic value creation	3	50%	0%	50%	85%	6%	91%	67%	25%	92%	71%	25%	96%



4.2 COMPLIANCE VERSUS IMPROVEMENT POTENTIAL

Figure 6 provides a comparative review of the countries' baseline compliance scorings and their intended improvements, organised by the main categories of the International EIP Framework (e.g., park management, environmental, social and economic performance). For each of the categories, the average of the baseline compliance and intended improvement for all eight countries is marked with a grey box and horizontal/vertical dashed axis.

If the country-average scoring on the baseline compliance is lower in a specific category, it can generally be expected that the improvement potential in the same category is higher (top left corner in Figure 6). On the other hand, if a country-average baseline compliance scoring is higher, a lower improvement potential can be expected (bottom right corner in Figure 6). It is unexpected if the country-average scorings are in the top right corner (higher baseline compliance and higher intended improvement) or bottom left (lower baseline compliance and lower intended improvement). In these cases, there is a need for analysis and research on the root-causes. An initial analysis of the root-causes is provided in Table 5.

Table 5: Observations for review of baseline compliances versus improvement potentials per country

Category	Key observations	Comments and potential root-causes
Park Management	Expected findings:	
	<ul style="list-style-type: none"> Overall, the park management category is consistent with regards to higher compliance scorings and lower improvement potentials across the countries (and visa versa). 	<ul style="list-style-type: none"> It seems to indicate the robustness of the methodology as the EIP assessments are done through a systematic approach in close collaboration with park management. Most park management prerequisites and performance indicators are under the direct influence of park management entity.
	<ul style="list-style-type: none"> Ukraine, Nigeria and South Africa show lower baseline compliance scorings on park management, but also higher improvement potentials. 	
	<ul style="list-style-type: none"> Egypt, Colombia, Viet Nam and Indonesia are the countries with higher baseline compliance scorings on park management, but also a lower improvement potential. 	
Unexpected findings:		
<ul style="list-style-type: none"> Peru shows a low baseline compliance scoring on park management, but also a low improvement potential. 	<ul style="list-style-type: none"> This inconsistency could indicate that park management entities in Peru are in their earlier maturity stages, and that there is need for awareness raising to park management and also to seek a commitment to higher compliance scorings on park management topics. Higher improvement potential could also be achieved through developing a clear policy vision for EIP transformation in the country. 	
Environmental performance	Expected findings:	
	<ul style="list-style-type: none"> Egypt, Nigeria, South Africa show a lower compliance on environmental topics also have higher improvement potential. 	
Unexpected findings:		
<ul style="list-style-type: none"> Indonesia shows a higher compliance scoring on environmental performance, but also a higher improvement potential. 	<ul style="list-style-type: none"> Overall, Indonesia has a strict enforcement of the environmental regulations for industries, particularly on waste. This creates a setting where already high performing industrial parks and tenant companies are performing even higher in the EIP category environment. However, there is further scope for energy, materials and water efficiency. 	

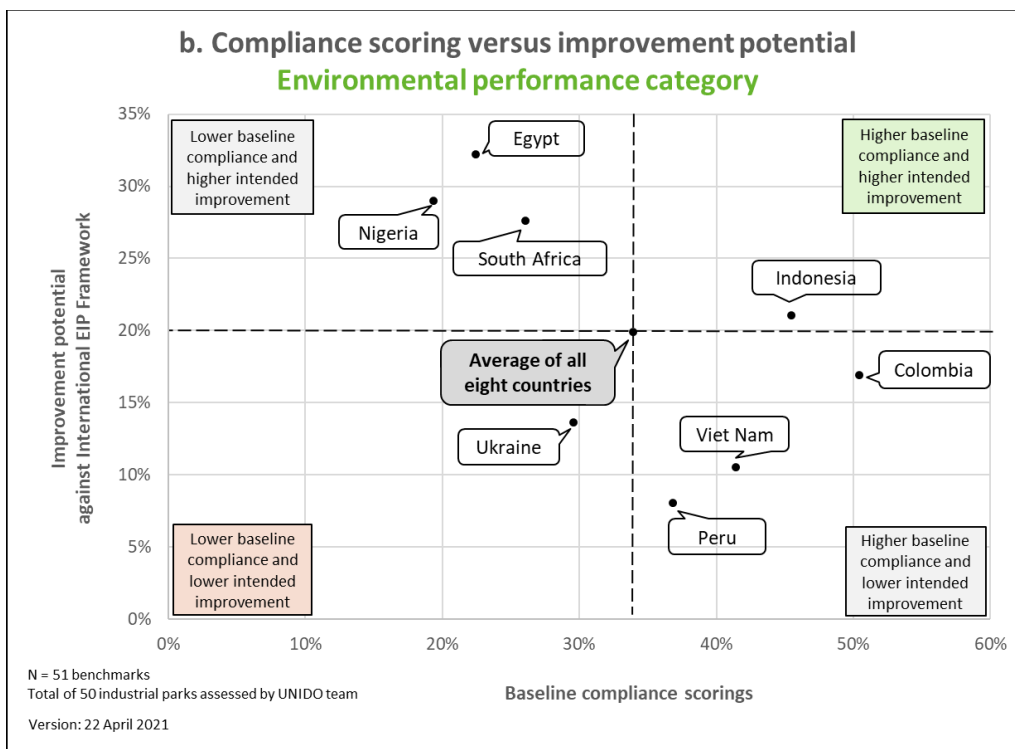
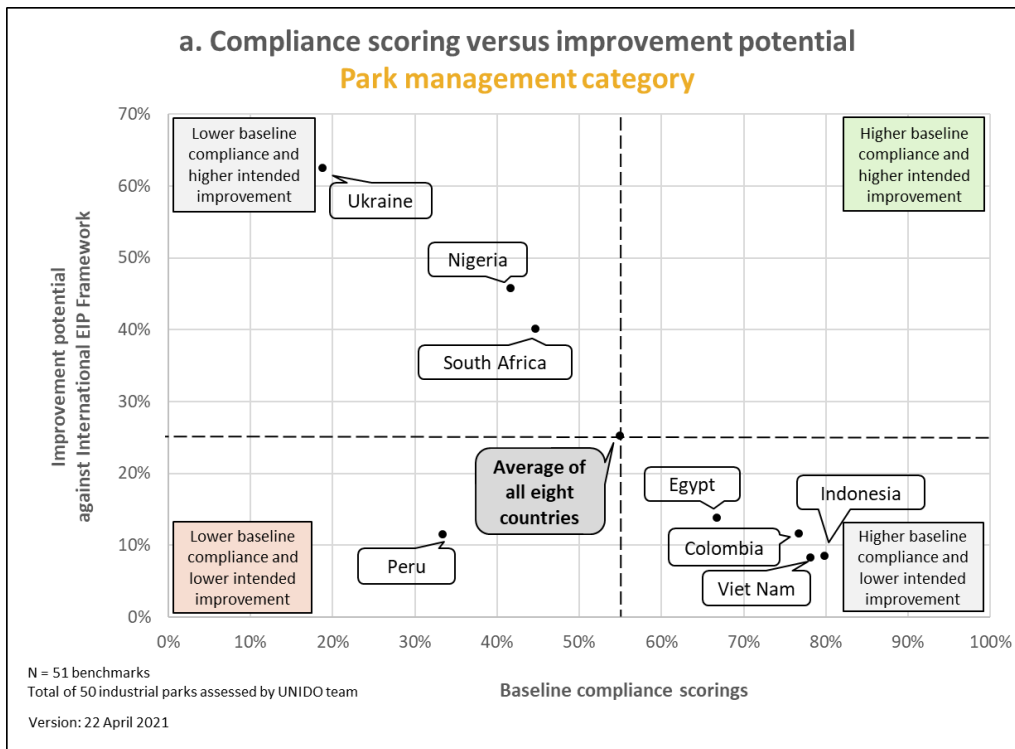


Category	Key observations	Comments and potential root-causes
	<ul style="list-style-type: none"> Ukraine shows a lower baseline compliance scoring on environmental performance, but also a lower improvement potential. 	<ul style="list-style-type: none"> There is a lack of incentives and a weaker enforcement of regulations in the environmental domain. Further the economic benefits of improving environmental performance (e.g., through RECP and EIPs) are not yet widely understood.
Social performance	Expected findings:	
	<ul style="list-style-type: none"> Ukraine and South Africa show lower compliance on social topics, but also have higher improvement potential. 	
	<ul style="list-style-type: none"> Nigeria shows a higher baseline compliance scoring on social topics, but also lower improvement potential. 	
	Unexpected findings:	
	<ul style="list-style-type: none"> Indonesia shows a higher baseline compliance on social performance, but also showing a higher improvement potential. 	<ul style="list-style-type: none"> There is a robust legislation and compliance of social regulations at Indonesian industries, which are followed. There are some aspects like security and primary social infrastructure that parks are keen to strengthen. There is scope and commitment of a stronger community outreach from industrial parks which is reflected in the high improvement potential.
	<ul style="list-style-type: none"> Peru, Egypt and Viet Nam show a lower baseline compliance on social topics, but also a lower intended improvement. Colombia does not show any improvement potential on social performance category. 	<ul style="list-style-type: none"> There may still be formal distance between park management/governance and workers/community in the park. Therefore, there may be a need to create supporting systems on social topics (including community outreach) aiming at addressing social issues collaboratively. To be noted, the indicators in this category require surveys that have not been undertaken to confirm the compliance and the low score in certain countries (e.g., Viet Nam) are attributable to the difficulty in measuring the indicators.
Economic performance	Expected findings:	
	<ul style="list-style-type: none"> Viet Nam shows a lower compliance on economic topics, but also have higher improvement potential. Nigeria, Ukraine and Colombia show a higher baseline compliance scorings on economic topics, but also lower improvement potential. 	
	Unexpected findings:	
	<ul style="list-style-type: none"> South Africa and Egypt show higher baseline compliance scorings on economic performance, but also showing a higher improvement. Peru does not show any improvement potential on economic performance category. 	<ul style="list-style-type: none"> Baseline compliance on “Employment generation” is at 100% already for Peru and South Africa. Countries may have limited incentives for local procurement. Some parks are located in places where there are limited local suppliers. The local economic situation and prospects for attracting tenants may influence the improvement in this category. As parks mature and number of tenants increase, the improvement potential can be expected to rise. There is an opportunity to refine the formulation of performance indicators in a next version of the International EIP Framework (“Park management entity has plans to generate specific numbers and types of jobs in line with government targets”. Details are discussed in issue 1 of the GEIPP Lessons Learnt Report³.

3 UNIDO (2020). Lessons learnt from assessing 50 industrial parks in eight countries against the International Framework for Eco-Industrial Parks. Issue 1 of lessons learnt series of the Global Eco-Industrial Parks Programme.



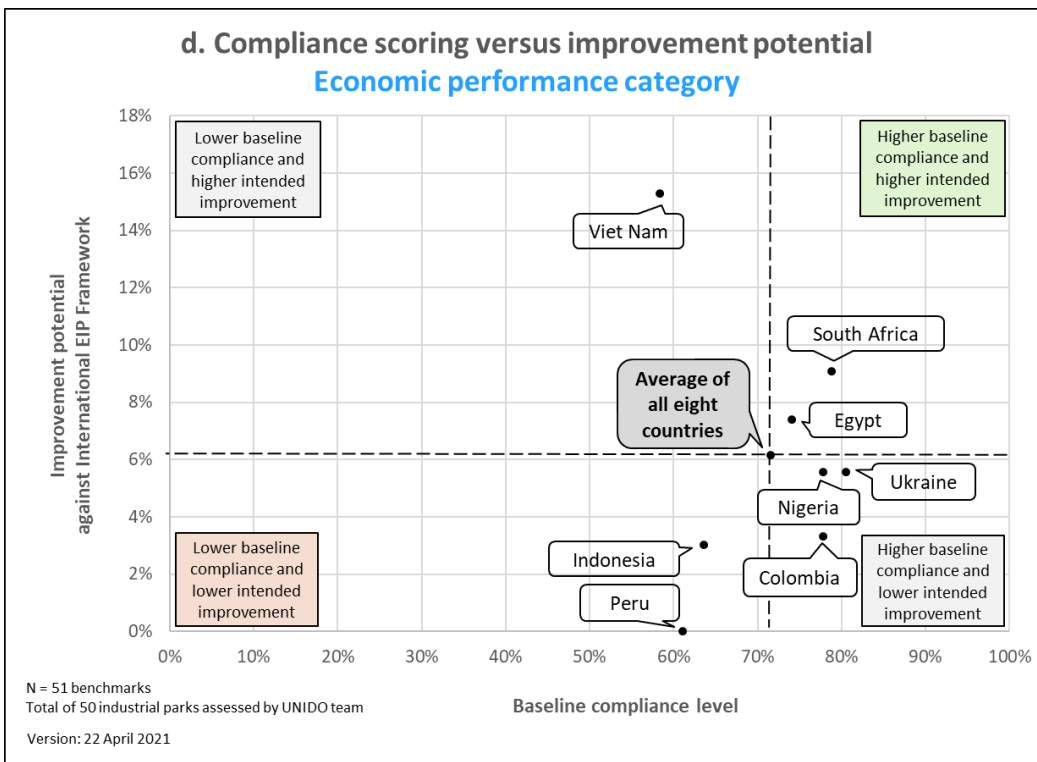
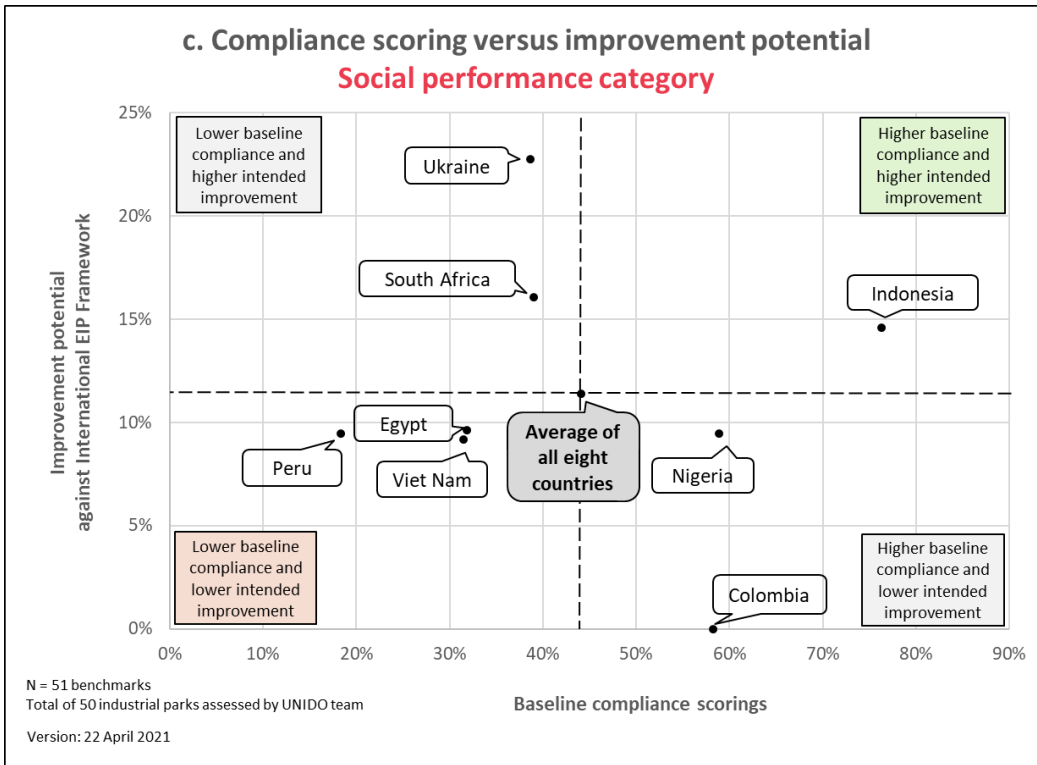
Figure 6 a/b: Baseline compliance scorings versus improvement potentials per country in Park management and Environmental performance categories⁴



4 The vertical and horizontal axis do not have the same scaling in each of the figures in order to show the results most clearly.



