



Global Eco-Industrial Parks Program (GEIPP)

What is an eco-industrial park?

*“A community of manufacturing and service businesses located together on common property. Member businesses seek **enhanced environmental, economic, and social performance** through **collaboration** in managing environmental and resource issues.*

*By working together, the community of businesses seeks a **collective benefit** that is greater than the sum of individual benefits each company would realize by only optimizing its individual performance.” (Lowe, 2001)*



In short, the EIP concept is about creating more resource-efficient and cost-effective industrial parks which are more competitive, attractive for investment and risk resilient.



A common understanding of EIP

Combinations of related EIP terminology used internationally

Eco
Sustainable
Low Carbon
Green
Circular



Industrial
(Special) Economic
Technological
Investment
Manufacturing



Park
Zone
Area
Cluster
Estate



Improving the environmental and social performance of industrial clusters is a key lever in Inclusive and Sustainable Industrial Development



“Industrial clusters represent as much as 15-20% of global CO₂ emissions”

Industrial clusters are growing rapidly in many countries

- Particularly in transition and developing countries which are rapidly industrialising South America, Africa and Asia.
- The competitiveness of companies and industrial parks increasingly hinges on their ability to demonstrate strong environmental and social performance

A green industrial transition requires tackling multiple topics simultaneously

- Energy
- Industrial Processes and Product Use (IPPU)
- Waste

Assisting Industrial Parks to improve their social, environmental and economic performance requires top-down and bottom-up approaches

- Conducive policies and fit-for-purpose technical assistance to industrial parks and companies
- Need to prioritise actions customised to needs of each industrial park
- Transformation into an EIP is a process of continuous improvement

Key drivers and benefits of applying EIP approaches

Beneficiaries

Park management & government

Environment



Industries

Cities



Better conditions for companies to do business in park

Lower economic, environmental, social risks

Lower costs through optimisation and sharing

Economies of scale

Stronger collaborations

Attract investors and create skilled jobs

Reduced use of raw materials, water, energy and chemicals

Minimized green house gas emissions and pollutants

Increased quality of life for communities

Creation of skilled jobs

Improved OH&S

Better access to technologies and finances

Environmental and social risks are economic risks!



Key components of eco-industrial parks

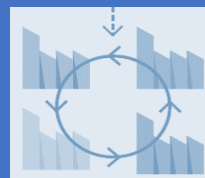
Top-down approaches: Governmental agencies as entry-point



Park
management
services and
governance



Resource efficient
and
cleaner
production



Industrial and
infrastructure
synergies



Community, Jobs,
industrial urban
synergies

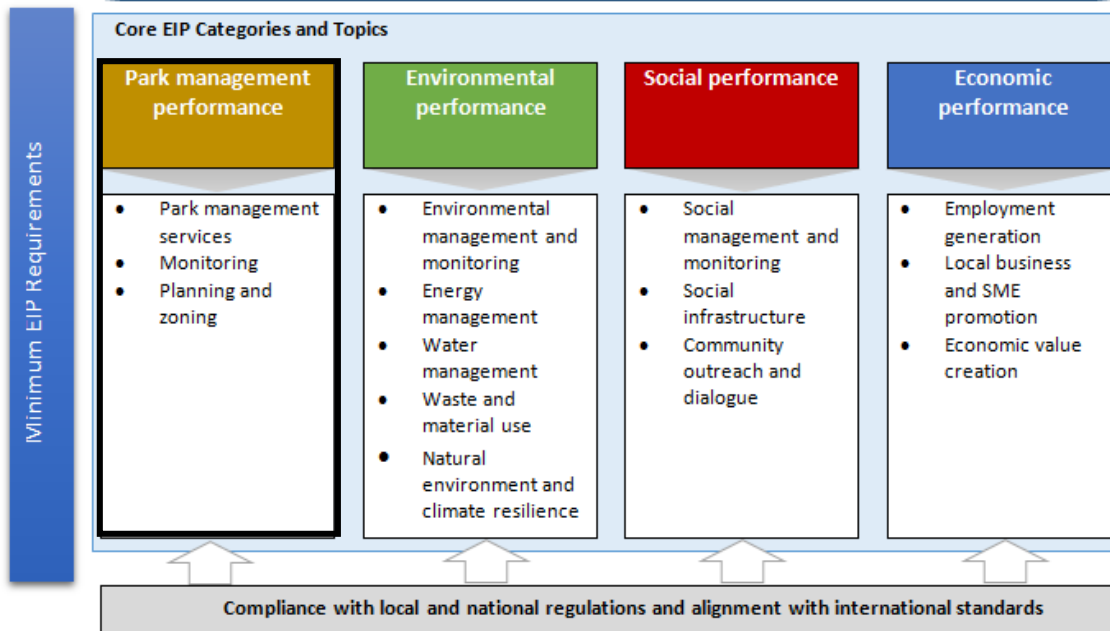
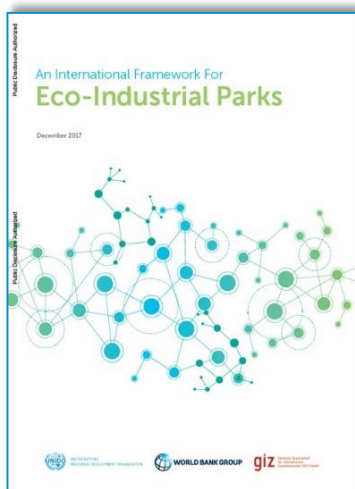


