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Day 1

Introduction to eco-industrial park concept and opportunities for EIP opportunities integration in clusters

Online training 3 and 4 June 2025



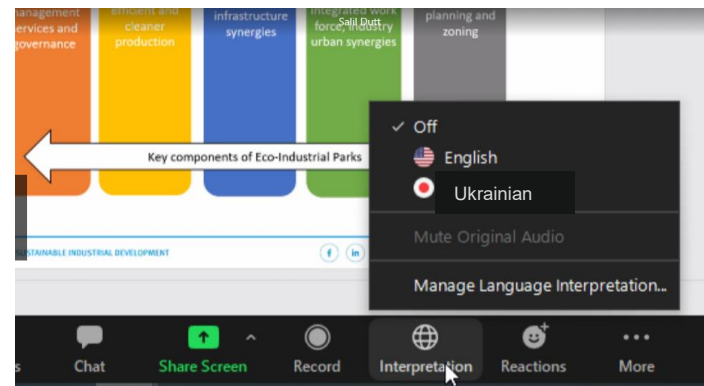
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WELCOME!

Everybody please introduce yourself in the chatbox

- Name, organisation, position





Training objectives

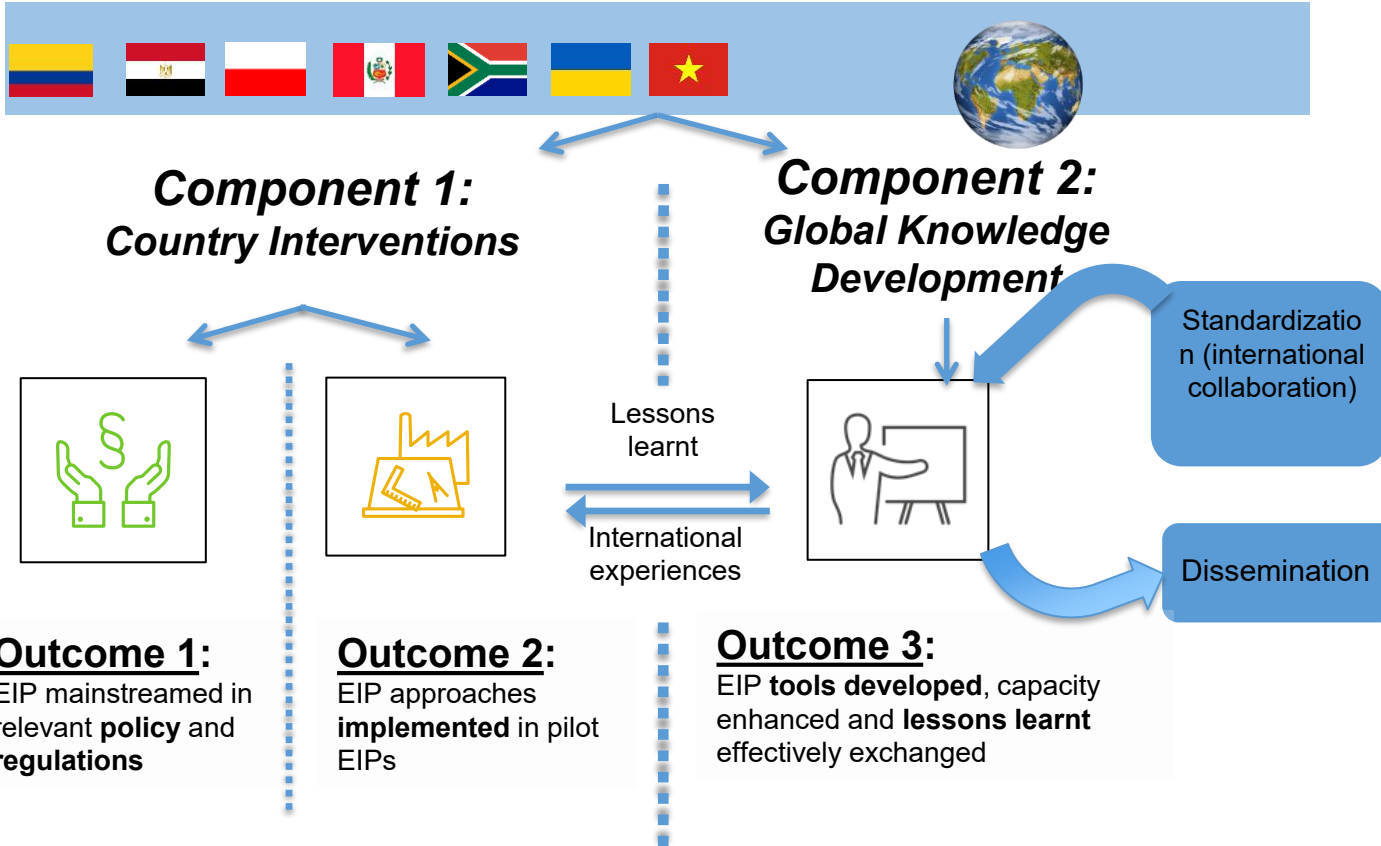
- The training **enhances national capacity** by improving knowledge and skills of regional stakeholders, including communities, SMEs, associations, chambers of commerce, and local authorities.
- Participants will learn about the **Eco-Industrial Park (EIP)** approach and its role in **regional cluster development**.
- The training promotes **circular economy principles**, cross-sector collaboration, and resource-efficient production practices.
- The goal is to empower local actors to implement **sustainable industrial strategies** that improve competitiveness, resilience, and environmental performance within industrial clusters.