Figure 6 c/d: Baseline compliance scorings versus improvement potentials in Social and Economic performance categories per country⁵



⁵ The vertical and horizontal axis do not have the same scaling in each of the figures in order to show the results most clearly.



4.3 CAPACITY BUILDING

Table 6 provides a comparative review of capacity building needs to improve industrial parks' performance on each topic of the International EIP Framework. The table lists the priority countries for each topic. Countries have been prioritised per topic if their baseline compliance scoring is lower than 40%.

Capacity building typically covers both awareness raising and trainings customised to the needs of the targeted stakeholders. The table makes a distinction between trainings focused on technical aspects and management aspects, and outlines the main target groups of the capacity building efforts (e.g., park management and/or tenant firms).

The provided capacity building options need to be reviewed, adapted and prioritised by GEIPP country teams, following the specific national context and training needs in each country.

Table 6: Comparative review of capacity building needs

Topics of International EIP Framework	Priority countries for capacity building Baseline compliance \leq 40%	Main target group for capacity building		Common types of capacity building (e.g., awareness raising and trainings)	
		Park management	Tenant firms	Core focus on technical aspects	Core focus on management aspects
Park management					
(Basic) park management services	Scoring more than 40% compliance in all countries	X		Manage and maintain park property, infrastructure, and services. Provide services and common infrastructures which meet demands of existing and new tenant firms.	Set up and operate a well-functioning park management entity. Set up and effectively operate contracts / charters / agreements with tenant firms.
Monitoring and risk management	Colombia Egypt Peru South Africa Ukraine	X		Set up and maintain a plan to react to possible negative impacts due to extreme weather events and accidents.	Set up and maintain a monitoring system for economic, environmental and social performance of park and critical risks. Set up and maintain a functioning system to comply with regulations and international standards. Set up and maintain sustainability reporting for the park (e.g., in line with International EIP Framework).
Planning and zoning	Nigeria South Africa Ukraine	X		Develop a Master Plan incorporating all key building blocks of Master Planning and embedding EIP approaches.	
Environmental performance					
Management and monitoring	Egypt Nigeria Peru South Africa Ukraine Viet Nam	X	X	Set up monitoring systems within firms and industrial park overall.	Set up, maintain and report on environmental / energy management systems.
Energy	Colombia Egypt Indonesia Nigeria Peru South Africa Ukraine	X	X	Energy efficiency and resource efficient cleaner production, RECP, related approaches. Energy monitoring (including GHGs) and supporting action planning.	Access-to-finance for energy efficiency projects.
Water	Egypt Nigeria South Africa	X	X	Water efficiency and resource efficient cleaner production, RECP, related approaches. Smart water-metering Water stewardship.	



Topics of International EIP Framework	Priority countries for capacity building Baseline compliance ≤ 40%	Main target group for capacity building		Common types of capacity building (e.g., awareness raising and trainings)		
		Park management	Tenant firms	Core focus on technical aspects	Core focus on management aspects	
Waste and material use	Egypt Nigeria Peru South Africa Viet Nam	X	X	Material efficiency and resource efficient cleaner production, RECP, related approaches.		
				Material stewardship, waste exchanges, data systems on waste.		
Climate change and the natural environment	Egypt Nigeria Peru Ukraine	X	X	Pollution prevention and emission reduction strategies.	Set up and maintain risk management frameworks.	
				Monitoring, managing, and minimizing GHG emissions.		
Social performance						
Social management systems	Egypt Peru Ukraine Viet Nam	X	X	Set up monitoring systems within firms and industrial park overall.	Set up, maintain and report on OH&S management systems.	
					Set up, maintain and report on grievance management systems.	
					Set up, maintain and report on harassment prevention and response systems.	
Social infrastructure	Peru South Africa	X	X	Development of park-level social infrastructures and business case development.		
				Develop skills / vocational training and development programs.		
				Set up and maintain security management and monitoring systems.		
Local community outreach	Egypt Peru South Africa Ukraine Viet Nam	X			Undertake community surveys.	
					Set up and deliver community dialogue events.	
Economic performance						
Employment generation	Scoring more than 40% compliance in all countries			X		Sustainable employment contracting (ensure diversity, inclusiveness, long-term employment contracts for workers).
Local business & SME promotion	Peru Viet Nam	X	X			Sustainable and local procurement.
						Promote the establishment of SMEs in industrial park which add value to park and its (larger) tenant firms.
Economic value creation	Scoring more than 40% compliance in all countries					Develop feasibility studies for promising EIP initiatives.
						Access-to-finance.
						EIP concept planning.



4.4 ADVISORY SERVICES

The following table provides a comparative review of technical advisory services to assist industrial parks in their EIP transformation. Same as in previous section on capacity building needs, countries have been prioritised per topic when their baseline compliance scoring is lower than 40%.

Advisory services typically cover tailor-made expert advices to address a specific opportunity and challenges facing an industrial park and/or tenant firms. Table 7 makes a distinction between advisory services focused on technical aspects and management aspects, and outlines the main target group of the advisory services.

It is noted the technical advisory services need to be reviewed, adapted and prioritised by respective GEIPP country teams following the specific national context and needs in the countries.

Table 7: Comparative review of needs for advisory services

Topics of International EIP Framework	Priority countries for capacity building Baseline compliance \leq 40%	Main target group for advisory services		Common types of advisory services (Tailor-made advice to address specific opportunity / challenges of industrial park/tenant firm)	
		Park management	Tenant firms	Core focus on technical aspects	Core focus on management aspects
Park management					
(Basic) park management services	Scoring more than 40% compliance in all countries	X		Effective management and maintenance of park property, infrastructure, and services.	Scope well-functioning park management entity.
				Scope park management services and common infrastructures meeting demands existing and new tenant firms.	Scope contracts / charters / agreements with tenant firms.
Monitoring and risk management	Colombia Egypt Peru South Africa Ukraine	X		Development of a plan to react to possible negative impacts due to extreme weather events and accidents.	Set up a monitoring system for economic, environmental and social performance of park and critical risks.
					Set up a functioning system to comply with regulations and international standards.
					Set up sustainability reporting for the park (e.g., in line with International EIP Framework).
Planning and zoning	Nigeria South Africa Ukraine	X		Develop a Master Plan incorporating all key building blocks of Master Planning and embedding EIP approaches.	
Environmental performance					
Management and monitoring	Egypt Nigeria Peru South Africa Ukraine Viet Nam	X	X	Share international learnings from environmental / energy management systems, and their linkages to EIP approaches.	
Energy	Colombia Egypt Indonesia Nigeria Peru South Africa Ukraine	X	X	Undertake on-site energy efficiency assessments with tenant firms.	Support access-to-finance investigations for energy efficiency projects.
				Identify and assess available waste heat sources in the park.	
				Identify and assess renewable energy opportunities in the park, including feasibility studies.	
				Support energy monitoring (including GHGs) and supporting action planning (with the aim to reduce consumption).	
Water	Egypt Nigeria South Africa	X	X	Undertake on-site water efficiency assessments with tenant firms.	Set-up water-use monitoring system
				Identify and assess available effluent streams in the park, and feasibility studies on potential reuses.	



Topics of International EIP Framework	Priority countries for capacity building Baseline compliance ≤ 40%	Main target group for advisory services		Common types of advisory services (Tailor-made advice to address specific opportunity / challenges of industrial park/tenant firm)	
		Park management	Tenant firms	Core focus on technical aspects	Core focus on management aspects
				Review existing Industrial effluent treatment and recycling and recommend improvements. Support water stewardship assessment for industrial parks.	
Waste and material use	Egypt Nigeria Peru South Africa Viet Nam	X	X	Undertake on-site material/waste efficiency assessments with tenant firms.	Set-up park level waste management committee(s) to find solutions for common waste management challenges and opportunities.
				Identify and assess available waste and materials streams in the park, and feasibility studies on potential reuses.	
				Identify and assess waste avoidance, minimisation, reuse opportunities in the park and feasibility studies.	Set-up water/materials exchange platforms.
				Review existing waste management and treatment practices and recommend improvements. Support material stewardship assessment for industrial parks.	
Climate change and the natural environment	Egypt Nigeria Peru Ukraine		X	Pollution prevention and emission reduction strategies.	Set-up risk management frameworks.
				Assess operational environmental impact and minimize impacts on prioritised ecosystems.	Scope pollution prevention and emission reduction strategies.
				Support monitoring, managing, and minimizing GHG emissions.	
Social performance					
Social management systems	Egypt Peru Ukraine Viet Nam	X			Set up grievance management systems. Set up code of conduct systems to deal with grievance (and other social aspects as required). Set up and maintain harassment prevention and response systems.
Social infrastructure	Peru South Africa	X		Review existing social infrastructures in the park and business case development for missing social infrastructures. Develop skills / vocational training and development programs.	Set up survey with employees working in the park on their satisfaction and suggestions on social infrastructure. Promote female workforce to benefit from skills development programmes.
Local community outreach	Egypt Peru South Africa Ukraine Viet Nam	X			Scope and develop community surveys. Scope community dialogue events.
Economic performance					
Employment generation	Scoring more than 40% compliance in all countries		X	Scope skills and services demand among park tenant companies.	Opportunity assessment to increase diversity, inclusiveness, long-term employment contracts for workers.
Local business & SME promotion	Peru Viet Nam	X	X		Define sustainable and local procurement priorities. Scope opportunities for SMEs to add value to the park and tenant firms.
Economic value creation	Scoring more than 40% compliance in all countries	X		Develop feasibility studies for promising EIP initiatives.	Support access-to-finance investigations for identified EIP opportunities.
				Support EIP concept planning process and advice on incorporating EIP concept into Master Plan.	



4.5 INVESTMENT FACILITATION

For the EIP transformation and technical assistance to the parks it is important to focus on the implementation of both short-term (up to 2 years) as well as medium-/long-term initiatives (up to 5 years and longer). The medium-term initiatives often focus more on investment opportunities which deliver strategic and substantial benefits to the park and its stakeholders.

Topics of the International EIP Framework which require financial investments to ensure their compliance are listed below, including some illustrative examples of typical investments:

- » **Planning and zoning:** Development of a Master Plan for industrial parks incorporating all key building blocks of Master Planning and EIP approaches (e.g. industry clustering, industrial synergies, buffer zones, shared and integrated infrastructures and utilities);
- » **Energy:** Upgrading of existing old technologies with energy efficient equipment for process steam production; invest in industrial heat recovery; invest in improving energy efficiency of buildings;
- » **Water:** Installation of systems for reusing industrial effluents and rainwater/storm water collection; upgrading of old effluent treatment systems to meet regulated water disposal criteria;
- » **Waste and material use:** Installation of hazardous waste collection, storage and disposal systems; integrated resource recovery systems; upgrading of landfill facilities to include waste separation and recycling;
- » **Climate change and natural environment:** Upgrading of old inefficient equipment and technologies which emit high GHG emissions; investment in systems to replace fossil fuels with alternative fuels;
- » **Social infrastructure:** Provision of essential primary social infrastructure to workers in industrial parks and community such as local shops, restaurants/cafeterias, medical and emergency facilities;
- » **Local business and SME promotion:** Establishment of facilities and infrastructures to attract and accommodate SMEs to industrial parks.

It is worthwhile to mention that the value of financial investments can range from ten thousand of US Dollars for equipment modifications on energy, water, and waste, to hundreds of thousands of US Dollars for planning and zoning to millions of US dollars for infrastructure upgrades.

There is a role for GEIPP to assist park management and tenant firms of industrial parks with facilitating investment on the topics listed above. Figure 7 presents the improvement potential of the eight countries for each topic which require financial investment. Figure 8 presents the improvement potential for the same topics, but then organised by country.

Key observations from these two figures with regards to financial investments are:

- » Investment facilitation on the topic “Planning and zoning” seems most needed for Nigeria, South Africa and Ukraine. Compared to other topics, the improvement potential on planning and zoning is by far the highest for these countries;
- » Social and economic topics which require financial investment show a lower improvement potential compared to environmental and park management topics requiring financial investment. This seems to indicate that the investment facilitation efforts of GEIPP should prioritise environmental and park management topics;
- » Overall, South Africa, Nigeria and Ukraine seems to be countries which would benefit the most (in terms of their compliance with International EIP Framework) from investment facilitation;
- » Peru shows lower intended improvements on the topics which require financial investment, indicating a lower potential to increase their compliance with the International EIP Framework through investment facilitation.



Figure 7: Improvement potential per topic of International EIP Framework which require financial investment

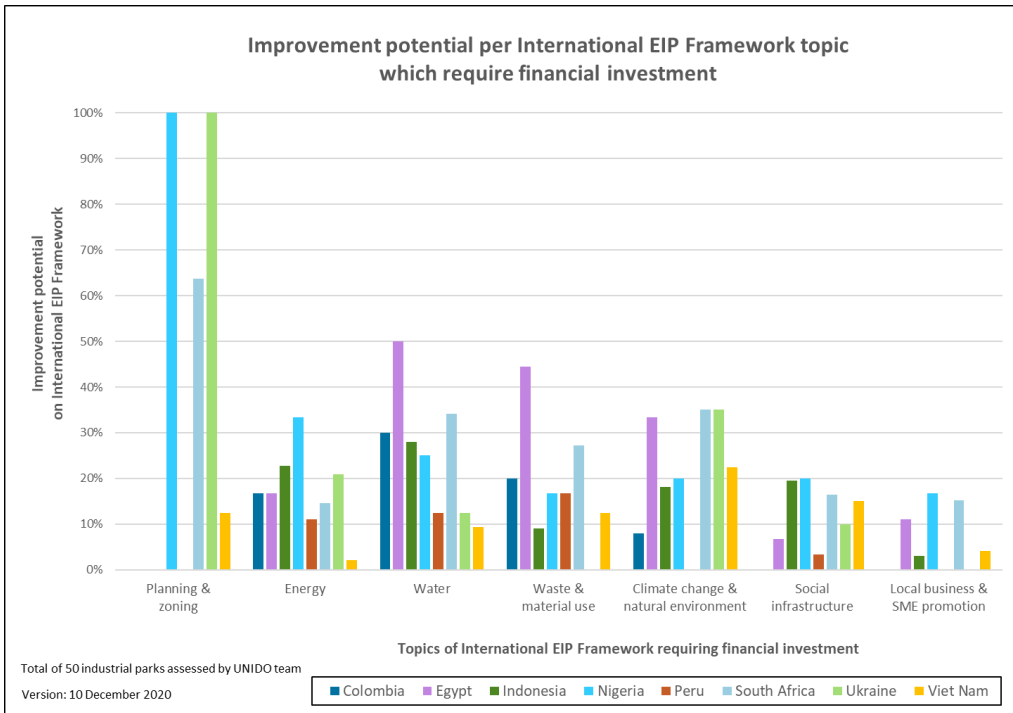
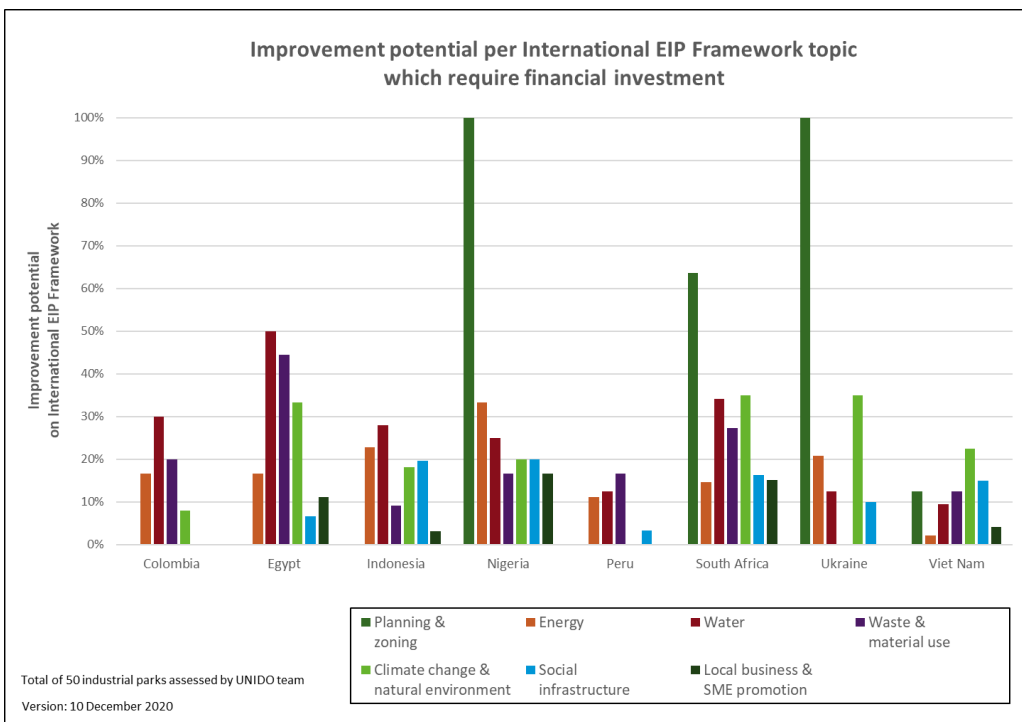