Spatial planning
and zoning

Key components of Eco-Industrial Parks

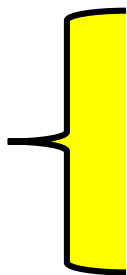
Bottom-up approaches: Industrial parks as entry-point

Process of continuous improvement:
Going beyond the minimum EIP requirements



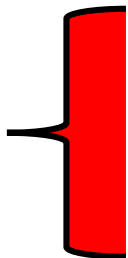
Success factors for EIP management

Why park management is so important



- Strong leadership and commitment
- Pro-active marketing of EIP features and benefits
- Pro-active facilitation of stakeholder processes
- Effective model to share and recover park level costs/benefits
- Creation of feasible and valuable infrastructures and services

Common challenges for EIP management



- Trade-off logic: industrial development versus environment
- Insufficient inclusion of social dimensions
- Insufficient priority on shared and integrated infrastructure
- Lack of understanding that environmental / social risks are economic risks

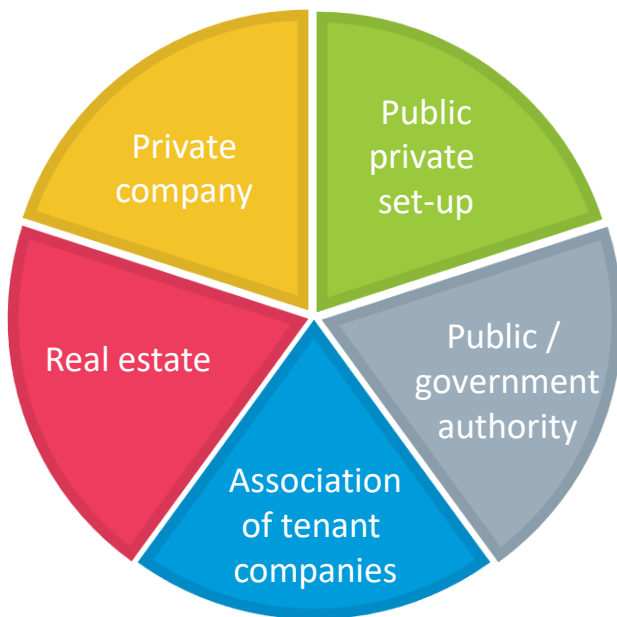


Key functions of EIP management

- Management park property / service provision to tenants
- Engagement with stakeholders and business representation
- Facilitate ongoing and sustainable development of park
- Monitoring and enforcement of Key Performance Indicators