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Overview of Ukraine Eco-Industrial Parks Project and practical experiences



Map of the areas where the project has activities

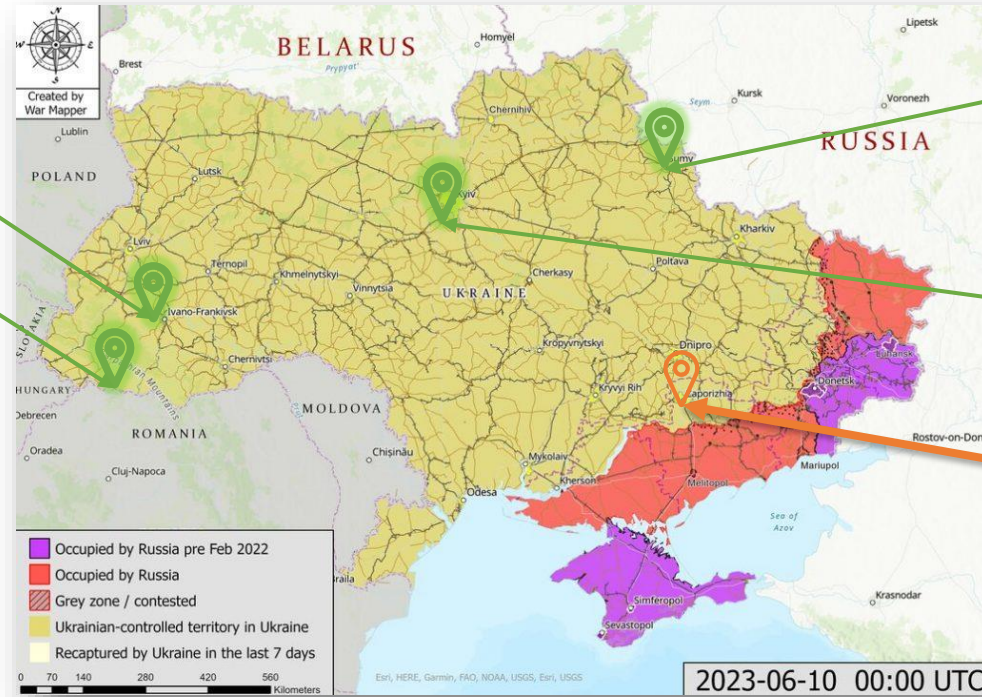
IP Kalush
 Selected in
 December
 2022

IP Molfar
 Selected in
 December
 2022

IP Patriot
 Selected in 2019

IP BVAK
 Selected in 2019

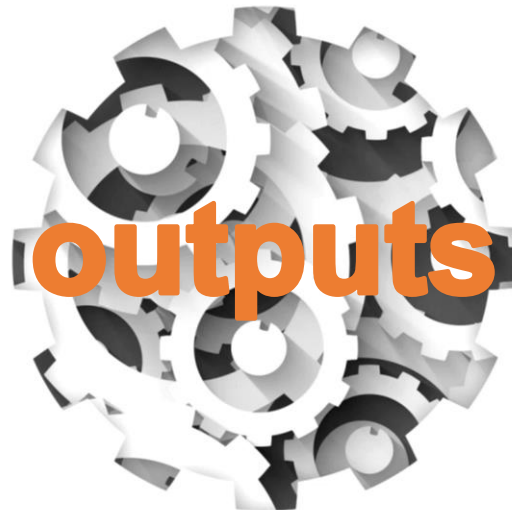
IP Agromash
 Selected in 2019
 Cooperation on
 hold
 since 2022



GEIPP-I UA: About the project

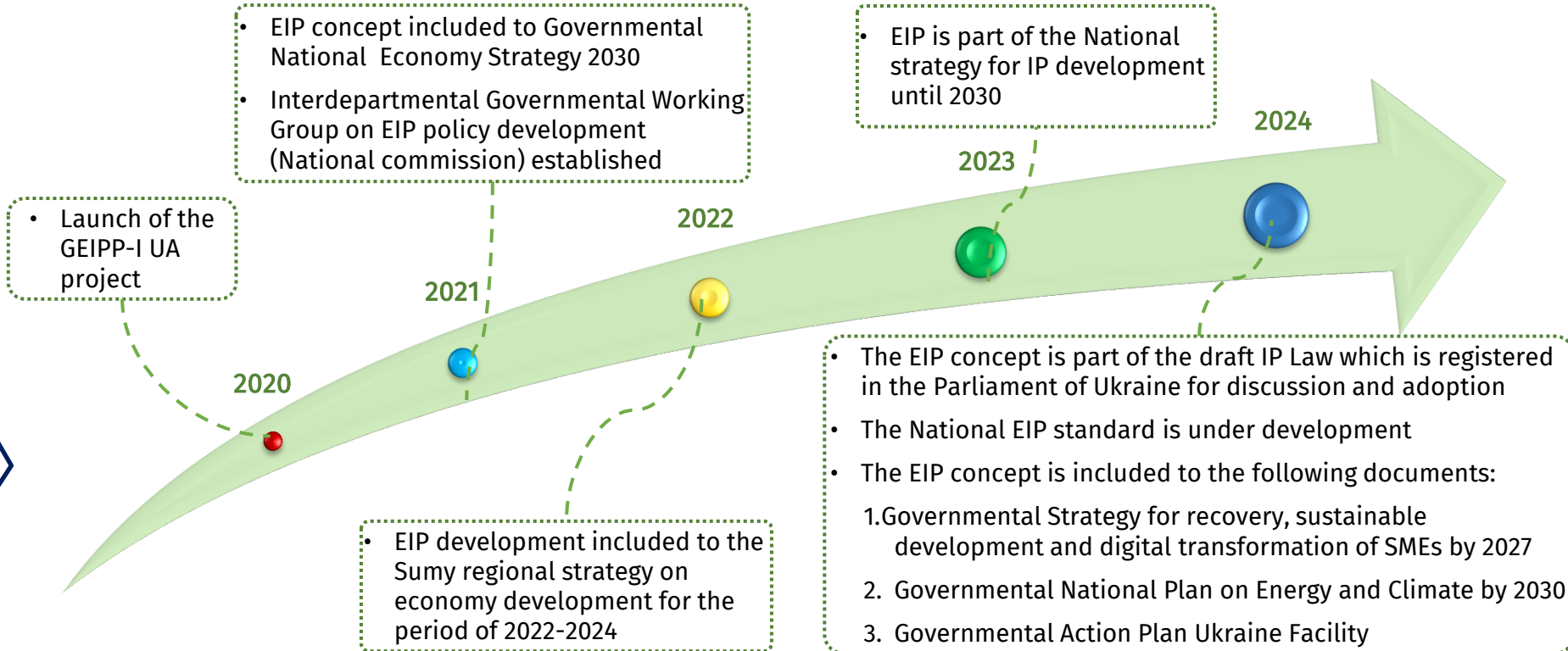
The development objective of the project is to demonstrate the viability and benefits of Eco-Industrial Park approaches in scaling-up resource productivity and improving economic, environmental and social performances of businesses and thereby contributing to inclusive and sustainable industrial development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