Figure 8: Improvement potential per country of International EIP Framework which require financial investment





4.6 POLICY SUPPORT

Key topics of the International EIP Framework which typically benefit from policy support, including examples on the potential roles of government and enabling policies, are:

- » ***Planning and zoning:*** Policy and government support for industrial parks to develop and maintain their Master Plans, incorporating minimum Master Plan requirements (e.g. effluent treatment, sustainable water supply, integration with surrounding infrastructures, environmental risk and impact assessment, buffer zones);
- » ***Energy:*** Policy incentives for businesses to upgrade their old technologies with energy efficient equipment; Supporting regulations for industrial parks to invest in renewable energy projects which supply energy to tenant firms;
- » ***Water:*** Policies and regulations to enable and encourage the safe reuse of effluent streams between tenant firms and thereby reduce their dependency of drinking water supply schemes;
- » ***Waste and material use:*** Streamlining of regulations to enable and facilitate the safe reuse and recycling industrial by-products;
- » ***Climate change and the natural environment:*** Defining and enforcing requirements and incentives to industrial parks/firms to address and adapt to climate change;
- » ***Employment generation:*** Policies and regulations to encourage local employment and permanent work contracts and set government targets for (green) jobs including supporting incentive schemes.

For the purpose of this analysis, topics which have an improvement potential over higher than 20% in the country are prioritised to be considered for policy support. Based on this prioritisation, and topics listed above which benefit from policy support, Figure 9 provides a comparative review of the share of topics which require policy action in relation to the total number of topics prioritised per country.

Key observations from Figure 9:

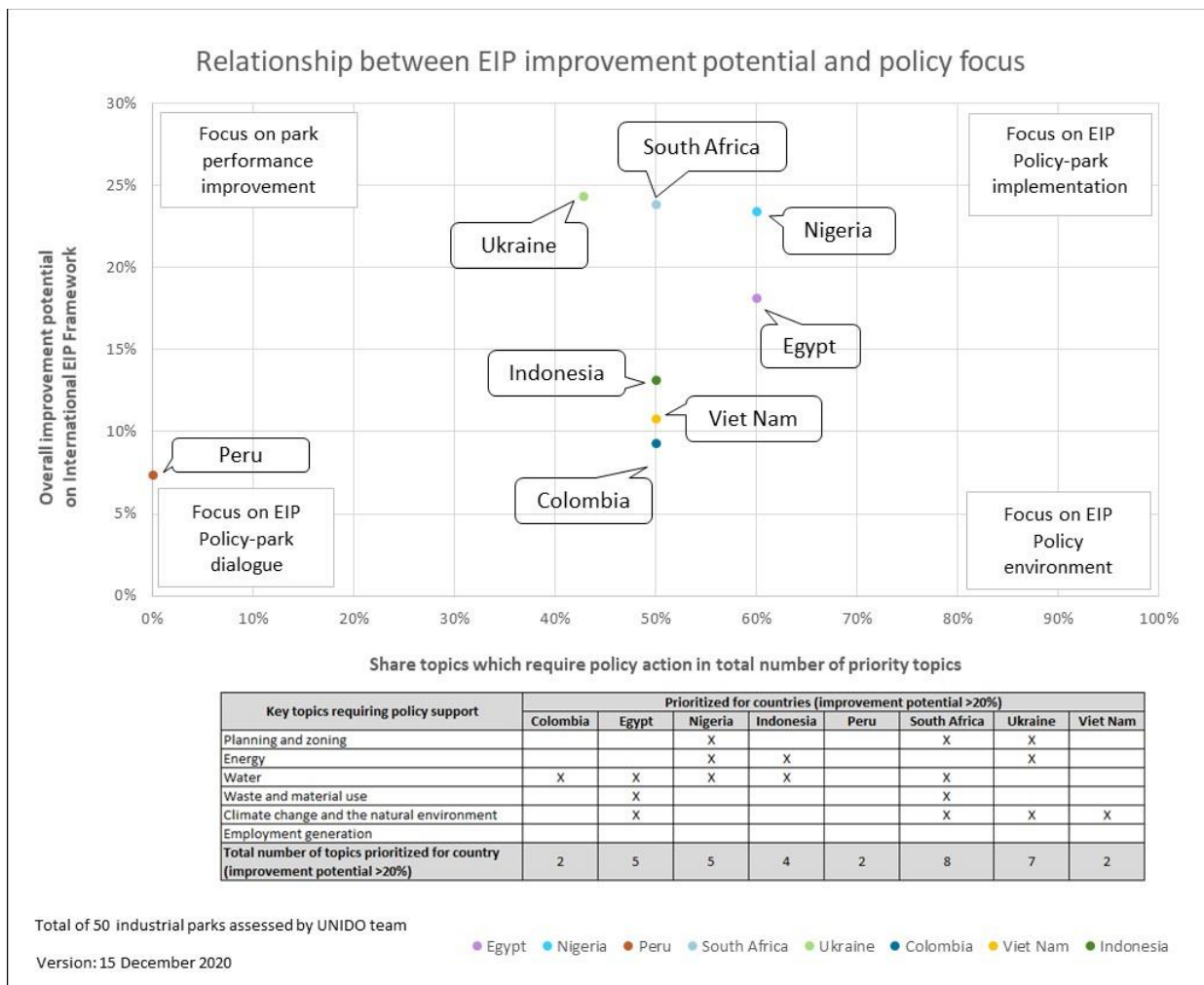
- » Countries with a higher overall improvement potential as well as a higher share of prioritized topics requiring policy action (top right corner of Figure 9), the focus of policy support should be on implementing EIP-related policies. An example of this policy support is ensuring an alignment between waste reuse/recycling regulations and their applicability to industrial parks and their tenant firms. Another example is ensuring that regulations for industrial park Master Planning meet both current and future challenges and opportunities and that planning and zoning are undertaken through multi-stakeholder interactions;
- » Countries where there is a higher overall improvement potential but a lower share of prioritised topics requiring policy action (top left corner of Figure 9), the focus of policy support should be on improving the industrial park performance. These reflect situations where industrial parks may not benefit as much from policy coherence as they are working on multiple EIP opportunities which are in their direct sphere of influence. Improving policy support is not necessarily a first entry point to address EIP challenges and opportunities in these countries;
- » In countries where there is a low overall improvement potential but a higher share of prioritised topics requiring policy action (bottom right corner of Figure 9), the industrial parks are already well performing against the International EIP Framework. Here the focus of policy support should be on further development of an EIP enabling policy environment. For example, policy support in these situations could focus more into the integration of industrial parks with its surrounding regions (e.g. urban-industrial synergies) and the broader industrial-economic system of which the industrial parks are part of;
- » Countries where there is a lower overall improvement potential as well as a lower share of prioritised topics requiring policy action (bottom left corner of Figure 9), the focus of policy support should be on encouraging and facilitating dialogue between industrial parks and policy makers in order to understand their root-causes. These scorings reflect a more challenging situation where parks have a lower baseline



compliance, and there is a perceived limited potential to benefit from existing policies and regulations. To change this situation, there is a need for increase dialogue between the parks, policy makers and other relevant stakeholders (e.g. industry associations) to arrive at more applicable and relevant policies and regulations to support EIP transformations;

- » Peru has a lower overall improvement potential as well as a lower share of prioritised topics requiring policy action. This indicates that there are limited inductive policies in place which support industrial parks in Peru in their transformation into EIPs. Industrial parks in Peru seems to perceive and commit to a low improvement because there is limited policy support available;
- » Nigeria, South Africa and Ukraine show higher intended improvements (23%, 24% and 24% respectively). Nigeria has higher proportion of prioritised topics requiring policy action (60%) compared to South Africa (50%) and Ukraine (43%);
- » Colombia, Indonesia and Viet Nam show similar intended improvements (9%, 13% and 11% respectively). All three countries have a 50% share of prioritised topics requiring policy action.

Figure 9: Relationship between EIP improvement potential and policy focus



Conclusions and recommendations

5





5 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

Based on the results of the EIP assessments undertaken at 50 industrial parks in eight countries, the key conclusions from the review of the technical assistance needs discussed in this report are:

- » **Overall priority topics for EIP technical assistance:** Across all eight countries, the following topics have the lowest baseline compliance scorings: Energy; Local community outreach; Environmental management and monitoring; Park monitoring and risk management; Waste and material use; Climate change and the natural environment. This indicates that technical assistance overall should prioritise these topics covered by International EIP Framework;
- » **The types of technical assistance** for the EIP transformation typically covers training and capacity building, technical advisory services, facilitation of investment opportunities and policy support. Therefore, the analysis of the compliance scorings by category and topic will be used by GEIPP as an input to determine the type and level of required assistance at global and country levels;
- » **Common types of capacity building and advisory services** are provided in this report to improve the parks' performance on each topic of the International EIP Framework, including the main target group of these efforts (e.g. park management and/or tenant firms) and prioritised countries. Capacity building typically covers both awareness raising and trainings customised to the needs to the targeted stakeholders. Advisory services cover tailor-made expert advices to address a specific opportunities and challenges facing an industrial park and/or tenant firm(s). Capacity building to park management is a key recommendation for almost all topics of the International EIP Framework;
- » **Investment facilitation:** Key topics where this a need to support the industrial parks and tenant firms with the facilitation of investment opportunities are: Planning and zoning; Energy; Water; Waste and materials use; Climate change and the natural environment; Social infrastructure; Local business and SME promotion; and Economic value creation. Investment facilitation on the topic on "Planning and zoning" seems most needed for Nigeria, South Africa and Ukraine. Social and economic topics which require financial investment show a lower improvement potential compared to environmental and park management topics requiring financial investment. This seems to indicate that the investment facilitation efforts of GEIPP should prioritise environmental and park management topics. Overall, South Africa, Ukraine and Nigeria seems to benefit the most (in terms of their compliance with International EIP Framework) from investment facilitation. Peru shows lower intended improvements on the topics which require financial investment, indicating lower potential to increase their compliance with the International EIP Framework through investment facilitation;
- » **Policy support:** The main entry point for the technical assistance on most topics is the park management entity ("bottom-up approach"). However, for a number of topics there is potential key role for government agencies to support the EIP transformation through policy support ("top-down approach). Key examples of regulatory challenges faced by industrial park management and tenant firms that would benefit from the strengthening of policy support include: The planning and zoning of industrial parks, expanding the requirements and incentives to industrial parks/firms to address and adapt to climate change, streamlining regulations to facilitate the safe reuse and recycling of industrial by-products and effluent streams between tenant firms;
- » **Country results:** Detailed results of the countries' compliance scorings and subsequent technical assistance needs are included in Annex B of this report. The detailed analysis of the country-average compliance scorings and their specific technical assistance can be used as an input for GEIPP country teams to determine the type and level of required assistance in the GEIPP country level projects.



5.2 RECOMMENDATIONS

Recommendations for (inter)national programmes supporting EIP transformations in specific countries:

- » Use the EIP Assessment Tool (available from: <https://www.greenindustryplatform.org/tools-and-platforms/unidos-eco-industrial-parks-eip-tools-english>) to assess the baseline and intended performance of selected industrial parks in country against the International EIP Framework;
- » Develop a country profile for the EIP transformation of industrial parks (as outlined in Annex B of this report), including baseline and intended performance levels against the International EIP Framework as well as priority topics for technical assistance;
- » Plot the results from the EIP assessments (baseline compliance versus improvement potential) for each category of the International EIP Framework and then assess for consistent and unexpected results (see Section 4.2 of this report);
- » Perform a root-cause analysis for any expected / unexpected results on specific topics covered by the International EIP Framework;
- » Use the findings and learnings from steps above to scope and prioritise technical assistance activities for the EIP transformation of industrial parks in the country, including capacity building, advisory services, investment facilitation and policy support (as provided in Chapter 4 and Annex B of this report).

Recommendations for national stakeholders (e.g., industrial park management entities, relevant government agencies) in the eight countries assessed in this report:

- » Use the findings and learnings presented in this report to gain a better understanding of the current status of industrial parks and potential for EIP transformation in the country;
- » Use this report as an input to scope and prioritise activities to support industrial parks in their EIP transformation either through “top-down approaches” (policy support) or “bottom-up approaches” (direct support to the industrial parks and tenant firms).

Recommendations for the Global Eco-Industrial Parks Programme:

- » Use the analysis of the compliance scorings and technical assistance options per topic of the International EIP Framework as an input for the planning and scoping of technical assistance activities of the GEIPP country level projects. The provided capacity building and advisory service options need to be adapted and prioritised according to national contexts and training needs in the countries;
- » Use the findings and approach of this report for initial scoping of the type of technical assistance to industrial parks and government stakeholders;
- » Introduce the approach in further collaboration between UNIDO and leading international organisations working on EIPs.

Annex A

Methodology details



ANNEX A: METHODOLOGY DETAILS

Applied EIP tools

Following the development of the International EIP Framework (UNIDO, WBG, GIZ, 2017), an EIP Assessment Tool was developed by UNIDO to operationalise the framework. The EIP Assessment Tool assists industrial parks with (a) assessing their baseline (current) and intended performance against the 51 prerequisites and performance indicators outlined in the International EIP Framework; (b) identifying and prioritising EIP initiatives; and (c) the planning and monitoring prioritised EIP initiatives for the park.

To assist in the prioritisation and selection of industrial parks for their participation in the Global Eco-Industrial Parks Programme, the EIP Assessment Tool provided the approach to assess industrial parks against the International EIP Framework. These assessments were incorporated in UNIDO's EIP Selection Tool.

The EIP Assessment Tool and EIP Selection Tool are part of UNIDO's EIP Toolbox are available from: <https://www.greenindustryplatform.org/tools-and-platforms/unidos-eco-industrial-parks-eip-tools-english>.

EIP assessments

The scope of the analysis of this report covers the results from 50 EIP assessments undertaken through UNIDO in eight countries from January 2018 to July 2020, using the EIP Assessment Tool and EIP Selection Tool.