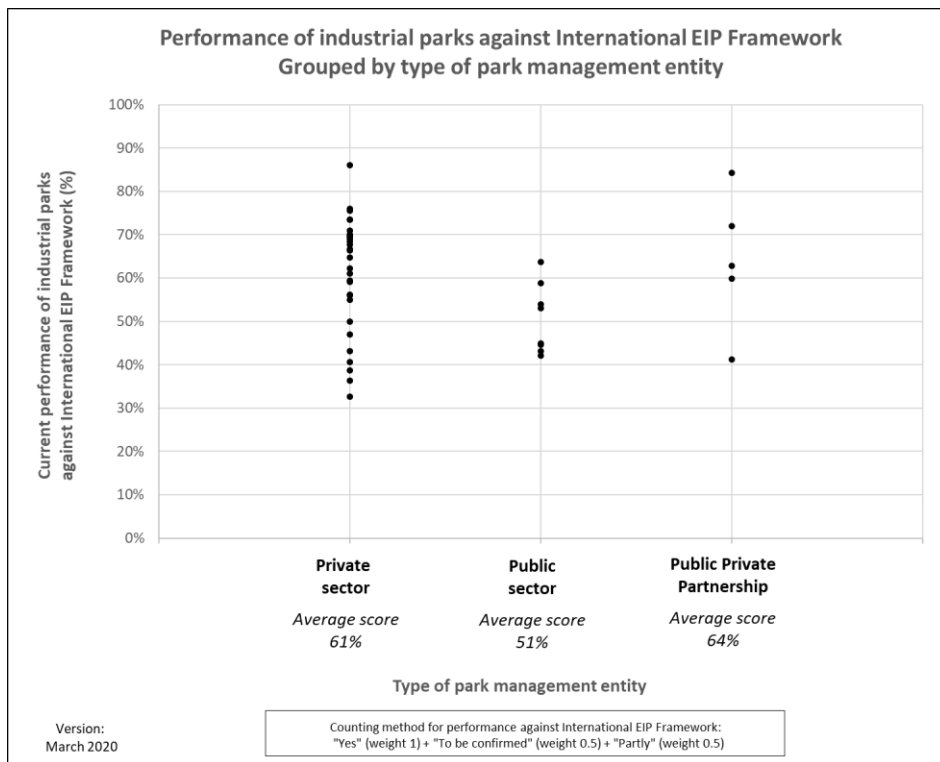
Management models for industrial parks

If one looks at the management models of industrial parks/spaces, one can see that there are many ways management entities are organized.



There is no universal
"fit-for-all" management model

Performance of industrial parks - management entities



Industrial parks managed by PPPs and private sectors have a higher average total EIP score than parks managed by public sector.

Each dot represents industrial park assessed to date by UNIDO against International EIP Framework.

Key message: Whatever the park management type, industrial parks should be “run like a business”

Source: UNIDO (2020). Analysis of results from International EIP Framework assessments.

Added-value services of park management

In many industrial parks, park management provides “traditional” services to its tenants:

- Leasing/selling of industrial land to tenant companies
- Electricity and water supply billing
- Maintenance of roads, fences, and office buildings inside park
- Basic security services

There are many added-value services park management could provide in order to:

- Assist tenant companies to increase their economic , environmental, and social performance
- Reduce risks of park and the companies – environmental and social risks are economic risks!
- Create a more resource-efficient and cost-effective industrial park which is more competitive, attractive for investment

Practical examples clearly show the benefits of added-value services of park management

- EcoPlus in Austria
- Kwinana Industries Council, Western Australia



EcoPlus is developing and managing industrial parks (17) as well as technology-oriented business parks (4) in Lower Austria

- **Real estate offer:** customized rental properties
- **Highly developed infrastructure:** rail connection, freight station, post office, customs office, restaurants, video surveillance, guidance system etc.
- **Accreditation by klimaaktiv “green building standard”** (thermal renovation; new buildings)
- **Investor service hub:** support in funding and subsidies
- **Support tenants in dealings with authorities** (i.e. obtaining operating permits, trade license etc.)
- **Support for municipalities** in developing communal and intercommunal business locations
- **Industry network creation**
- **Research Centre** and links with Technopol locations
- **Coordinate media efforts:** obtain good publicity for events