Policy
advice

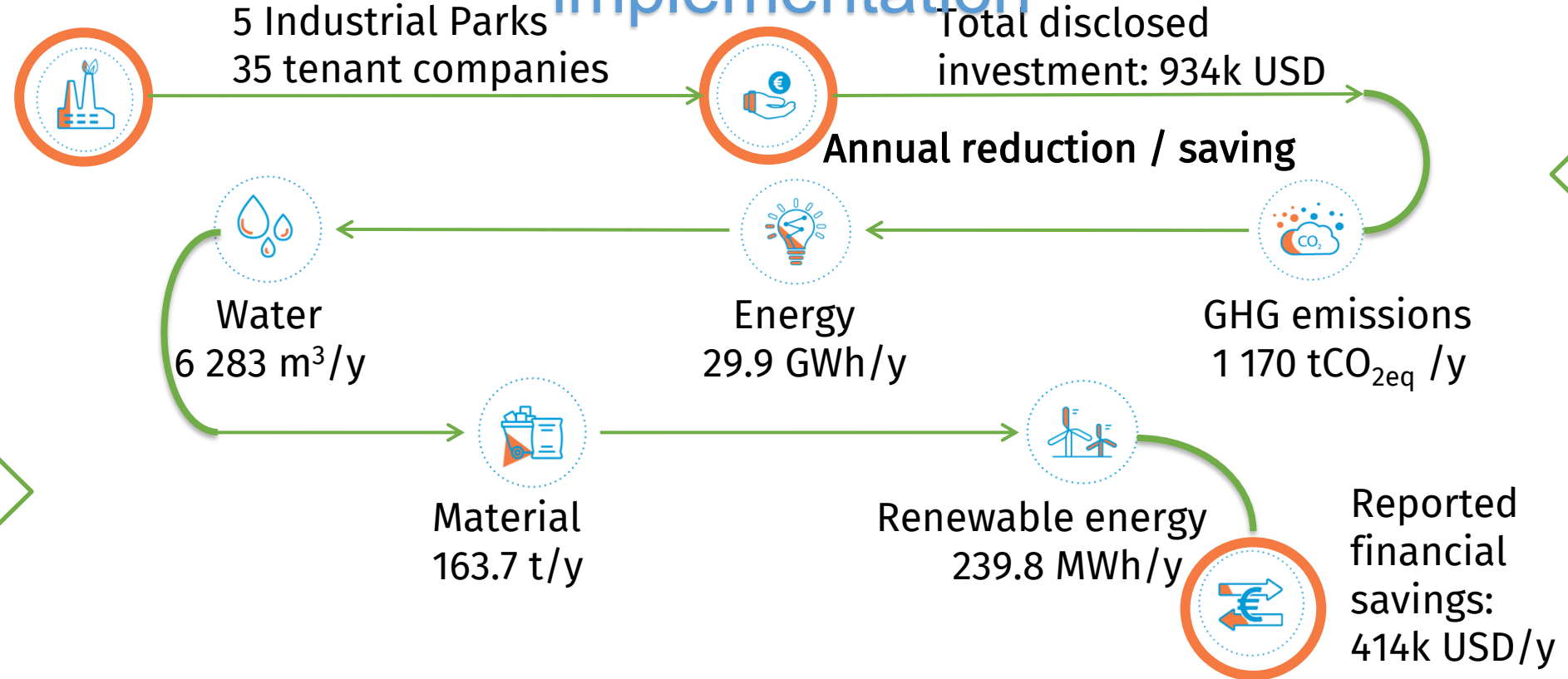


EIP
implementation

GEIPP-I UA: Policy achievements




GEIPP-I UA: RECP implementation




5 Industrial Parks
35 tenant companies


Total disclosed
investment: 934k USD

Annual reduction / saving


Water
57 129 people/day


Energy
15 869 households/y


GHG emissions
53 182 trees/y


Renewable energy
452 households/y

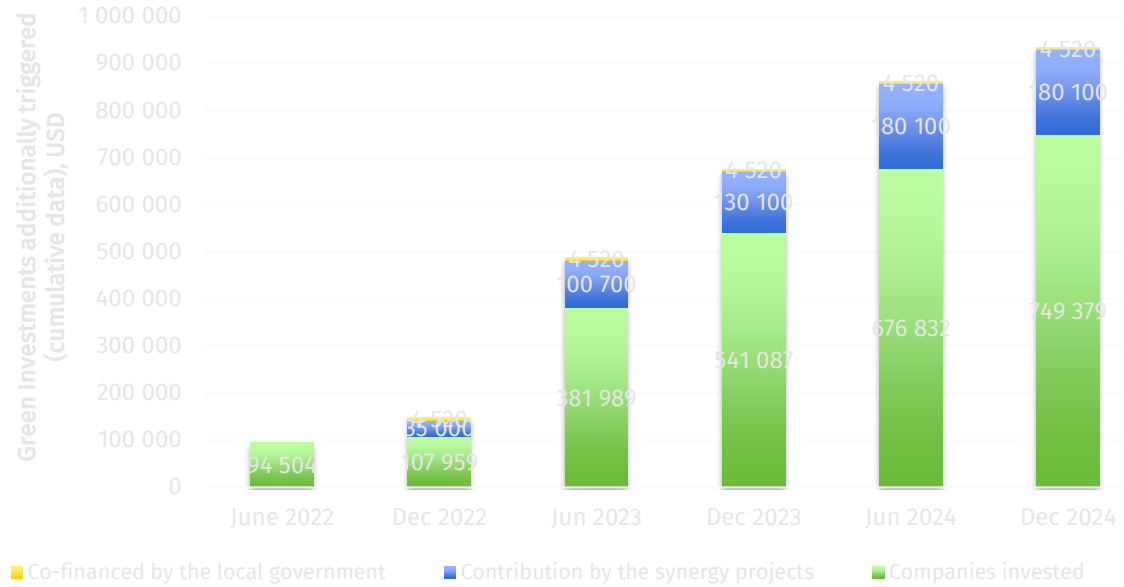
Reported
financial
savings:
414k USD/y

GEIPP-UA: EIP implementation

	IP Patriot (Sumy)			IP Agromash (Zaporizhzhia)			IP BVAK (Bila Tserkva)		
	Baseline performance (2019)	Intended performance	Achieved performance (2024)	Baseline performance (2019)	Intended performance	Achieved performance (2022)	Baseline performance (2019)	Intended performance	Achieved performance (2024)
Overall EIP score	31%	59%	67%	27%	54%	30%	31%	98%	69%
Park management performance	33%	78%	78%	22%	78%	33%	22%	100%	78%
Environmental performance	21%	47%	70%	17%	43%	20%	24%	97%	67%
Social performance	50%	82%	55%	40%	73%	45%	40%	100%	64%
Economic performance	36%	55%	64%	45%	45%	36%	45%	100%	73%

	IP Molfar (Teresva)			IP Kalush Industrial HUB (Kalush)		
	Baseline performance (2019)	Intended performance	Achieved performance (2024)	Baseline performance (2019)	Intended performance	Achieved performance (2024)
Overall EIP score	16%	92%	52%	28%	100%	55%
Park management performance	11%	100%	56%	22%	100%	89%