The assessments of industrial parks against the International EIP Framework covered the following elements:

- » Field visits to industrial parks to get first hand impressions of the set-up, infrastructures, utilities, tenant firms, surrounding communities, local environment, etc;
- » Interviews and workshop session(s) with park management and tenant firms to assess the baseline and intended performance of the industrial park against the prerequisites and performance indicators outlined in International EIP Framework (and subsequently identify and prioritise EIP initiatives for the park as part of the EIP Assessment Tool);
- » Data collection and observations (e.g., through field visits and bilateral discussion) to validate the performance levels against the International EIP Framework.

Definitions, settings and assumptions

The baseline (current) performance applies to the time period when the EIP assessments of an industrial park has been undertaken (e.g., January 2018 to June 2020 in the context of this work). The intended performance of a park is the proportion of the EIP prerequisites and performance indicators which park management and tenant firms envisage to meet with the required technical assistance by 2024, the end of the current phase of the GEIPP.

The improvement potential for an industrial park is difference between their baseline (current) performance against the International EIP Framework and their intended performance.

Within the context of UNIDO's work on assessing the performance of industrial parks, the total EIP scoring is defined as the total share of the 51 prerequisites and performance indicators of the International EIP Framework which are met by an industrial park. All prerequisites and performance indicators are counted equally in the total EIP scoring, covering the following categories and topics:



- » Park management (6 prerequisites, 3 performance indicators): Park management services, Monitoring, Planning and Zoning;
- » Environmental performance (6 prerequisites, 14 performance indicators): Environmental management and monitoring, Energy management, Water management, Waste and material use, Natural environment and climate resilience;
- » Social performance (2 prerequisites, 11 performance indicators): Social management and monitoring, Social infrastructure, Community outreach and dialogue;
- » Economic performance (4 prerequisites, 5 performance indicators): Employment creation, Local business and SME promotion, Economic value creation.

Currently, UNIDO's EIP assessments of industrial parks apply the following options for rating the baseline and intended performance of industrial parks against each prerequisite and performance indicator outlined in the International EIP Framework:

- » "Yes": Industrial park fully meet the prerequisite / performance indicator;
- » "No": Industrial park fully does not meet the prerequisite / performance indicator;
- » "Partly": Industrial park meet large parts of the prerequisite and made efforts to work on this, but requisite is not fully met yet. "Partly" rating is only possible for prerequisites, as performance indicators include percentage levels which are either met or not;
- » "To be confirmed": Further data is required to decide on whether or not park meet the prerequisite / performance indicator;
- » "Not applicable": Prerequisite / performance indicator is not applicable to the industrial park under analysis (e.g., park does not have firms employing more than 250 people).

The formula applied to calculate the proportion of applicable prerequisites and performance indicators which are fully met by industrial parks is as follows:

- » Compliance scoring (%) = Counts "Yes" / (Total number of responses - Counts "Not applicable").

This GEIPP report is based on the hypothesis that the types of required assistance to industrial parks in their transformation towards an EIP is subject to their compliance scorings with the prerequisites and performance indicators outlined in the International EIP Framework. In the context of this report and analysis, low(er) compliance scorings with the prerequisites and performance indicators illustrate a higher need for support to the parks in the respective countries.

Annex B

Results per country



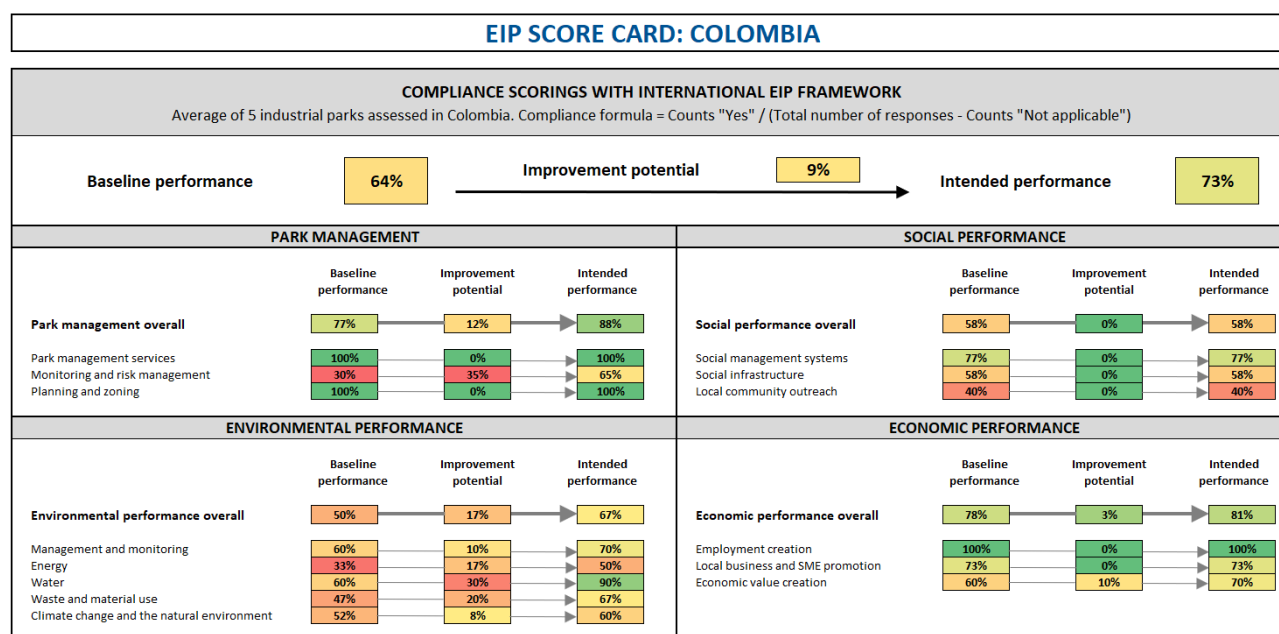
ANNEX B: RESULTS PER COUNTRY

COLOMBIA

Compliance scorings

Figure 10 presents the EIP score card for Colombia, including the baseline and intended compliance scorings for all main categories and topics of the International EIP Framework. The compliance scorings are the calculated averages based on five industrial parks assessed to date in Colombia.

Figure 10: EIP score card for Colombia



Note: Score card is based on International EIP prerequisites and performance indicators which are fully met.

The EIP score card for Colombia illustrates the following:

- » Overall, the average baseline compliance of all five parks assessed in Colombia to date is 64% with an intended compliance of 73%, giving an improvement potential of 9% for the country.
- » Overall performance per topic:
 - The environmental and social performance categories have lower baseline compliance (50% and 58% respectively) compared to economic performance (78%) and park management (77%);
 - Environmental performance and park management categories show highest intended improvement potential (17% and 12% respectively) compared to other categories.
- » Topics with lowest baseline compliance scorings in Colombia are:
 - Park monitoring and risk management (30% compliance);
 - Energy (33% compliance);
 - Local community outreach (40% compliance);
- » Topics with highest improvement potential in Colombia are:
 - Park monitoring and risk management (35% improvement potential);



- Water (30% improvement potential);
- Waste and material use (20% improvement potential).
- » The following topics have *highest compliance scorings* indicating overall that park management and tenant firms in Colombia may need less intensive technical assistance on these topics:
 - (Basic) park management services (100% compliance);
 - Planning and zoning (100% compliance);
 - Employment generation (100% compliance);
 - Social management systems (77% compliance);
 - Local business and SME promotion (73% compliance).
- » Based on current data set, following topics do not seem to have any *improvement potential* in Colombia indicating that there is either limited interest or limited scope to improve compliance on these topics:
 - (Basic) park management services;
 - Planning and zoning;
 - Social management systems;
 - Social infrastructure;
 - Local community outreach;
 - Employment creation;
 - Local business and SME promotion.
- » Topic of “Local community outreach” has a lower baseline compliance (40%) and no intended improvement. For this topic, awareness raising to park management on EIP benefits seems needed for a commitment to a higher intended compliance level.

Technical assistance needs

Table 8 provides a summary of technical assistance needs for industrial parks in Colombia, including (a) main entry points for guiding GEIPP country level activities; (b) indication how many prerequisites/indicators are largely driven either by human efforts or financial investments; and (c) the common types of technical assistance needs across industrial parks in the country.

Based on the EIP scorings, key take home messages from this technical assistance needs review for Colombia are:

- » Park management
 - Topic of “Monitoring and risk management” is prioritised for technical assistance based on its overall intended improvement potential of 35%. Four out of the five parks assessed in the country have an improvement potential of more than 20%, and therefore technical assistance on this topic is recommended across all parks participating in the GEIPP Colombia;
 - Both “Park management services” and “Planning and zoning” have no intended improvement potential and therefore these topics are not recommended for technical assistance;
 - Technical assistance on “Monitoring and risk management” can largely be delivered through working directly with park management entity (“bottom-up approach”), focusing on capacity building and technical advisory services;
 - Enhancing the performance of the parks on “Monitoring and risk management” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on establishing know-how, skills and leadership within park management.



» Environmental performance

- EIP topic of “Water” is prioritised for technical assistance based on its overall intended improvement potential of 30%. Technical assistance on “Water” is recommended across all five parks assessed in the country as each park has improvement potential over 20%;
- “Waste and material use” could also be considered as a priority given its improvement potential of 20% (although it is just under the prioritisation threshold);
- To improve the performance of the parks on EIP topics “Water” and “Waste and material use” there is potential to apply full range of technical assistance, so including capacity building, advisory services and investment facilitation and policy support;
- Potential role for government agencies to assist with multiple environmental topics through policy support (“top-down approach”).

» Social performance

- None of the topics under social performance are prioritised for technical assistance because there is no intended improvement potential. However, this indicates a need for awareness raising to park management to encourage a commitment to a higher intended social performance levels.

» Economic performance

- None of the topics under economic performance are prioritised for technical assistance because of their low improvement potential. Two out of three topics have no intended improvement potential across all five parks assessed. As for the social performance, this indicates a need for awareness raising to park management for a higher commitment on economic performance levels.



Table 8: Summary of technical assistance needs for industrial parks – Colombia

INTERNATIONAL EIP FRAMEWORK			COLOMBIA: COUNTRY LEVEL								
Targeted improvement potential of all parks assessed in country			Main entry-points for guiding GEIPP country level activities		No. prerequisites and indicators (See review cost implications)		Common technical assistance needs across industrial parks in country (based on EIP scorings)				
Topic	Topic priority	Improvement potential	Bottom-up (Industrial parks)	Top down (government)	Largely driven by human efforts	Largely driven by financial investments	No. of assessed parks with Improvement potential >20%	Type of assistance			
								Capacity building	Technical advisory services	Investment facilitation	Policy support
PARK MANAGEMENT 12%											
(Basic) park management services	Medium priority	0%	X		2 out of 4	2 out of 4	0	Park management	Park management		
Monitoring and risk management	High priority	35%	X		4 out of 4	0 out of 4	4	Park management	Park management		
Planning and zoning	Medium priority	0%	X	X	0 out of 1	1 out of 1	0	Park management	Park management	Park management	Government
ENVIRONMENT 17%											
Management and monitoring	Medium priority	10%	X		2 out of 2	0 out of 2	1	Park management + companies			
Energy	Medium priority	17%	X	X	2 out of 6	4 out of 6	1	Park management + companies	Park management + companies	Park management + companies	Government
Water	High priority	30%	X	X	0 out of 4	4 out of 4	5	Park management + companies	Park management + companies	Park management + companies	Government
Waste and material use	High priority	20%	X	X	1 out of 3	2 out of 3	2	Park management + companies	Park management + companies	Park management + companies	Government
Climate change and the natural environment	Medium priority	8%	X	X	3 out of 5	2 out of 5	0	Park management + companies	Park management + companies	Park management + companies	Government
SOCIAL 0%											
Social management systems	Medium priority	0%	X		6 out of 6	0 out of 6	0	Park management + companies	Park management		
Social infrastructure	Medium priority	0%	X	X	2 out of 5	3 out of 5	0	Park management + companies	Park management	Park management	
Local community outreach	Medium priority	0%	X		2 out of 2	0 out of 2	0	Park management	Park management		
ECONOMIC 3%											
Employment generation	Medium priority	0%	X	X	3 out of 3	0 out of 3	0	Park management + companies			Government
Local business & SME promotion	Medium priority	0%	X		2 out of 3	1 out of 3	0	Park management + companies		Park management	
Economic value creation	Medium priority	10%	X		3 out of 3	0 out of 3	1		Park management	Park management	

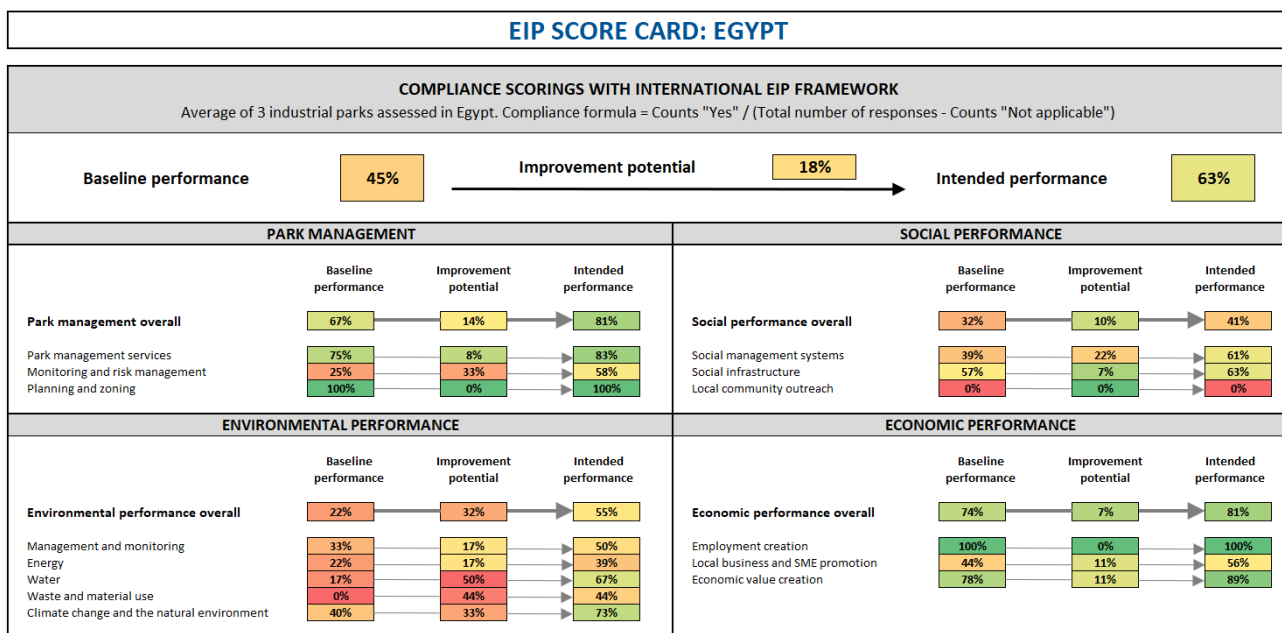


EGYPT

Compliance scorings

Figure 11 presents the EIP score card for Egypt, including the baseline and intended compliance scorings for all main categories and topics of the International EIP Framework. The compliance scorings are the calculated averages based on three industrial parks assessed to date in Egypt.

Figure 11: EIP score card for Egypt



Note: Score card is based on International EIP prerequisites and performance indicators which are fully met.

The EIP score card for Egypt illustrates the following:

- » Overall, the average baseline compliance of the three parks assessed in Egypt to date is 45% with an intended compliance of 63%, giving an improvement potential of 18%.
 - » Overall performance per topic:
 - The environmental and social performance categories have lower baseline compliance (22% and 32% respectively) compared to economic performance (74%) and park management (67%);
 - The environmental performance category shows highest intended improvement potential (32%) compared to other categories.
- » Topics with lowest baseline compliance scorings in Egypt are:
 - Waste and material use (0% compliance);
 - Local community outreach (0% compliance);
 - Water (17% compliance);
 - Energy (22% compliance).
- » Topics with highest improvement potential in Egypt are:
 - Water (50% improvement potential);
 - Waste and material use (44% improvement potential);
 - Climate and natural environment (33% improvement potential);
 - Park monitoring and risk management (33% improvement potential).