KIC committees focusing on specific priority topics of Kwinana Industrial Area

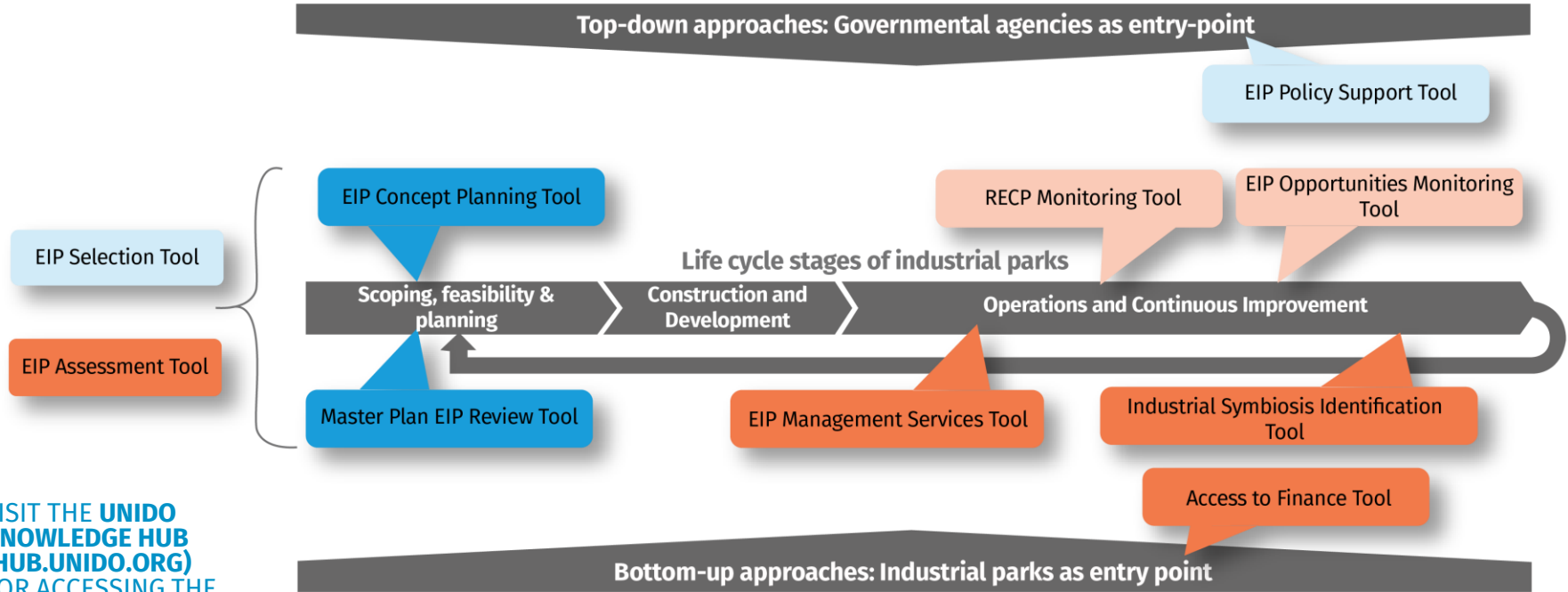
- Infrastructure and Planning
- Environment Committee
- Public Affairs
- Public Safety and Mutual Aid

Examples of work from these committees

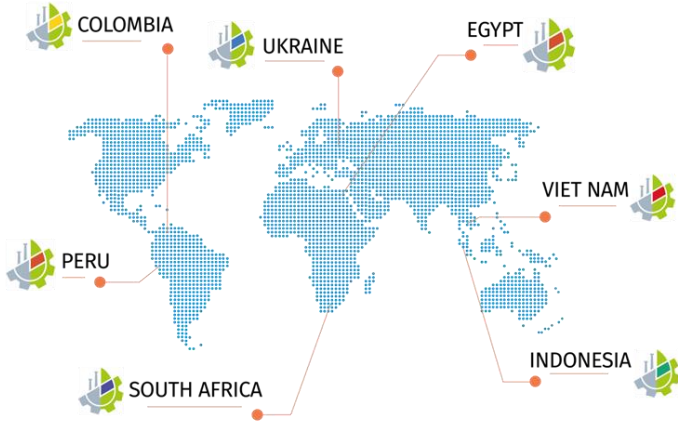
- Communities & Industries Forum (CIF) are held every 3-4 months
- The KIC Education Partnership with local schools
- Facilitate industrial synergies
- Community information service (e.g. air quality)
- Joint industry emergency response and public safety



UNIDO EIP tools support the replication of EIP approaches



VISIT THE **UNIDO**
KNOWLEDGE HUB
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 FOR ACCESSING THE
 UNIDO EIP TOOLS