Environmental performance	7%	93%	50%	17%	100%	38%
Social performance	27%	86%	36%	36%	100%	55%
Economic performance	36%	91%	73%	55%	100%	73%

GEIPP-I UA: Green investments triggered



Lessons Learned

- Park management plays a key role
 - Confidence between park management and tenant companies facilitates outreach to companies.
- Central and local governments should be closely involved
 - The role of the national and local government is a key factor for success
- Partnerships and networking make the difference
 - Established an advisory board to engage with various business representatives and on the other hand a government working group to engage with various ministries
- Communication of results is important, but takes time
 - Quantitative data, such as cost-benefits, should be communicated and tell a positive story to change mindsets



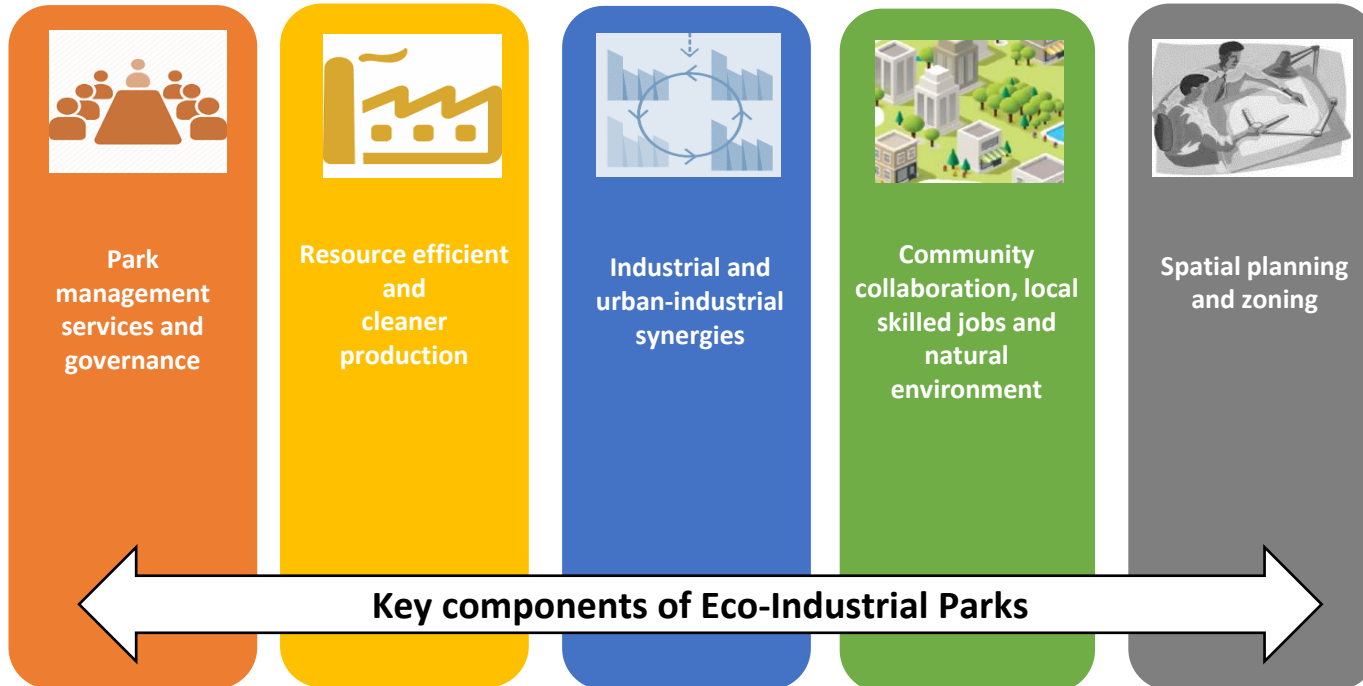
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A woman wearing a white hard hat and a high-visibility safety vest is holding a clipboard. She is standing in front of a yard filled with colorful shipping containers (red, blue, green).

Overview eco-industrial park approaches, benefits and possible integration with clusters

What is an Eco-Industrial Park?

Eco-Industrial parks are about creating more resource-efficient and cost-effective industrial parks which are more competitive, attractive for investment and risk resilient.