- » The following topics have *highest baseline compliance scorings* indicating overall that park management and tenant firms in Egypt may need less intensive technical assistance on these topics:
 - Planning and zoning (100% compliance);
 - Employment creation (100% compliance);
 - Economic value creation (78% compliance);
 - (Basic) park management services (75% compliance).
- » Based on current data set, following topics do not seem to have any *improvement potential* in Egypt indicating that there is either limited interest or limited scope to improve compliance on these topics:
 - Planning and zoning;
 - Local community outreach;
 - Employment creation.
- » “Local community outreach” has a low current performance as well as a low improvement potential. Awareness raising to park management on EIP benefits seems needed for a commitment to a higher intended performance level on this topic.

Technical assistance needs

Table 9 provides a summary of technical assistance needs for industrial parks in Egypt, including (a) main entry points for guiding GEIPP country level activities; (b) indication how many prerequisites/indicators are largely driven either by human efforts or financial investments; and (c) the common types of technical assistance needs across industrial parks in the country.

Based on the EIP scorings, key take home messages from this technical assistance needs review for Egypt are:

- » Park management
 - Topic of “Monitoring and risk management” is prioritised for technical assistance based on its overall intended improvement potential of 33% and all three parks assessed in the country have an improvement potential of more than 20%.
 - Topic of “Planning and zoning” does not show an intended improvement potential and therefore this topic is not recommended for technical assistance;
 - Technical assistance on “Monitoring and risk management” can largely be delivered through working directly with park management entity (“bottom-up approach”), focusing on capacity building and technical advisory services;
 - Enhancing the performance of the parks on “Monitoring and risk management” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on establishing know-how, skills and leadership within park management.
- » Environmental performance
 - EIP topics of “Water”, “Waste and material use” and “Climate change and the environment” are prioritised for technical assistance based on their overall intended improvement potential of 50%, 44% and 33% respectively;
 - To improve the performance of the parks on “Water”, “Waste and material use” and “Climate change and the environment” there is potential to apply the full range of technical assistance, so including capacity building, advisory services, investment facilitation and policy support;
 - Potential role for government agencies to assist with multiple environmental topics through policy support (“top-down approach”).



» Social performance

- Topic of “Social management systems” is prioritised for technical assistance based on its overall intended improvement potential of 22%. Technical assistance on this topic is recommended for two of the three parks assessed in the country;
- Enhancing the performance of the parks on “Social management systems” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on capacity building to establish know-how, skills and leadership within park management and tenant firms.

» Economic performance

- None of the topics under economic performance are prioritised for technical assistance because of their low improvement potential. This could indicate a need for awareness raising to park management to encourage a higher commitment on economic performance levels, in particular on “Local business and SME promotion”.



Table 9: Summary of technical assistance needs for industrial parks – Egypt

INTERNATIONAL EIP FRAMEWORK			EGYPT: COUNTRY LEVEL								
Targeted improvement potential of all parks assessed in country			Main entry-points for guiding GEIPP country level activities		No. prerequisites and indicators (See review cost implications)		Common technical assistance needs across industrial parks in country (based on EIP scorings)				
Topic	Topic priority	Improvement potential	Bottom-up (Industrial parks)	Top down (government)	Largely driven by human efforts	Largely driven by financial investments	No. of assessed parks with Improvement potential >20%	Type of assistance			
								Capacity building	Technical advisory services	Investment facilitation	Policy support
PARK MANAGEMENT 14%											
(Basic) park management services	Medium priority	8%	X		2 out of 4	2 out of 4	1	Park management	Park management		
Monitoring and risk management	High priority	33%	X		4 out of 4	0 out of 4	3	Park management	Park management		
Planning and zoning	Medium priority	0%	X	X	0 out of 1	1 out of 1	0	Park management	Park management	Park management	Government
ENVIRONMENT 32%											
Management and monitoring	Medium priority	17%	X		2 out of 2	0 out of 2	1	Park management + companies			
Energy	Medium priority	17%	X	X	2 out of 6	4 out of 6	0	Park management + companies	Park management + companies	Park management + companies	Government
Water	High priority	50%	X	X	0 out of 4	4 out of 4	3	Park management + companies	Park management + companies	Park management + companies	Government
Waste and material use	High priority	44%	X	X	1 out of 3	2 out of 3	2	Park management + companies	Park management + companies	Park management + companies	Government
Climate change and the natural environment	High priority	33%	X	X	3 out of 5	2 out of 5	1	Park management + companies	Park management + companies	Park management + companies	Government
SOCIAL 10%											
Social management systems	High priority	22%	X		6 out of 6	0 out of 6	2	Park management + companies	Park management		
Social infrastructure	Medium priority	7%	X	X	2 out of 5	3 out of 5	0	Park management + companies	Park management	Park management	
Local community outreach	Medium priority	0%	X		2 out of 2	0 out of 2	0	Park management	Park management		
ECONOMIC 7%											
Employment generation	Medium priority	0%	X	X	3 out of 3	0 out of 3	0	Park management + companies			Government
Local business & SME promotion	Medium priority	11%	X		2 out of 3	1 out of 3	1	Park management + companies		Park management	
Economic value creation	Medium priority	11%	X		3 out of 3	0 out of 3	1		Park management	Park management	

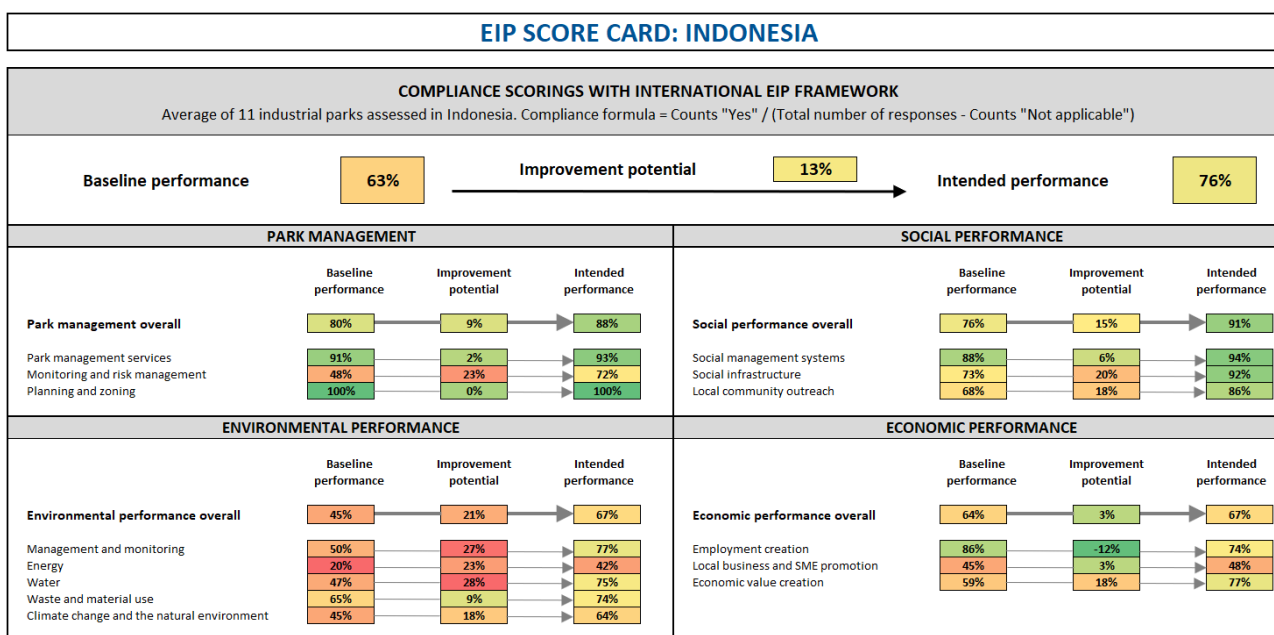


INDONESIA

Compliance scorings

Figure 12 presents the EIP score card for Indonesia, including the baseline and intended compliance scorings for all main categories and topics of the International EIP Framework. The compliance scorings are the calculated averages based on 11 industrial parks assessed to date in Indonesia.

Figure 12: EIP score card for Indonesia



Note: Score card is based on International EIP prerequisites and performance indicators which are fully met.

The EIP score card for Indonesia illustrates the following:

- » Overall, the average baseline compliance of all 11 parks assessed in Indonesia to date is 63% with an intended compliance of 76%, giving an improvement potential of 13% for the country.
- » **Overall performance per topic:**
 - The environmental and economic performance categories have lower baseline compliance (45% and 64% respectively) compared to park management (80%) and social performance (76%);
 - The environmental and social performance categories show the highest intended improvement potential (21% and 15% respectively) compared to two other categories.
- » Topic with **lowest baseline compliance scorings** in Indonesia are:
 - Energy (20% compliance).
- » Topics with **highest improvement potential** in Indonesia are:
 - Water (28% improvement potential);
 - Environmental management and monitoring (27% improvement potential);
 - Park management and monitoring (23% improvement potential);
 - Energy (23% improvement potential).
- » The following topics have **highest baseline compliance scorings** indicating overall that park management and tenant firms in Indonesia may need less intensive technical assistance on these topics:



- Planning and zoning (100% compliance);
 - (Basic) park management services (91%);
 - Social management systems (88% compliance);
 - Employment creation (86% compliance).
- » Based on current data set, following topics do not seem to have any *improvement potential* in Indonesia indicating that there is either limited interest or limited scope to improve compliance on these topics:
- Planning and zoning;
 - Employment creation (showing even a negative improvement potential).
- » “Local business and SME promotion” has a relatively low current performance (45% compliance) as well as a low improvement potential (3%). Awareness raising to park management on EIP benefits seems needed on this topic for a commitment to a higher intended performance level.

Technical assistance needs

Table 10 provides a summary of technical assistance needs for industrial parks in Indonesia, including (a) main entry points for guiding GEIPP country level activities; (b) indication how many prerequisites/indicators are largely driven either by human efforts or financial investments; and (c) the common types of technical assistance needs across industrial parks in the country.

Based on the EIP scorings, key take home messages on the technical assistance needs for Indonesia are:

- » Park management
- The topic of “Monitoring and risk management” is prioritised for technical assistance based on its overall intended improvement potential of 23%. Six out of the 11 parks assessed in the country have an improvement potential of more than 20%;
 - Enhancing the performance of the parks on “Monitoring and risk management” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on establishing know-how, skills and leadership within park management;
 - Technical assistance on “Monitoring and risk management” can largely be delivered through working directly with park management entity (“bottom-up approach”), focusing on capacity building and technical advisory services.
- » Environmental performance
- Topics of “Environmental management and monitoring”, “Energy”, and “Water” are prioritised for technical assistance based on their intended improvement potentials over 20%. Technical assistance on these three topics is recommended for six of the eleven parks assessed;
 - To improve the performance of the parks on “Energy” and “Water” there is potential to apply full range of technical assistance. This includes capacity building, advisory services and investment facilitation and policy support;
 - Potential role for government agencies to assist with multiple environmental topics through policy support (“top-down approach”).
- » Social performance
- None of the topics under social performance are prioritised for technical assistance because their intended improvement potentials are lower than 20%. It is noted that baseline compliance scorings of the three social topics are already ranging from 68% to 88%. However, there may still be an opportunity for awareness raising to park management and tenant firms to encourage a commitment to full compliance on all social topics.



» Economic performance

- None of the topics under economic performance are prioritised for technical assistance because of their lower improvement potential. This indicates a need for awareness raising to park management to encourage a higher commitment on economic performance levels.

Table 10: Summary of technical assistance needs for industrial parks – Indonesia

INTERNATIONAL EIP FRAMEWORK			Targeted improvement potential of all parks assessed in country		INDONESIA: COUNTRY LEVEL									
Topic	Topic priority	Improvement potential	Main entry-points for guiding GEIPP country level activities		No. prerequisites and indicators (See review cost implications)		Common technical assistance needs across industrial parks in country (based on EIP scorings)							
			Bottom-up (Industrial parks)	Top down (government)	Largely driven by human efforts	Largely driven by financial investments	No. of assessed parks with Improvement potential >20%	Type of assistance						
									Capacity building	Technical advisory services	Investment facilitation	Policy support		
PARK MANAGEMENT 9%														
(Basic) park management services	Medium priority	2%	X		2 out of 4	2 out of 4	1		Park management	Park management				
Monitoring and risk management	High priority	23%	X		4 out of 4	0 out of 4	6		Park management	Park management				
Planning and zoning	Medium priority	0%	X	X	0 out of 1	1 out of 1	0		Park management	Park management	Park management	Government		
ENVIRONMENT 21%														
Management and monitoring	High priority	27%	X		2 out of 2	0 out of 2	6		Park management + companies					
Energy	High priority	23%	X	X	2 out of 6	4 out of 6	6		Park management + companies	Park management + companies	Park management + companies	Government		
Water	High priority	28%	X	X	0 out of 4	4 out of 4	6		Park management + companies	Park management + companies	Park management + companies	Government		
Waste and material use	Medium priority	9%	X	X	1 out of 3	2 out of 3	2		Park management + companies	Park management + companies	Park management + companies	Government		
Climate change and the natural environment	Medium priority	18%	X	X	3 out of 5	2 out of 5	2		Park management + companies	Park management + companies	Park management + companies	Government		
SOCIAL 15%														
Social management systems	Medium priority	6%	X		6 out of 6	0 out of 6	0		Park management + companies	Park management				
Social infrastructure	Medium priority	20%	X	X	2 out of 5	3 out of 5	2		Park management + companies	Park management	Park management			
Local community outreach	Medium priority	18%	X		2 out of 2	0 out of 2	4		Park management	Park management				
ECONOMIC 3%														
Employment generation	Medium priority	-12%	X	X	3 out of 3	0 out of 3	0		Park management + companies			Government		
Local business & SME promotion	Medium priority	3%	X		2 out of 3	1 out of 3	1		Park management + companies		Park management			
Economic value creation	Medium priority	18%	X		3 out of 3	0 out of 3	6			Park management	Park management			

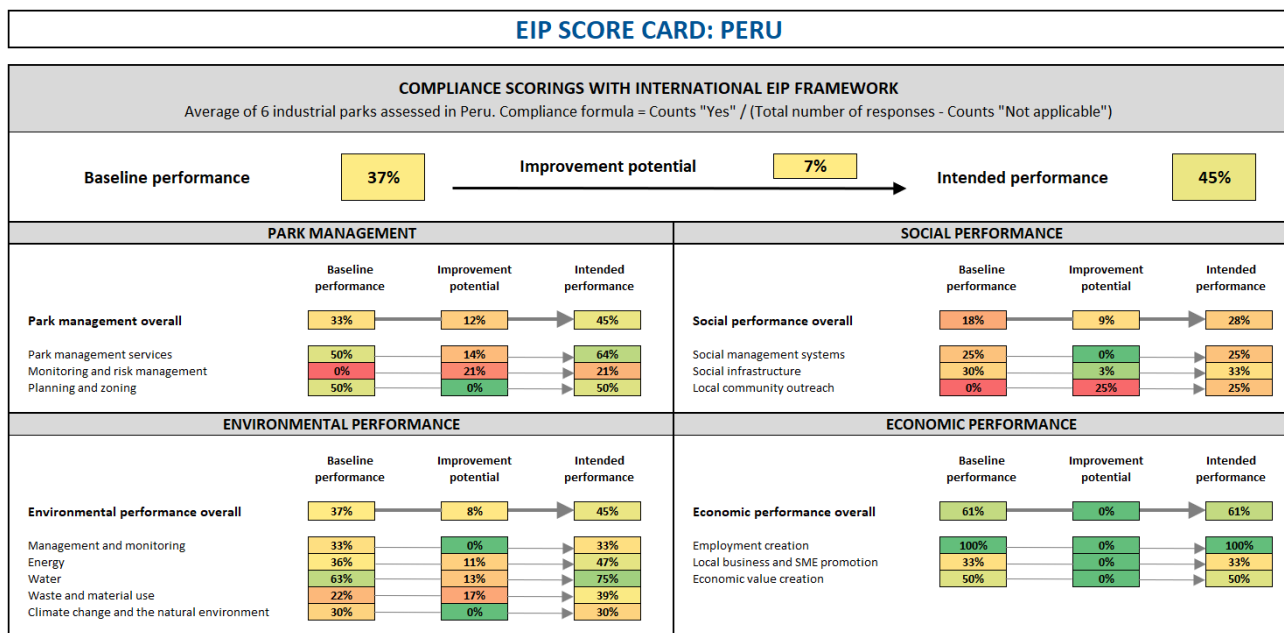


PERU

Compliance scorings

Figure 13 presents the EIP score card for Peru, including the baseline and intended compliance scorings for all main categories and topics of the International EIP Framework. The compliance scorings are the calculated averages based on six industrial parks assessed to date in Peru.