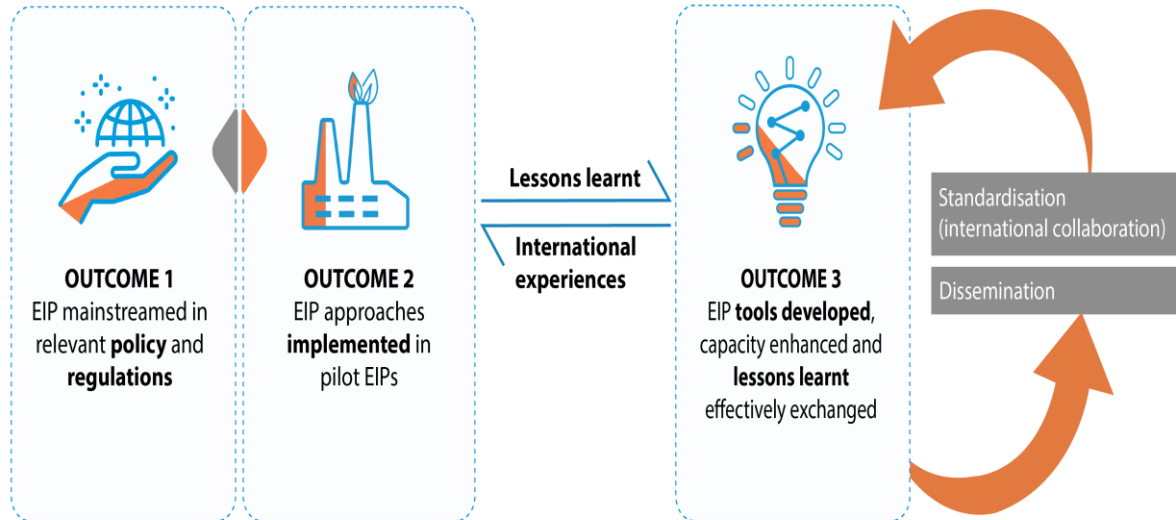


GLOBAL ECO-INDUSTRIAL PARKS PROGRAMME (GEIPP)

COMPONENT 1: COUNTRY-LEVEL INTERVENTIONS



COMPONENT 2: GLOBAL KNOWLEDGE DEVELOPMENT



LESSONS LEARNT FROM EIP ASSESSMENTS

INSIGHTS FROM THE ASSESSMENT OF 50 INDUSTRIAL PARKS AGAINST 51 BENCHMARKS IN THE INTERNATIONAL EIP FRAMEWORK

Source: UNIDO (2020). Analysis of results from International EIP Framework assessments.

INTERNATIONAL EIP FRAMEWORK	
Topic	
PARK MANAGEMENT	
(Basic) park management services	
Monitoring and risk management	
Planning and zoning	
ENVIRONMENT	
Management and monitoring	
Energy	
Water	
Waste and material use	
Climate change and the natural environment	
SOCIAL	
Social management systems	
Social infrastructure	
Local community outreach	
ECONOMIC	
Employment generation	
Local business & SME promotion	
Economic value creation	

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
100%	75%	91%	75%	50%	61%	56%	88%
30%	25%	48%	50%	0%	36%	0%	59%
100%	100%	100%	0%	50%	36%	0%	88%
60%	33%	50%	25%	33%	14%	0%	25%
33%	22%	20%	17%	36%	27%	21%	46%
60%	17%	47%	25%	63%	25%	44%	56%
47%	0%	65%	0%	22%	24%	58%	38%
52%	40%	45%	30%	30%	40%	25%	43%
77%	39%	88%	67%	25%	65%	33%	40%
58%	57%	73%	60%	30%	38%	45%	43%
40%	0%	68%	50%	0%	14%	38%	13%
100%	100%	86%	83%	100%	85%	75%	67%
73%	44%	45%	67%	33%	67%	100%	38%
60%	78%	59%	83%	50%	85%	67%	71%