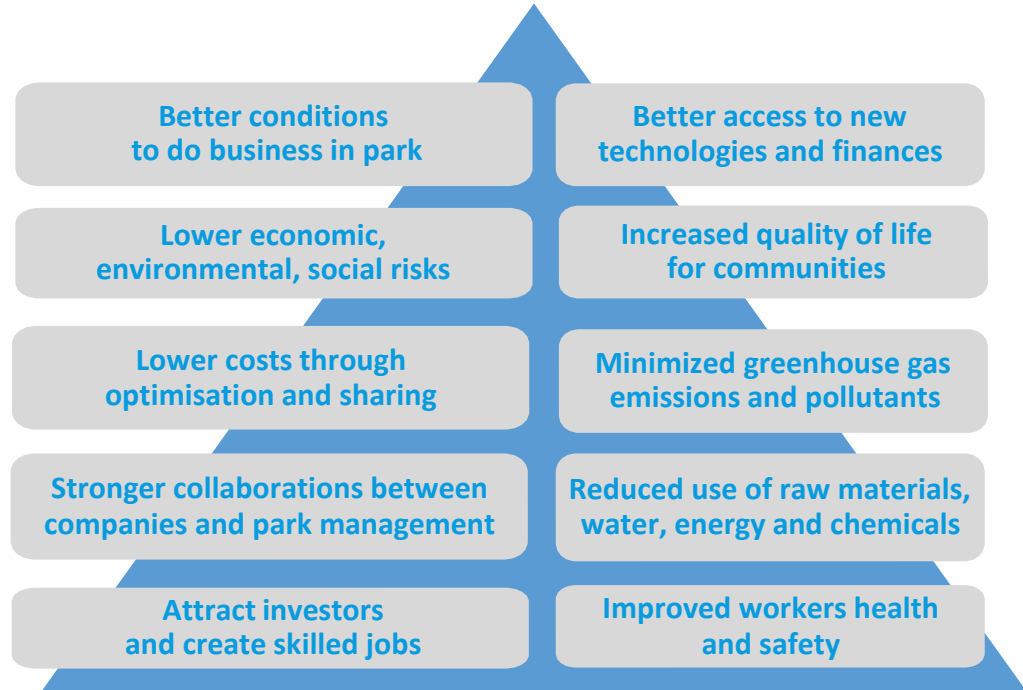


Key benefits of EIP approaches

Beneficiaries



It makes business sense to work on EIPs
Economics, environment, society are truly integrated topics



Many practical examples exist



Ecoplus' extended park management services to 17 industrial parks in Austria
e.g. Investor service hub, industry network creation, research and innovation centres



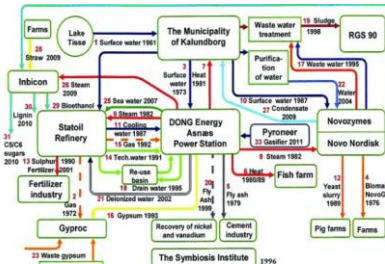
Community development initiatives in the Kwinana Industrial Area, Australia



Resource efficiency assessments with companies in many countries since 1980-90s



EIP concept planning of Parque Industrial Malambo, Colombia



Industrial synergies Kalundborg, Denmark



Use of waste plastics by Clariter in the East London Industrial Development Zone (ELIDZ) to produce solvents, oils and waxes



What is a Cluster?

Cluster is a
sectoral and geographic concentration
of enterprises that produce the same or
similar products and face
common opportunities and threats