Figure 13: EIP score card for Peru



Note: Score card is based on International EIP prerequisites and performance indicators which are fully met.

The EIP score card for Peru illustrates the following:

- » Overall, the average baseline compliance of all six parks assessed in Peru to date is 37% with an intended compliance of 45%, giving an improvement potential of 7% for the country.
- » Overall performance per topic:
 - The social performance category has a lower baseline compliance (18%) compared to economic performance (61%), environmental performance (37%) and park management (33%);
 - The park management category shows the highest intended improvement potential (12%) compared to other categories. Based on the current data set, there seems no improvement potential for the economic performance category.
- » Topics with lowest baseline compliance scorings in Peru are:
 - Park management and monitoring (0% compliance);
 - Local community outreach (0% compliance);
 - Waste and material use (22% compliance);
 - Social management systems (25% compliance).
- » Topics with highest improvement potential in Peru are:
 - Local community outreach (25% improvement potential);
 - Park monitoring and risk management (21% improvement potential);
 - Waste and material use (17% improvement potential).



- » The following topics have *highest baseline compliance scorings* indicating overall that park management and tenant firms in Peru may need less intensive technical assistance on these topics:
 - Employment creation (100% compliance);
 - Water (63% compliance).
- » Based on current data set, following topics do not seem to have any *improvement potential* in Peru indicating that there is either limited interest or limited scope to improve compliance on these topics:
 - Planning and zoning;
 - Environmental management and monitoring;
 - Climate change and natural environment;
 - Social management systems;
 - All three topics in economic performance category.
- » The following topics have both a low current performance as well as a low improvement potential. For these topics, awareness raising to park management on EIP benefits seems needed for a commitment to a higher intended performance level.
 - Environmental management and monitoring;
 - Climate change and natural environment;
 - Social management systems;
 - Social infrastructure;
 - Local business and SME promotion.

Technical assistance needs

Table 11 provides a summary of technical assistance needs for industrial parks in Peru, including (a) main entry points for guiding GEIPP country level activities; (b) indication how many prerequisites/indicators are largely driven either by human efforts or financial investments; and (c) the common types of technical assistance needs across industrial parks in the country.

Based on the EIP scorings, key take home messages on the technical assistance needs for Peru are:

- » Park management
 - Topic of “Monitoring and risk management” is prioritised for technical assistance based on its overall intended improvement potential of 21%. Four out of the six parks assessed in the country have an improvement potential of more than 20%, and therefore technical assistance on this topic is recommended across all parks;
 - Enhancing the performance of the parks on “Monitoring and risk management” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on establishing know-how, skills and leadership within park management;
 - Technical assistance on “Monitoring and risk management” can largely be delivered through working directly with park management entity (“bottom-up approach”), focusing on capacity building and technical advisory services.
- » Environmental performance
 - None of the topics under environmental performance are prioritised for technical assistance because of their low intended improvement potential. Two out of five topics have no intended improvement potential across all five parks assessed. This at least indicates a need for awareness raising to park management to encourage a higher commitment on environmental performance levels.



- Potential role for government agencies to assist with multiple environmental topics through policy support (“top-down approach”). Please see discussion on policy support and the need for conducive policies in Section 4.6 of this report.
- » Social performance
 - Topic of “Local community” is prioritised for technical assistance based on its overall intended improvement potential of 25%. Technical assistance on this topic is recommended for two of the six parks assessed in the country;
 - Enhancing the performance of the parks on “Local community outreach” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on capacity building to establish know-how, skills and leadership within park management and tenant firms.
- » Economic performance
 - None of the topics under economic performance are prioritised for technical assistance because of their low improvement potential. All three topics have no intended improvement potential across all five parks assessed. Same as for the environmental performance, this at least indicates a need for awareness raising to park management to encourage a higher commitment on economic performance levels.



Table 11: Summary of technical assistance needs for industrial parks – Peru

INTERNATIONAL EIP FRAMEWORK			PERU: COUNTRY LEVEL								
Targeted improvement potential of all parks assessed in country			Main entry-points for guiding GEIPP country level activities		No. prerequisites and indicators (See review cost implications)		Common technical assistance needs across industrial parks in country (based on EIP scorings)				
Topic	Topic priority	Improvement potential	Bottom-up (Industrial parks)	Top down (government)	Largely driven by human efforts	Largely driven by financial investments	No. of assessed parks with Improvement potential >20%	Type of assistance			
								Capacity building	Technical advisory services	Investment facilitation	Policy support
PARK MANAGEMENT 12%											
(Basic) park management services	Medium priority	14%	X		2 out of 4	2 out of 4	3	Park management	Park management		
Monitoring and risk management	High priority	21%	X		4 out of 4	0 out of 4	4	Park management	Park management		
Planning and zoning	Medium priority	0%	X	X	0 out of 1	1 out of 1	0	Park management	Park management	Park management	Government
ENVIRONMENT 8%											
Management and monitoring	Medium priority	0%	X		2 out of 2	0 out of 2	0	Park management + companies			
Energy	Medium priority	11%	X	X	2 out of 6	4 out of 6	0	Park management + companies	Park management + companies	Park management + companies	Government
Water	Medium priority	13%	X	X	0 out of 4	4 out of 4	2	Park management + companies	Park management + companies	Park management + companies	Government
Waste and material use	Medium priority	17%	X	X	1 out of 3	2 out of 3	2	Park management + companies	Park management + companies	Park management + companies	Government
Climate change and the natural environment	Medium priority	0%	X	X	3 out of 5	2 out of 5	0	Park management + companies	Park management + companies	Park management + companies	Government
SOCIAL 9%											
Social management systems	Medium priority	0%	X		6 out of 6	0 out of 6	0	Park management + companies	Park management		
Social infrastructure	Medium priority	3%	X	X	2 out of 5	3 out of 5	0	Park management + companies	Park management	Park management	
Local community outreach	High priority	25%	X		2 out of 2	0 out of 2	2	Park management	Park management		
ECONOMIC 0%											
Employment generation	Medium priority	0%	X	X	3 out of 3	0 out of 3	0	Park management + companies			Government
Local business & SME promotion	Medium priority	0%	X		2 out of 3	1 out of 3	0	Park management + companies		Park management	
Economic value creation	Medium priority	0%	X		3 out of 3	0 out of 3	0		Park management	Park management	

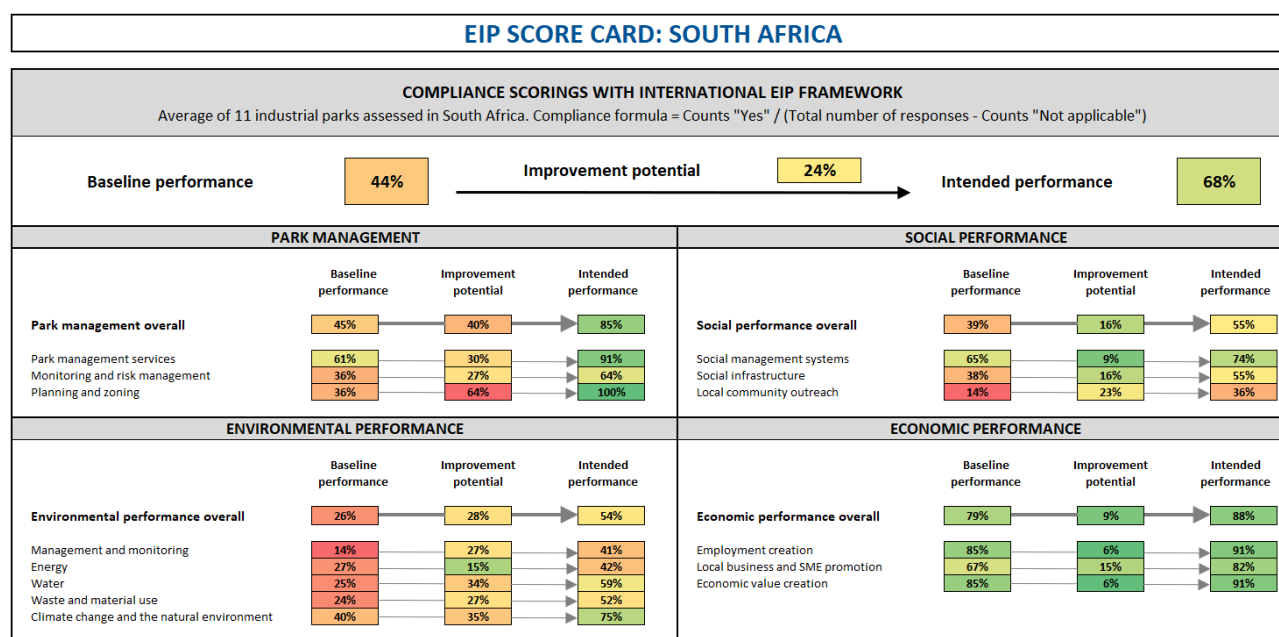


SOUTH AFRICA

Compliance scorings

Figure 14 presents the EIP score card for South Africa, including the baseline and intended compliance scorings for all main categories and topics of the International EIP Framework. The compliance scorings are the calculated averages based on 11 industrial parks assessed in South Africa.

Figure 14: EIP score card for South Africa



Note: Score card is based on International EIP prerequisites and performance indicators which are fully met.

The EIP score card for South Africa illustrates the following:

- » Overall, the average baseline compliance of all 11 parks assessed in South Africa to date is 44% with an intended compliance of 68%, giving an improvement potential of 24% for the country.
- » Overall performance per topic:
 - The environmental performance category has a lowest baseline compliance (26%) compared to economic performance (79%), park management (45%) and social performance (39%);
 - The park management and environmental performance categories show the highest intended improvement potential (40% and 28% respectively) compared to other categories.
- » Topics with lowest baseline compliance scorings in South Africa are:
 - Environmental management and monitoring (14% compliance);
 - Local community outreach (14% compliance);
 - Waste and material use (24% compliance);
 - Water (25% compliance);
 - Energy (27% compliance).



- » Topics with *highest improvement potential* in South Africa are:
 - Planning and zoning (64% improvement potential);
 - Climate change and the environment (35% improvement potential);
 - Water (34% improvement potential).
- » The following topics have *highest baseline compliance scorings* indicating overall that park management and tenant firms in South Africa may need less intensive technical assistance on these topics:
 - Employment creation (85% compliance);
 - Economic value creation (85% compliance);
 - Local business and SME promotion (67% compliance);
 - Social management systems (65% compliance).
- » Based on current data set, following topics have *low improvement potential* in South Africa indicating that there is either limited interest or limited scope to improve compliance on these topics:
 - Employment creation (6% improvement potential);
 - Local business and SME promotion (6% improvement potential);
 - Social management systems (9% improvement potential).

Technical assistance needs

Table 12 provides a summary of technical assistance needs for industrial parks in South Africa, including (a) main entry points for guiding GEIPP country level activities; (b) indication how many prerequisites/indicators are largely driven either by human efforts or financial investments; and (c) the common types of technical assistance needs across industrial parks in the country.

Based on the EIP scorings, key take home messages on the technical assistance needs for South Africa are:

- » Park management
 - All three topics under park management are prioritised for technical assistance based on their intended improvement potential of 30% for park management services, 27% for monitoring and risk management and 64% for planning and zoning;
 - Technical assistance on “Park management services” and “Monitoring and risk management” can largely be delivered through working directly with park management entity (“bottom-up approach”), focusing on capacity building and technical advisory services;
 - Enhancing the performance of the parks on “Monitoring and risk management” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on establishing know-how, skills and leadership within park management;
 - Enhancing the park performance on “Planning and zoning” is largely driven by financial investment, and requires all four types of technical assistance, including capacity building, technical advisory services, investment facilitation and policy support.
- » Environmental performance
 - Topics of “Environmental management and monitoring”, “Water”, “Waste and material use” and “Climate change and the environment” are prioritised for technical assistance based on their intended improvement potential of over 20%;
 - Technical assistance on “Water” is recommended for all eleven parks assessed. In light of the the increasing water scarcity situation in many parts of South Africa, this topic should receive a very high priority for technical assistance;
 - To improve the performance of the parks on all prioritised environmental topics (except for “Environmental management and monitoring”) there is potential to apply full range of technical



assistance. This includes capacity building, advisory services and investment facilitation and policy support;

- Potential role for government agencies to assist with multiple environmental topics through policy support (“top-down approach”).

» Social performance

- Topic of “Local community outreach” is prioritised for technical assistance based on its overall intended improvement potential of 23%. Technical assistance on this topic is recommended for five of the 11 parks assessed;
- Enhancing the performance of the parks on “Local community outreach” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on capacity building to establish know-how, skills and leadership within park management and tenant firms.

» Economic performance

- None of the topics under economic performance are prioritised for technical assistance because of their lower improvement potential. This seems to indicate that there is a need for awareness raising to park management to encourage a higher commitment on economic performance levels.