Results from the GEIPP Country-Level Projects

Global EcoIndustrial Parks Programme (GEIPP)				
Environmental benefits				
		2020 Values	2021 values	2022 values
1	Energy efficiency Kilowatt hours saved through energy efficiency	0	1 982 705	23 388 391
2	Renewable Energy additionally produced in kilowatt hours	0	0	1 417 182
3	Water efficiency Cubik meters water saved	0	21 775	46 509
4	Waste reuse and recycling Metric ton material saved	0	12	265
5	Climate change benefits tCO2 Eq. / year	0	1 243	12 952
Social performance and capacity building				
1	Number of SME-staff trained (tenant companies)	81	544	1 676
2	Number of industrial park management-staff trained	89	481	1 062
3	Number of involved staff from relevant governmental agencies	184	969	1 723
4	Number of trained service providers	23	618	1 130
5	Number of EIPs activities by enterprises	0	14	43
Economic Performance				
1	Number of initiatives of provider of business services RECP/EIP opportunities	19	204	459
2	Number of actual investments in RECP/EIP identified options	0	11	30
Policy				
1	Conducive policies and regulations implemented and enforced	1	5	9



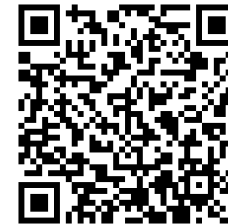
GEIPP Global Knowledge Production

GEIPP Lessons Learnt EIP Best Practices



GEIPP Global Knowledge Production

- Development of **Global Public Goods**
 - **EIP Tools**
 - **EIP Training Materials**
- EIP Online Course with free access to everybody interested
- Strengthening EIP peer-learning networks within and beyond GEIPP



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MORE RESOURCES ON
ECO-INDUSTRIAL PARKS



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

A background photograph showing a group of diverse professionals in an industrial or office setting. They are gathered around a whiteboard, looking at a Gantt chart or project schedule. The scene is brightly lit, suggesting a modern, collaborative work environment.

COUNTRY LEVEL INTERVENTION COLOMBIA



MINISTERIO DE COMERCIO,
INDUSTRIA Y TURISMO



MINISTERIO DE AMBIENTE Y
DESARROLLO SOSTENIBLE



PROGRESS IN EIP POLICY ADVICE

ANALYSIS and AWARENESS

Stakeholder mapping, Policy gap analysis
Establishment and regular meetings of EIP Community of Practice bringing together relevant stakeholders
Introduction of EIP approach as part of the National System of Competitiveness and Innovation.

CONTRIBUTIONS TO THE REINDUSTRIALIZATION POLICY:

Support to the Industry MINCIT in preparation of the Reindustrialization Policy Guidelines

INPUTS TO THE NEW NATIONAL GOVERNMENT 2022-2026:

Ministry of Environment: Contributions to the Sustainable Consumption and Production Policy.

Ministry of Industry: Results and impacts of the GEIPP Colombia.

Private Sector: ANDI Contributions of the EIP approach to the sustainability of Free Trade Zones.

REGULATORY IMPACT ANALYSIS

RECOMMENDATIONS FROM THE REGULATORY ANALYSIS:

- Include the EIP model as an instrument of the new National Development Plan.
- Update the referring regulations to include the EIP guidelines - Decree 2143 of 1979.
- Promote the draft standard with the support of ICONTEC - Colombian Institute of Technical Standards and Certifications.



NATIONAL COMPETITIVENESS AND INNOVATION SYSTEM:

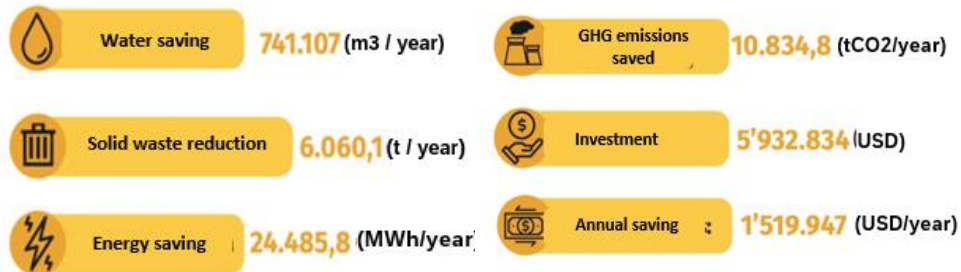
- In Coordination with ICONTEC started the preparation of the Colombian EIP Standard



GEIPP COLOMBIA PRIORITY PARKS

- Zona Franca Occidente (ZFO) (Bogota region)
- Zona Franca De Cauca (ZFC) (Cali Region)
- Parque Industrial Malambo (PIMSA) (Barranquilla region)

EIP OPPORTUNITIES IDENTIFIED



IMPLEMENTED PROJECTS

Level	Status	
	Implemented	to finance
Companies	5	9
Industrial symbiosis	10	7
Industrial parks	1	3
GHG emissions saved/avoided		1,143 ton CO ₂
Energy		1,452 kw
Waste avoided/recovered		245 ton
Green investments		606,195 €

TRAINING ACTIVITIES

Trainings: 23
Participants: 557
Women: 349
Men: 208
Topics: EIP introduction, carbon footprint, EIP legislation, financing for EIP projects.