CLUSTER = PRODUCT + PLACE

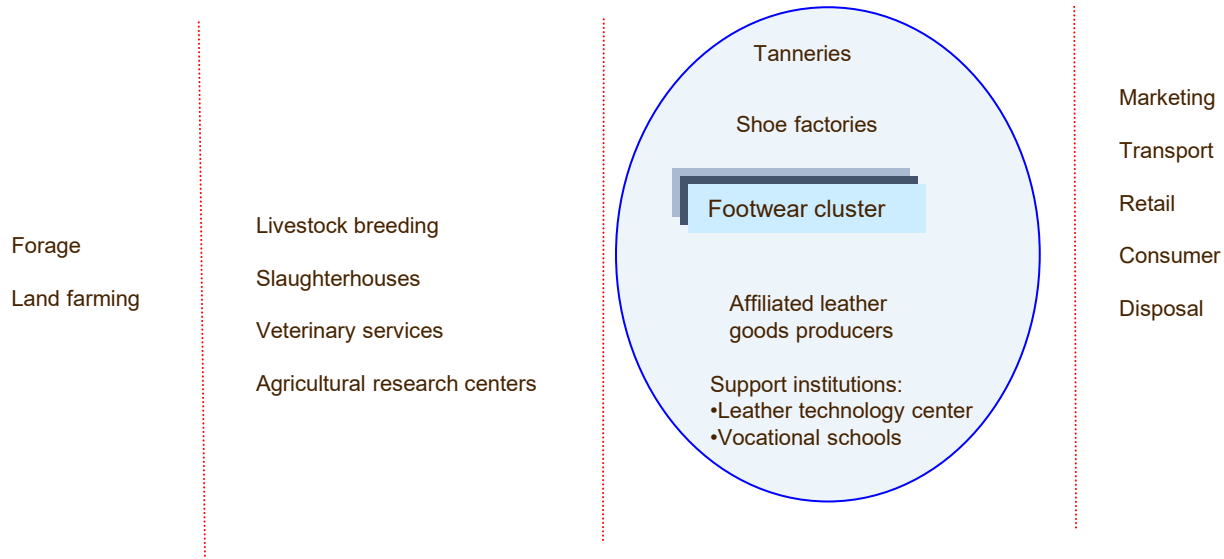
&

FIRMS + SUPPORT INSTITUTIONS

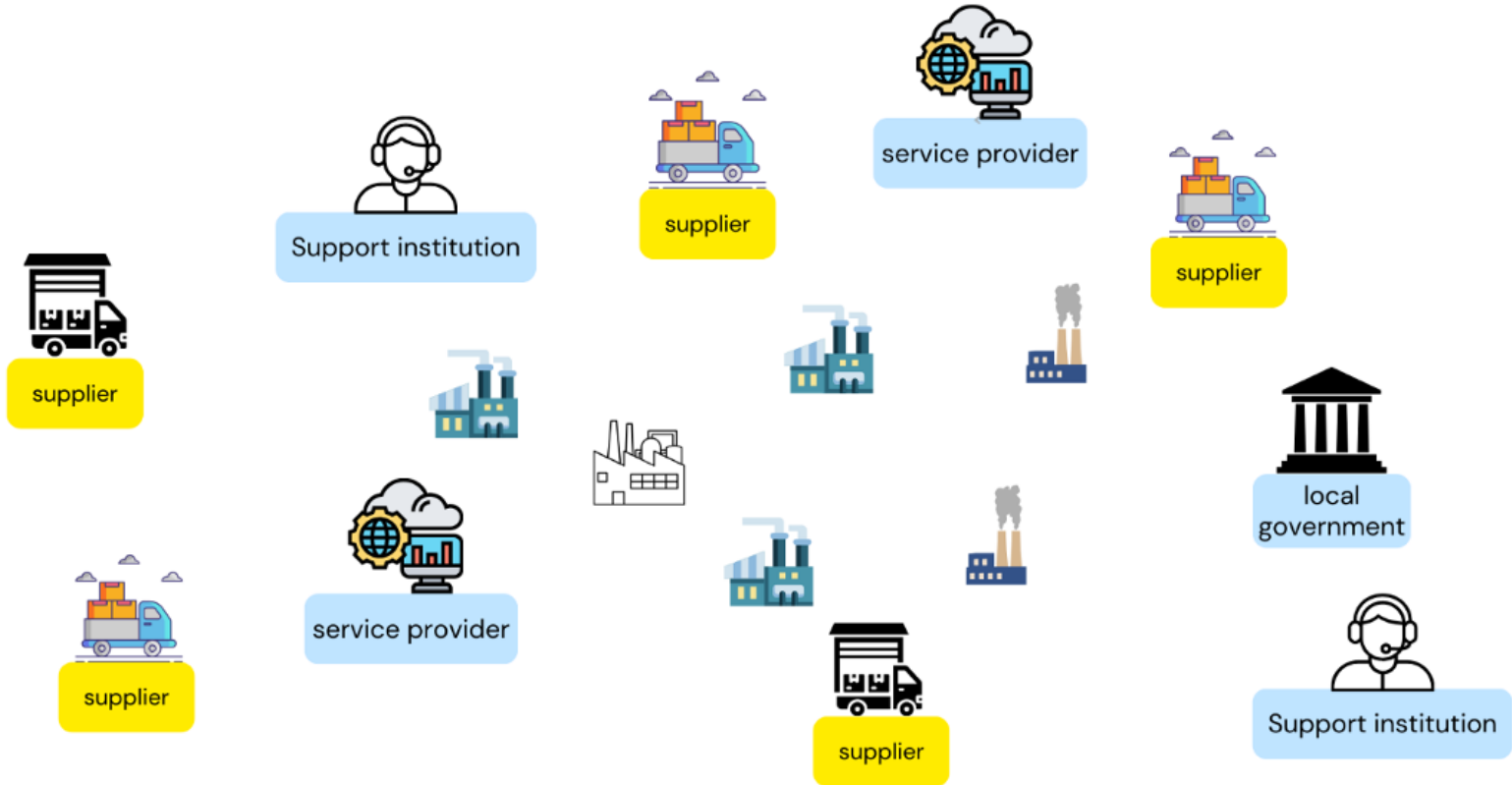
Value chain or cluster?

When the economic actors pertaining to one or more linkages of a VC are located in the same territory → we speak of a cluster

Clusters can be part of a VC but do not (always) exhaust all functions of the chain



Underperforming clusters





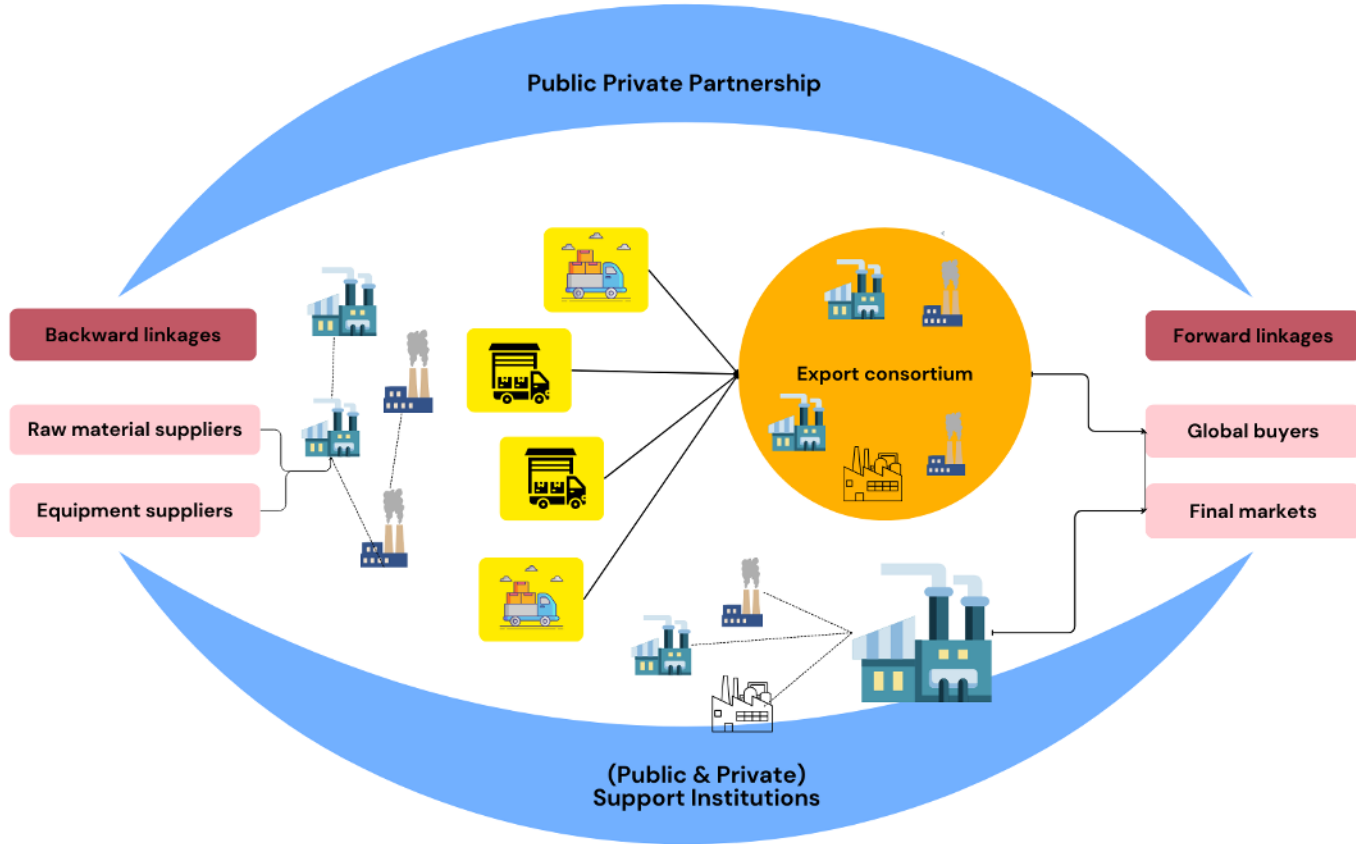
Why clusters don't perform?