Table 12: Summary of technical assistance needs for industrial parks – South Africa

INTERNATIONAL EIP FRAMEWORK			SOUTH AFRICA: COUNTRY LEVEL								
Targeted improvement potential of all parks assessed in country			Main entry-points for guiding GEIPP country level activities		No. prerequisites and indicators (See review cost implications)		Common technical assistance needs across industrial parks in country (based on EIP scorings)				
Topic	Topic priority	Improvement potential	Bottom-up (Industrial parks)	Top down (government)	Largely driven by human efforts	Largely driven by financial investments	No. of assessed parks with Improvement potential >20%	Type of assistance			
								Capacity building	Technical advisory services	Investment facilitation	Policy support
PARK MANAGEMENT 40%											
(Basic) park management services	High priority	30%	X		2 out of 4	2 out of 4	6	Park management	Park management		
Monitoring and risk management	High priority	27%	X		4 out of 4	0 out of 4	7	Park management	Park management		
Planning and zoning	High priority	64%	X	X	0 out of 1	1 out of 1	7	Park management	Park management	Park management	Government
ENVIRONMENT 28%											
Management and monitoring	High priority	27%	X		2 out of 2	0 out of 2	4	Park management + companies			
Energy	Medium priority	15%	X	X	2 out of 6	4 out of 6	2	Park management + companies	Park management + companies	Park management + companies	Government
Water	High priority	34%	X	X	0 out of 4	4 out of 4	11	Park management + companies	Park management + companies	Park management + companies	Government
Waste and material use	High priority	27%	X	X	1 out of 3	2 out of 3	5	Park management + companies	Park management + companies	Park management + companies	Government
Climate change and the natural environment	High priority	35%	X	X	3 out of 5	2 out of 5	7	Park management + companies	Park management + companies	Park management + companies	Government
SOCIAL 16%											
Social management systems	Medium priority	9%	X		6 out of 6	0 out of 6	4	Park management + companies	Park management		
Social infrastructure	Medium priority	16%	X	X	2 out of 5	3 out of 5	3	Park management + companies	Park management	Park management	
Local community outreach	High priority	23%	X		2 out of 2	0 out of 2	5	Park management	Park management		
ECONOMIC 9%											
Employment generation	Medium priority	6%	X	X	3 out of 3	0 out of 3	2	Park management + companies			Government
Local business & SME promotion	Medium priority	15%	X		2 out of 3	1 out of 3	3	Park management + companies		Park management	
Economic value creation	Medium priority	6%	X		3 out of 3	0 out of 3	2		Park management	Park management	

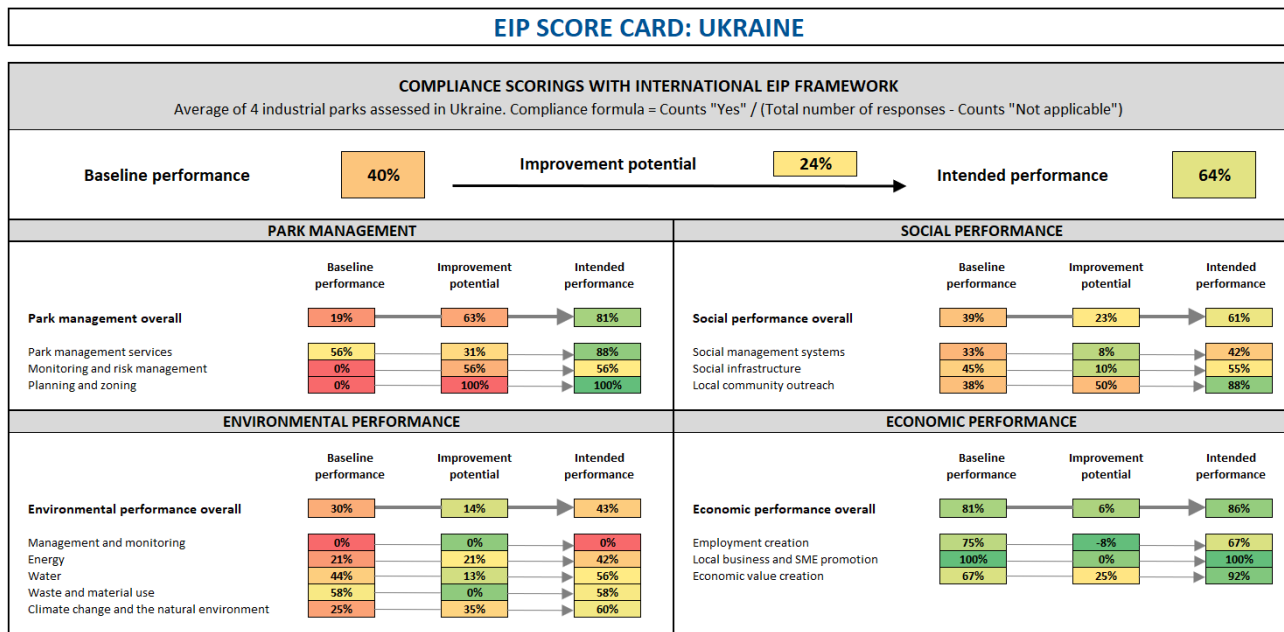


UKRAINE

Compliance scorings

Figure 15 presents the EIP score card for Ukraine, including the baseline and intended compliance scorings for all main categories and topics of the International EIP Framework. The compliance scorings are the calculated averages based on four industrial parks assessed in Ukraine.

Figure 15: EIP score card for Ukraine



Note: Score card is based on International EIP prerequisites and performance indicators which are fully met.

The EIP score card for Ukraine illustrates the following:

- » Overall, the average baseline compliance of all four parks assessed in Ukraine to date is 40% with an intended compliance of 64%, giving an improvement potential of 24% for the country.
- » Overall performance per topic:
 - Park management categories has lowest baseline compliance (19%) compared to economic performance (81%), social performance (39%) and environmental performance (30%);
 - By far, the park management category shows highest intended improvement potential (63%) compared to other categories.
- » Topics with lowest baseline compliance scorings in Ukraine are:
 - Park monitoring and risk management (0% compliance);
 - Planning and zoning (0% compliance);
 - Environmental management and monitoring (0% compliance);
 - Energy (21% compliance);
 - Climate change and natural environment (25% compliance).
- » Topics with highest improvement potential in Ukraine are:
 - Planning and zoning (100% improvement potential);
 - Park monitoring and risk management (56% improvement potential);



- Local community outreach (50% improvement potential).
- » The following topics have *highest baseline compliance scorings* indicating overall that park management and tenant firms in Ukraine may need less intensive technical assistance on these topics:
 - Local business and SME promotion (100% compliance);
 - Employment creation (75% compliance);
 - Economic value creation (67% compliance).
- » Based on current data set, following topics do not seem to have any *improvement potential* in Ukraine indicating that there is either limited interest or limited scope to improve compliance on these topics:
 - Environmental management and monitoring;
 - Waste and material use;
 - Employment creation (shows even a negative improvement);
 - Local business and SME promotion.
- » “Environmental management and monitoring” is a topic with both a low current performance as well as a low improvement potential. At least, awareness raising to park management on EIP benefits seems needed on this topic for a commitment to a higher intended performance level.

Technical assistance needs

Table 13 provides a summary of technical assistance needs for industrial parks in Ukraine, including (a) main entry points for guiding GEIPP country level activities; (b) indication how many prerequisites/indicators are largely driven either by human efforts or financial investments; and (c) the common types of technical assistance needs across industrial parks in the country.

Based on the EIP scorings, key take home messages on the technical assistance needs for Ukraine are:

- » Park management
 - All three topics under park management are prioritised for technical assistance based on their intended improvement potential of 31% for park management services, 56% for monitoring and risk management and 100% for planning and zoning;
 - All four parks assessed in the country have an improvement potential of more than 20%, and therefore technical assistance on this topic is recommended across all parks participating in the GEIPP Ukraine;
 - Technical assistance on “Monitoring and risk management” can largely be delivered through working directly with park management entity (“bottom-up approach”), focusing on capacity building and technical advisory services;
 - Enhancing the performance of the parks on “Monitoring and risk management” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on establishing know-how, skills and leadership within park management;
 - Enhancing the park performance on “Planning and zoning” is largely driven by financial investment, and requires all four types of technical assistance, including capacity building, technical advisory services, investment facilitation and policy support.
- » Environmental performance
 - Topics of “Energy” and “Climate change and the environment” are prioritised for technical assistance based on their overall intended improvement potential of 21% and 35% respectively. However, technical assistance on “Energy” is recommended for one park only as other three parks assessed do not have an improvement potential over 20%;



- To improve the performance of the parks on “Energy” and “Climate change and the environment” there is potential to apply full range of technical assistance, so including capacity building, advisory services and investment facilitation and policy support;
 - Potential role for government agencies to assist with multiple environmental topics through policy support (“top-down approach”).
- » Social performance
- Topic of “Local community outreach” is prioritised for technical assistance based on its overall intended improvement potential of 50%. Technical assistance on this topic is recommended across all parks in the country as all parks assessed have improvement potential over 20%;
 - Enhancing the performance of the parks on “Local community outreach” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on capacity building to establish know-how, skills and leadership within park management and tenant firms.
- » Economic performance
- Topic of “Economic value creation” is prioritised for technical assistance based on its overall intended improvement potential of 25%. Technical assistance on this topic is recommended for three of the four parks assessed in the country;
 - Enhancing the performance of the parks on “Economic value creation” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on capacity building. However, this is also a need to facilitate investment for park management on this topic (e.g. develop feasibility studies for promising EIP initiatives including facilitating access-to-finance).



Table 13: Summary of technical assistance needs for industrial parks – Ukraine

INTERNATIONAL EIP FRAMEWORK			UKRAINE: COUNTRY LEVEL								
Targeted improvement potential of all parks assessed in country			Main entry-points for guiding GEIPP country level activities		No. prerequisites and indicators (See review cost implications)		Common technical assistance needs across industrial parks in country (based on EIP scorings)				
Topic	Topic priority	Improvement potential	Bottom-up (Industrial parks)	Top down (government)	Largely driven by human efforts	Largely driven by financial investments	No. of assessed parks with Improvement potential >20%	Type of assistance			
								Capacity building	Technical advisory services	Investment facilitation	Policy support
PARK MANAGEMENT 63%											
(Basic) park management services	High priority	31%	X		2 out of 4	2 out of 4	4	Park management	Park management		
Monitoring and risk management	High priority	56%	X		4 out of 4	0 out of 4	4	Park management	Park management		
Planning and zoning	High priority	100%	X	X	0 out of 1	1 out of 1	4	Park management	Park management	Park management	Government
ENVIRONMENT 14%											
Management and monitoring	Medium priority	0%	X		2 out of 2	0 out of 2	0	Park management + companies			
Energy	High priority	21%	X	X	2 out of 6	4 out of 6	1	Park management + companies	Park management + companies	Park management + companies	Government
Water	Medium priority	13%	X	X	0 out of 4	4 out of 4	2	Park management + companies	Park management + companies	Park management + companies	Government
Waste and material use	Medium priority	0%	X	X	1 out of 3	2 out of 3	0	Park management + companies	Park management + companies	Park management + companies	Government
Climate change and the natural environment	High priority	35%	X	X	3 out of 5	2 out of 5	3	Park management + companies	Park management + companies	Park management + companies	Government
SOCIAL 23%											
Social management systems	Medium priority	8%	X		6 out of 6	0 out of 6	0	Park management + companies	Park management		
Social infrastructure	Medium priority	10%	X	X	2 out of 5	3 out of 5	0	Park management + companies	Park management	Park management	
Local community outreach	High priority	50%	X		2 out of 2	0 out of 2	4	Park management	Park management		
ECONOMIC 6%											
Employment generation	Medium priority	-8%	X	X	3 out of 3	0 out of 3	0	Park management + companies			Government
Local business & SME promotion	Medium priority	0%	X		2 out of 3	1 out of 3	0	Park management + companies		Park management	
Economic value creation	High priority	25%	X		3 out of 3	0 out of 3	3		Park management	Park management	

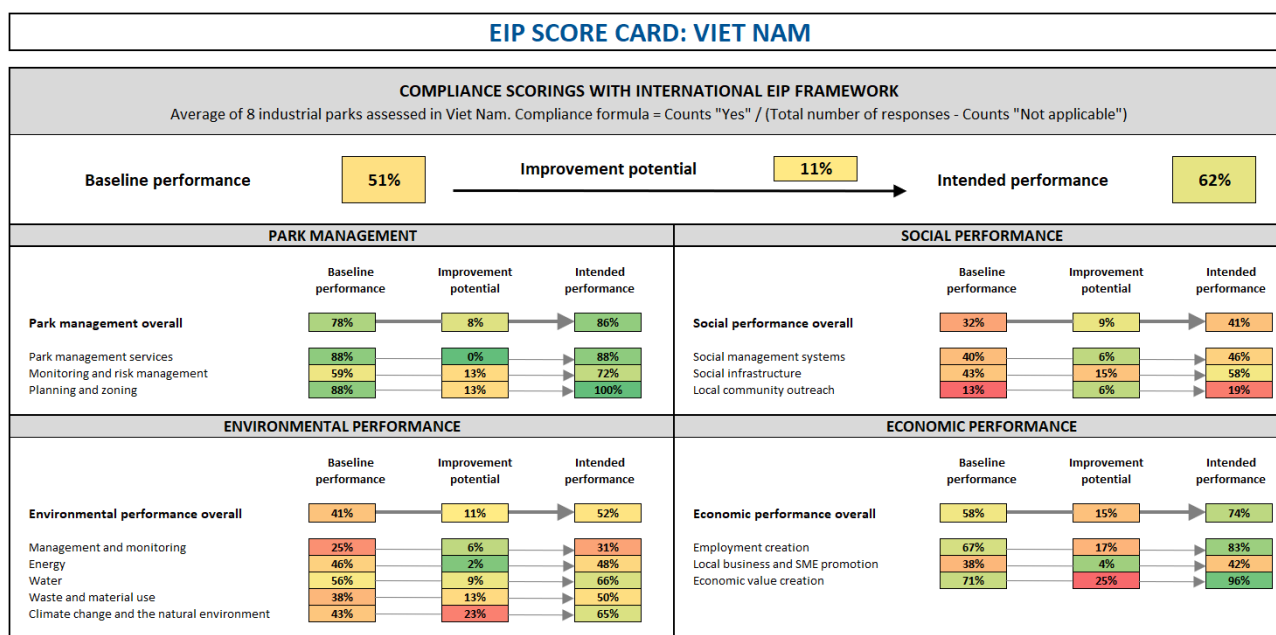


VIET NAM

Compliance scorings

Figure 16 presents the EIP scorecard for Viet Nam, including the baseline and intended compliance scorings for all main categories and topics of the International EIP Framework. The compliance scorings are the calculated averages based on eight industrial parks assessed to date in Viet Nam.

Figure 16: EIP score card for Viet Nam



Note: Score card is based on International EIP prerequisites and performance indicators which are fully met.

The EIP score card for Viet Nam illustrates the following:

- » Overall, the average baseline compliance of all eight parks assessed in Viet Nam to date is 51% with an intended compliance of 62%, giving an improvement potential of 11%.
- » Overall performance per topic:
 - The social and environmental performance categories have lowest baseline compliance (32% and 41% respectively) compared to park management (78%) and economic performance (58%);
 - Economic performance category shows highest intended improvement potential (15%) compared to other categories.
- » Topics with lowest baseline compliance scorings in Viet Nam are:
 - Local community outreach (13% compliance);
 - Environmental management and monitoring (25% compliance).
- » Topics with highest improvement potential in Viet Nam are:
 - Economic value creation (25% improvement potential);
 - Climate change and natural environment (23% improvement potential).
- » The following topics have highest baseline compliance scorings indicating overall that park management and tenant firms in Viet Nam may need less intensive technical assistance on these topics:
 - (Basic) park management services (88% compliance);



- Planning and zoning (88% compliance);
- Economic value creation (71% compliance).
- » Based on current data set, following topics have either no or very low *improvement potential* in Viet Nam indicating either limited interest or limited scope to improve compliance on these topics:
 - (Basic) park management services (0% improvement potential);
 - Energy (2% improvement potential);
 - Local business and SME promotio (4% improvement potential);
 - Environmental management and monitoring (6% improvement potential);
 - Social management systems (6% improvement potential);
 - Local community outreach (6% improvement potential).
- » The following topics have both a low current performance as well as a low improvement potential. For these topics, awareness raising to park management on EIP benefits seems needed for a commitment to a higher intended performance level.
 - Environmental management and monitoring;
 - Local community outreach.

Technical assistance needs

Table 14 provides a summary of technical assistance needs for industrial parks in Viet Nam, including (a) main entry points for guiding GEIPP country level activities; (b) indication how many prerequisites/indicators are largely driven either by human efforts or financial investments; and (c) the common types of technical assistance needs across industrial parks in the country.