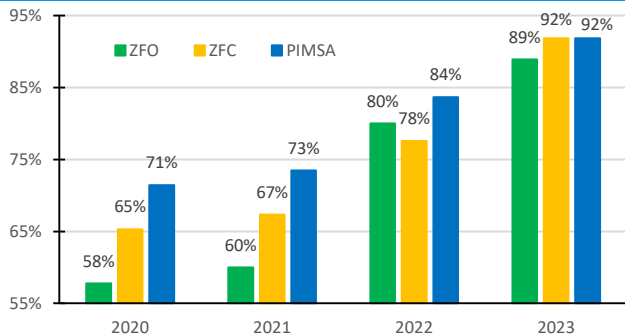


Examples of EIP opportunities identified

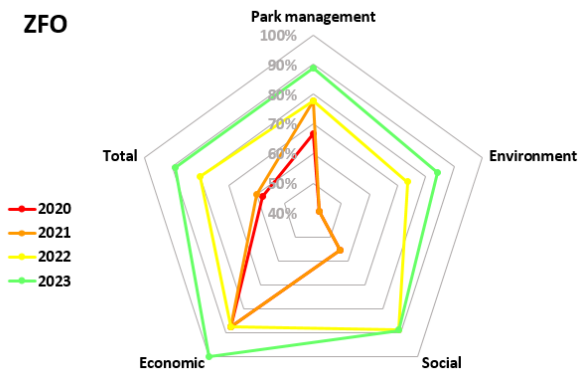
INDUSTRIAL PARK	PROJECTS	CUMULATIVE QUANTIFIED IMPACTS AT FEASIBILITY LEVEL
PIMSA	Cooling District	Energy savings: 5.804 MWh/year Emissions reduction: 963,4 tCO ₂ /year
	Compost and Biodigestion	Gas production: 218.715 m ³ /year - 1.371 MWh/year Energy savings: 420 tCO ₂ /year Waste reduction: 2.040 t/año
	Photovoltaic lighting	Energy savings: 72 MWh/year Emissions reduction: 12 tCO ₂ /year
ZFC	Rainwater reuse	Water savings: 9.137 m ³ /year
	Energy Efficiency	Energy savings: 112 MWh/year Emissions reduction: 18,6 tCO ₂ /year
ZFO	Waste Collection Center	Waste reduction: 47 t/year