Few clusters are able to benefit from collective efficiency gains, because **joint actions hardly arise spontaneously**

- Clusters are trapped in cut-throat competition & stagnation
- No trust amongst firms
- Associations dominated by the more powerful members



Performing cluster





Why supporting clusters?

- Clusters are promising environments for the development of **linkages for competitiveness**.
- Within clusters – SMEs overcome isolation & reach collective efficiency from the organization of
 - **Joint actions** among firms
(e.g. bulk inputs purchase, joint advertising, shared equipment)
 - **Joint actions** between firms & their support institutions
(e.g. provision of technical assistance by business associations or investments in infrastructure by the public sector).
- By engaging in joint actions, cluster firms can achieve results that are out of reach for individual enterprises.



Eco-Industrial Parks & Industry Clusters

KEY SIMILARITIES

1



GEOGRAPHIC PROXIMITY

- Both involve co-located businesses or organizations
- Proximity facilitates collaboration, resource sharing, and efficiency gains

ECONOMIC & ENVIRONMENTAL GOALS

- Boost competitiveness and innovation
- Encourage sustainable development and resource efficiency

2



COOPERATION & SYNERGY

Firms collaborate to:

- Share infrastructure
- Exchange by-products
- Jointly manage logistics, training, or waste

FOCUS ON INDUSTRIAL DEVELOPMENT

- Aim to improve industrial performance
- Often supported by government policies, incentives, and master plans

3



SHARED RESOURCES

Common use of:

- Utilities (energy, water, waste treatment)

KNOWLEDGE & TECHNOLOGY EXCHANGE

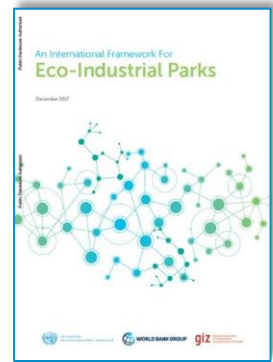
- Enable learning through: • Networks



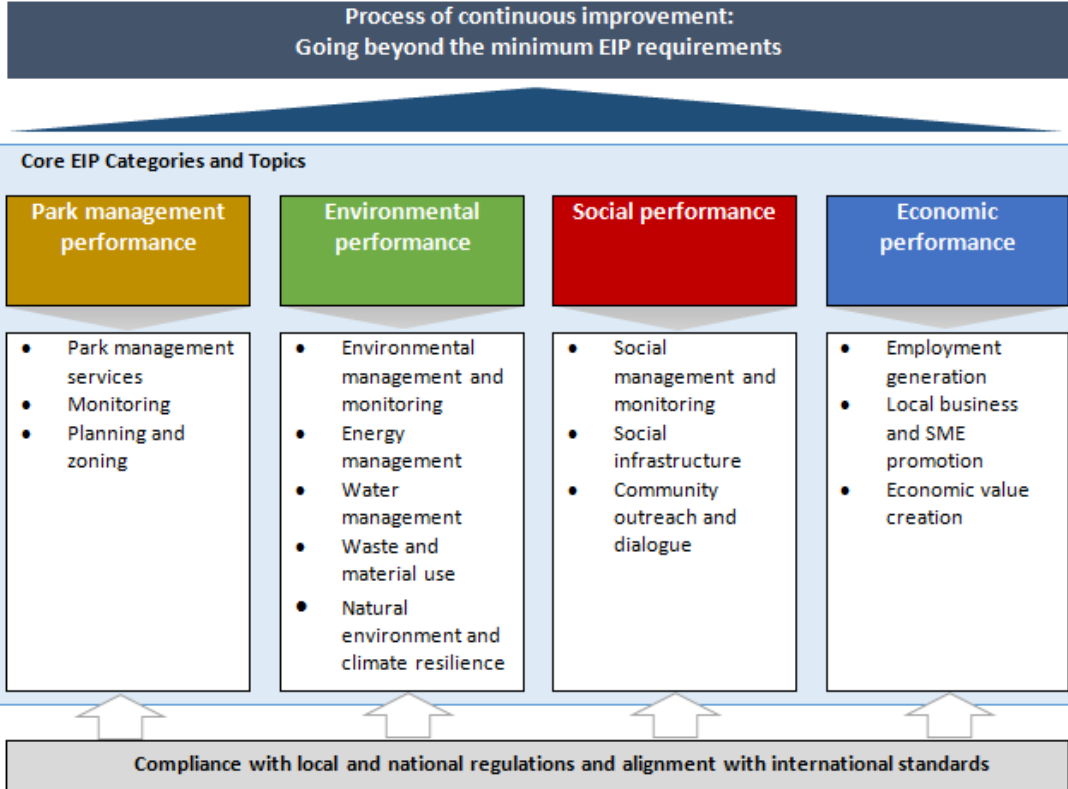
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A woman wearing a white hard hat and a high-visibility safety vest stands in front of a yard filled with colorful shipping containers. She is looking directly at the camera with a neutral expression.