Based on the EIP scorings, key take home messages on the technical assistance needs for Viet Nam are:

- » Park management
 - None of the topics under environmental performance are prioritised for technical assistance because of their lower improvement potential. It is noted that baseline compliance scorings of “Park management services” and “Planning and zoning” are already at 88% for both topics. However, there may still be an opportunity for awareness raising to park management to encourage a commitment to full compliance on the park management topics.
- » Environmental performance
 - “Climate change and the environment” is prioritised for technical assistance based on its overall intended improvement potential of 23%. However, technical assistance on this topic is recommended for two of the eight parks as other three parks assessed do not have an improvement potential over 20%;
 - To improve the performance of the parks on “Climate change and the environment” there is potential to apply full range of technical assistance, so including capacity building, advisory services and investment facilitation and policy support;
 - Potential role for government agencies to assist with multiple environmental topics through policy support (“top-down approach”).
- » Social performance
 - None of the topics under social performance are prioritised for technical assistance because their intended improvement potentials are lower than 20%. This indicates an opportunity for awareness raising to park management and tenant firms to encourage a commitment to a higher compliance on the social topics.



» Economic performance

- Topic of “Economic value creation” is prioritised for technical assistance based on its overall intended improvement potential of 25%. Technical assistance on this topic is recommended for six of the eight parks assessed in the country;
- Enhancing the performance of the parks on “Economic value creation” is largely driven by human efforts rather than financial efforts, so main focus of the technical assistance on this topic should focus on capacity building. However, this is also a need to facilitate investment for park management on this topic (e.g. develop feasibility studies for promising EIP initiatives including facilitating access-to-finance).

Table 14: Summary of technical assistance needs for industrial parks – Viet Nam

INTERNATIONAL EIP FRAMEWORK			VIET NAM: COUNTRY LEVEL								
Targeted improvement potential of all parks assessed in country			Main entry-points for guiding GEIPP country level activities		No. prerequisites and indicators (See review cost implications)		Common technical assistance needs across industrial parks in country (based on EIP scorings)				
Topic	Topic priority	Improvement potential	Bottom-up (Industrial parks)	Top down (government)	Largely driven by human efforts	Largely driven by financial investments	No. of assessed parks with Improvement potential >20%	Type of assistance			
								Capacity building	Technical advisory services	Investment facilitation	Policy support
PARK MANAGEMENT 8%											
(Basic) park management services	Medium priority	0%	X		2 out of 4	2 out of 4	0	Park management	Park management		
Monitoring and risk management	Medium priority	13%	X		4 out of 4	0 out of 4	4	Park management	Park management		
Planning and zoning	Medium priority	13%	X	X	0 out of 1	1 out of 1	1	Park management	Park management	Park management	Government
ENVIRONMENT 11%											
Management and monitoring	Medium priority	6%	X		2 out of 2	0 out of 2	1	Park management + companies			
Energy	Medium priority	2%	X	X	2 out of 6	4 out of 6	0	Park management + companies	Park management + companies	Park management + companies	Government
Water	Medium priority	9%	X	X	0 out of 4	4 out of 4	4	Park management + companies	Park management + companies	Park management + companies	Government
Waste and material use	Medium priority	13%	X	X	1 out of 3	2 out of 3	2	Park management + companies	Park management + companies	Park management + companies	Government
Climate change and the natural environment	High priority	23%	X	X	3 out of 5	2 out of 5	2	Park management + companies	Park management + companies	Park management + companies	Government
SOCIAL 9%											
Social management systems	Medium priority	6%	X		6 out of 6	0 out of 6	1	Park management + companies	Park management		
Social infrastructure	Medium priority	15%	X	X	2 out of 5	3 out of 5	1	Park management + companies	Park management	Park management	
Local community outreach	Medium priority	6%	X		2 out of 2	0 out of 2	1	Park management	Park management		
ECONOMIC 15%											
Employment generation	Medium priority	17%	X	X	3 out of 3	0 out of 3	2	Park management + companies			Government
Local business & SME promotion	Medium priority	4%	X		2 out of 3	1 out of 3	1	Park management + companies		Park management	
Economic value creation	High priority	25%	X		3 out of 3	0 out of 3	6		Park management	Park management	

Annex C

Prerequisites and performance indicators
of International EIP Framework



ANNEX C: PREREQUISITES AND PERFORMANCE INDICATORS OF INTERNATIONAL EIP FRAMEWORK

Prerequisites and performance indicators from Version 1 of International Framework for Eco-Industrial Parks (UNIDO, World Bank Group, GIZ, 2017). <https://openknowledge.worldbank.org/handle/10986/29110>.

Park management

Topic	Prerequisites and performance indicators of International EIP Framework
Prerequisites	
Park management services	<p>A distinct park management entity (or alternative agency, where applicable) exists to handle park planning, operations and management, and monitoring.</p> <p>Park management entity to manage and maintain the industrial park property, common infrastructure, and services as prescribed in the tenant contract and the park's Master Plan. This should include, but is not limited to the following:</p> <ul style="list-style-type: none"> • Property management, including plot allotments, re-allotments, development, land use monitoring, and so on. • Utilities, roads, and technical units such as waste and wastewater treatment plants and operations, power and energy systems. • Waste collection areas and services. • Maintenance and repair workshops. • Security and emergency response services and facilities. • Common landscaping, buffer zones, street lighting, security surveillance and street cleaning. • Common employee and tenant facilities. • Provide facilitating services to and between tenant firms (for example, networking, collaboration and training opportunities). • Engagement with the park's stakeholders and business representatives.
Monitoring and risk management	<p>Park management entity maintains a monitoring system in place, tracking:</p> <ul style="list-style-type: none"> • Progress on environmental, social and economic performance at the park level. • Critical risk factors and related responses, at least for: <ul style="list-style-type: none"> ○ Risk points where the accidental release of poisonous solid, liquid and gaseous effluents, including during transportation and disposal when fire hazards are possible; and ○ Applicable natural disaster risks (for example, earthquakes) <p>Where required, Park management has a plan in place to react to possible negative impacts due to climate change risks (heat waves and droughts, storms and floodwater events). All adaption needs for infrastructure and services are identified and in place for the industrial estate to protect against climate change risks and potential damages.</p> <p>Park management entity has a functioning system in place to comply with local/national regulations and international standards applicable to the industrial park. Park management informs compliance by resident firms including compliance information that firms share with the park management entity.</p>
Planning and zoning	<p>A Master Plan (or equivalent planning document) for any new and existing industrial park has been developed and is reviewed periodically (and updated if required), including the following core elements:</p> <ul style="list-style-type: none"> • Site selection study based on various risk analyses; essential and efficient infrastructure, utilities, and transportation network; environmental and social issues; internal park land zoning; buffer zone around the park; procedure to safely locate high risk industries; and cluster synergistic industries. • Integration into Master Plan of relevant requirements specified in these international EIP benchmarks that have spatial implications.
Performance indicators	
Park management services	<p>100% of firms in the industrial park have signed a residency contract/ park charter/code of conduct (depending on what is legally binding on park firms according to the existing legislation in the country); and additional legally binding arrangements that empower the park management entity to perform its responsibilities and tasks and charge fees (sometimes absorbed in rental fees) for common services. This may include transparent fees for services pertaining to the achievement of EIP performance targets.</p> <p>At least 75% of resident firms indicate satisfaction with regard to the provision of services and common infrastructure by the park management's entity (or alternative agency, where applicable).</p>



Topic	Prerequisites and performance indicators of International EIP Framework
Monitoring and risk management	<p>At least every 6 months, park management entity monitors and prepares consolidated reports regarding the achievement of target values (as documented in this framework) to encompass the following:</p> <ul style="list-style-type: none"> • Environmental performance; • Social performance; • Economic performance; and • Critical risk management at the level of the park.

Environmental performance

Topic	Prerequisites and performance indicators of International EIP Framework
Prerequisites	
Management and monitoring	Park management entity operates an environmental / energy management system in line with internationally certified standards, monitoring park performance and supporting resident firms in the maintenance of their own firm-level management systems.
Energy	Supporting programs and documents are in place to improve the energy efficiency of resident firms, especially for the top 50 percent of major energy-consuming businesses in the park.
	An industrial heat recovery strategy is in place to investigate opportunities for heat and energy recovery for the major energy-consuming firms in the park. (Typically, these are firms that individually consume at least 10-20 percent of total firm level energy consumption).
Water	Park management entity has demonstrable plans and (preferably) prior documented evidence to increase water reuse in the short and medium term. This would be achieved by either reuse of industrial effluents, or by rainwater/storm water collection.
Climate change and the natural environment	A program is established to monitor, mitigate and/or minimize GHG emissions, such as carbon dioxide (CO ₂), methane (CH ₄), nitrogen oxide (NO _x), and so on. There is clear evidence of steps taken to introduce mitigation activities.
	The park management entity has a plan in place to assess operational environmental impacts, and aims to limit the impact on prioritised local ecosystem services.
Performance indicators	
Management and monitoring	At least 40% of resident firms with more than 250 employees have an environmental / energy management system in place that is in line with internationally certified standards.
Energy	At least 90% of combined park facilities and firm-level energy consumption have metering and monitoring systems in place.
	Total renewable energy use in the industrial park is equal to or greater than the annual national average energy mix.
	Park management entity sets and works toward ambitious (beyond industry norms) maximum carbon intensity targets (maximum kilograms of carbon dioxide equivalent (kg CO ₂ -eq) / kilowatt hour (kWh) for the park and its residents. Targets should be established for the short, medium, and long term, in line with local norms and industry sector benchmarks.
	Park management entity sets and works toward ambitious maximum energy intensity targets per production unit (kWh/\$ turnover) for the park and its residents. Targets should be established for the short, medium, and long term, in line with local norms and industry sector benchmarks.
Water	100% of total water demand from firms in industrial park do not have significant negative impacts on local water sources or local communities.
	At least 95% of industrial wastewater generated by industrial park and resident firms is treated to appropriate environmental standards.
	At least 50% of total industrial wastewater from firms in the park is reused responsibly within or outside the industrial park.
Waste and material use	At least 20% of solid waste generated by firms is reused by other firms, neighbouring communities, or municipalities.
	100% of firms in park appropriately handle, store, transport and dispose of toxic and hazardous materials.
	Less than 50% of wastes generated by firms in the industrial park goes to landfills.
Climate change and the natural environment	At least 5% of open space in the park is used for native flora and fauna.
	At least 50% of firms in park have pollution prevention and emission reduction strategies to reduce the intensity and mass flow of pollution/emission release beyond national regulations.
	At least 30% of largest polluters in industrial park have a risk management framework in place that: (a) identifies the aspects which have an impact on the environment and; (b) assign a level of significance to each environmental aspect.



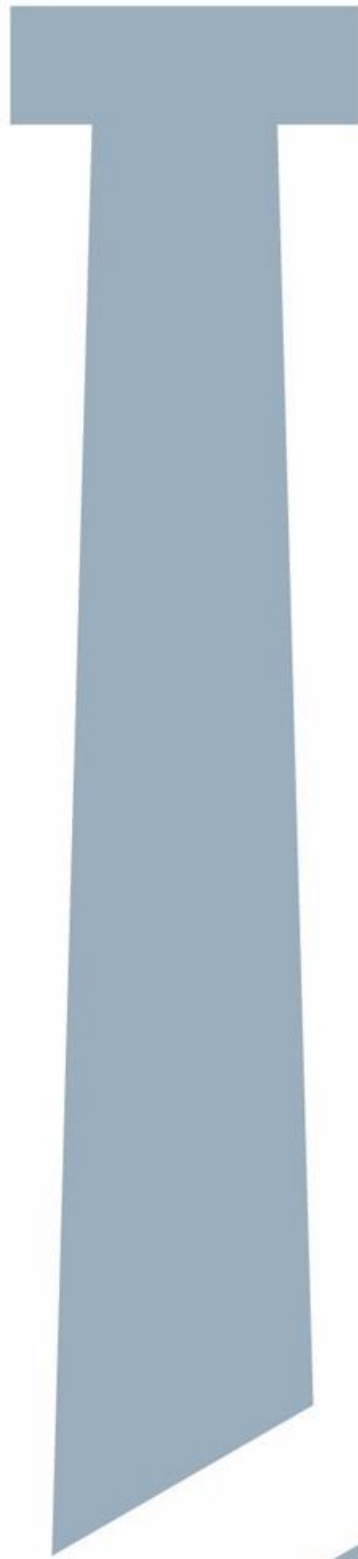
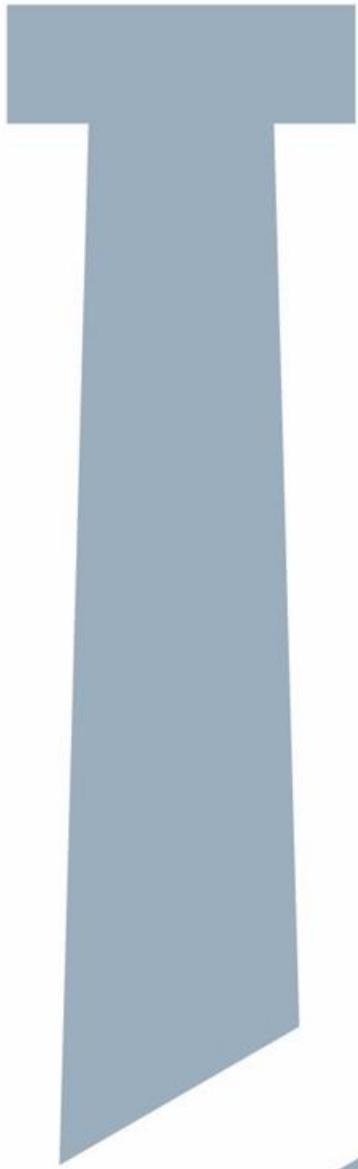
Social performance

Topic	Prerequisites and performance indicators of International EIP Framework
Prerequisites	
Social management systems	Dedicated personnel exist (as part of the park management entity) to plan and manage social quality standards.
Social infrastructure	Essential primary social infrastructure has been adequately provided in the site master plan, and is fully operational in the park.
Performance indicators	
Social management systems	At least 75% of all firms in the industrial park with more than 250 employees have a well-functioning OH&S management system in place.
	100% of grievances received by the park management entity are addressed within 90 days.
	At least 60% of grievances received by the park management entity are brought to conclusion.
	At least 75% of all firms in the industrial park with more than 250 employees have a code of conduct system in place to deal with grievances.
Social infrastructure	At least 75% of all firms in the industrial park with more than 250 employees have a harassment prevention and response system in place.
	At least 80% of the surveyed employees report satisfaction with social infrastructure.
	100% of reported security and safety issues are adequately addressed within 30 days.
	75% of all firms in the industrial park with more than 250 employees have a program for skills/vocational training and development.
Local community outreach	At least 20% of female workforce benefit from available supporting infrastructure/programs for skills development.
	At least 80% of surveyed community members are satisfied with the community dialogue.
Local community outreach	At least two outreach activities that are implemented by the park management entity annually are regarded as positive by over 80 percent of the surveyed community members.

Economic performance

Topic	Prerequisites and performance indicators of International EIP Framework
Prerequisites	
Employment generation	Park management entity has plans to generate specific numbers and types of jobs (including diversity and inclusiveness) in line with government targets.
Local business & SME promotion	Park management entity allows and promotes the establishment of SMEs that provide services and add value to park residents.
Economic value creation	A market demand and feasibility study, supported by a business plan, for specific “green” infrastructure and service offerings has been undertaken to justify planning and implementation in the industrial park.
	Tracked by the park management entity, the industrial park fulfils relevant government targets, including domestic, foreign direct investment, and tax revenues.
Performance indicators	
Employment generation	At least 60% of total workers employed in industrial park live within daily commuting distance.
	At least 25% of total firm workers in industrial park are employed through direct employment (that is, not employed on a fee-for-output basis or provided through a labour supply firm) and permanent contracts.
Local business and SME promotion	At least 25% of resident firms use local suppliers or service providers for at least 80 percent of their total procurement value.
	At least 90% of total procurement value of park management entity are supplied by local firms or service providers.
Economic value creation	On average, the occupancy rate of space available for resident firms was >50% over the last 5 years.





Contact details

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