PRIORITY PARK EIP COMPLIANCE PROGRESS



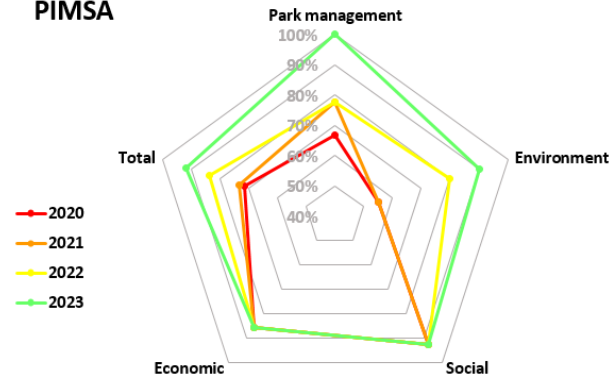
ZFO



ZFC



PIMSA



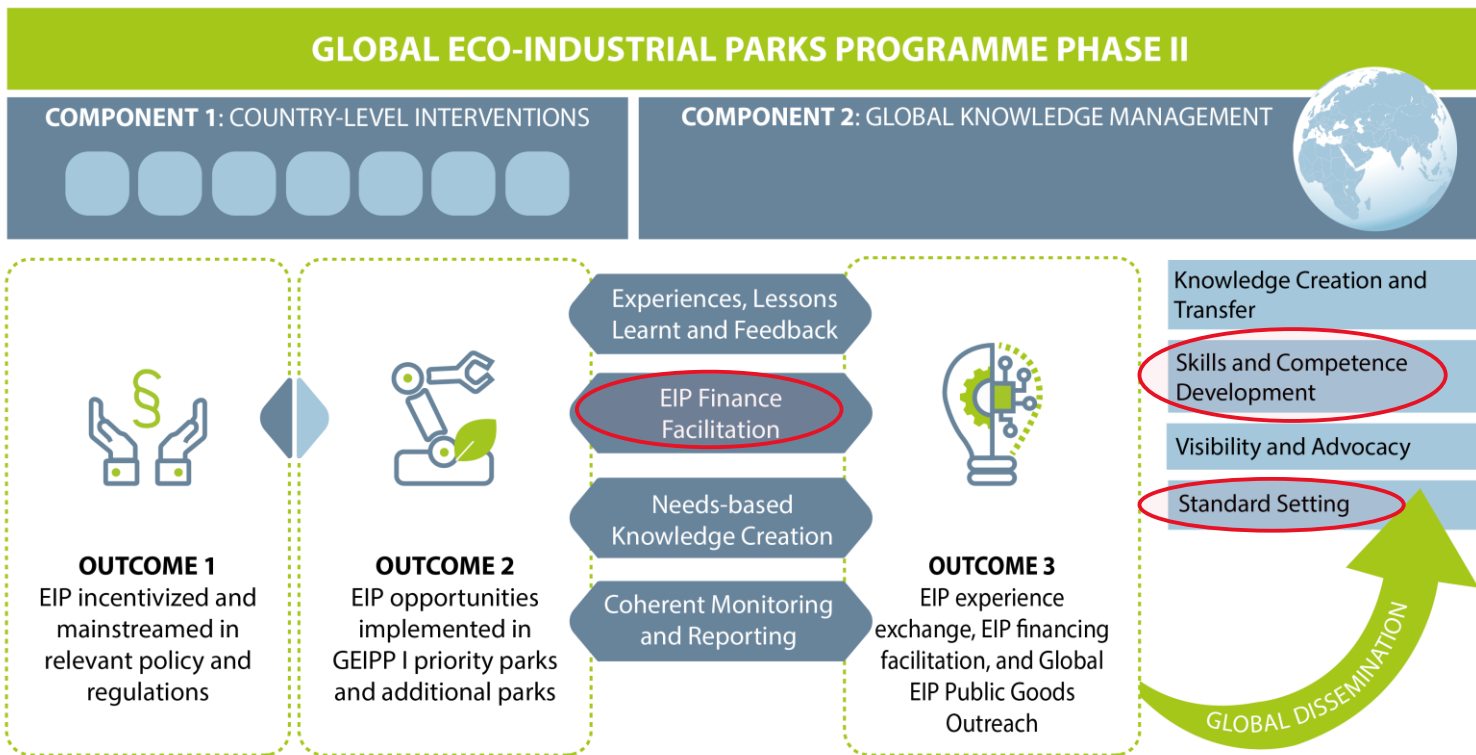
Overall narrative:

GEIPP I: Introduction, enabling and capacitating stakeholders and systems for EIP transition

GEIPP II: Mainstreaming and replication of EIP practices for transition

In the same Priority Countries





OUTCOME 1: EIP INCENTIVISED AND MAINSTREAMED IN RELEVANT POLICY AND REGULATIONS

Output 1.1. Integration of EIP approaches into circular economy-related and industrial policies

Output 1.2. Fostering national EIP recognition schemes including certification, awards and supporting capacity building

Output 1.3. Supporting EIP replication and EIP investments

Outcome 2: EIP opportunities implementation, with environmental (e.g. resource productivity), economic and social benefits achieved by industrial parks and their enterprises confirmed

Output 2.1. Consolidation of cooperation with GEIPP I priority parks

Output 2.2. Up-scaling of EIP opportunities implementation in additional priority parks

Output 2.3. Country-wide facilitation of EIP implementation and establishment of self-sustaining EIP capacities

Outcome 3: Park management entities and tenant companies are familiar with best international EIP practices and are enabled to access already existing financial support mechanisms, and Global Public Goods (e.g. International EIP Framework, International EIP Standards and recognition schemes, EIP tools and implementation guidelines)

Output 3.1. EIP Framework and standard-setting

Output 3.2. Promotion of EIP learnings and international finance facilitation

Thank You