How to implement EIP approaches and integrate it in clusters? UNIDO's EIP tools/cluster development



Minimum EIP Requirements



UNIDO, World Bank Group, GIZ. An International Framework for Eco-Industrial Parks

- <https://openknowledge.worldbank.org/handle/10986/29110>

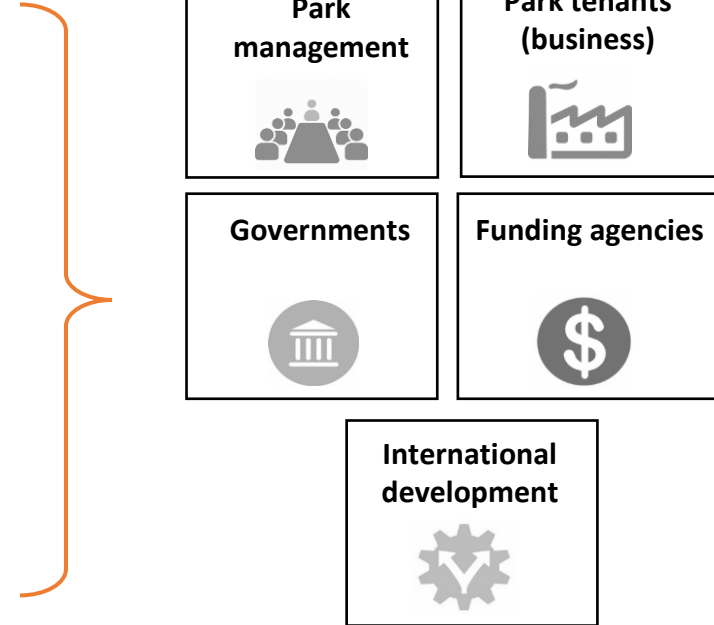
International Framework for Eco-Industrial Parks Objectives



Phase of business development and level of industrial park development			
Park Management performance	Environmental performance	Social performance	Economic performance
<ul style="list-style-type: none"> • Park management • Planning and zoning 	<ul style="list-style-type: none"> • Environmental management • Energy efficiency • Resource management • Water and waste • Health and safety • Environmental and climate impact 	<ul style="list-style-type: none"> • Social responsibility and fair employment • Community development • Employee satisfaction • Employee safety 	<ul style="list-style-type: none"> • Investment attraction and retention • Job creation • Innovation • Competitiveness • Cluster development

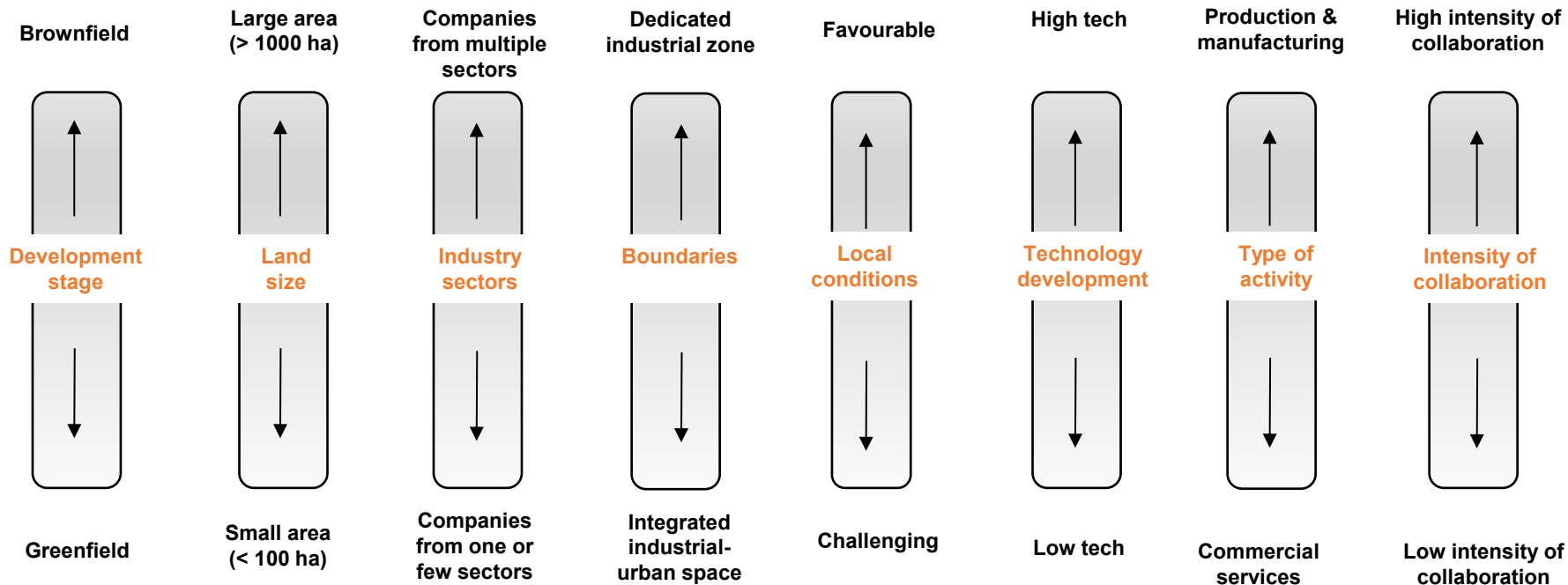
Compliance with local and national regulations and alignment with international standards

- Create **common understanding** of Eco-Industrial Parks
- **Identify improvement opportunities**
- **Monitor and assess performance** of industrial parks
- Inform **investment decisions, funding and due diligence studies**
- Gain recognition and build **market profile**
- Serve as a practical framework to **support decision making**





Each industrial park is unique



**Need for customised solutions
to industrial parks and their companies**



UNIDO's eco-industrial park tools

Planning tools Park level

EIP Concept Planning Tool

Assist in sustainable design of an industrial park

Master Plan EIP Review Tool

Guide sustainability review of existing Master Plan

Implementation support tools Park level

EIP Assessment Tool

Assess park against International EIP Framework and identify EIP opportunities

EIP Management Services Tool

Strengthen and advance services provided by park management to tenant companies

Access to Finance Tool

Identify, review and access available financing options for feasible EIP initiatives

Industrial Symbiosis Identification Tool

Support the identification of waste exchanges between companies

Implementation support tools Country level

EIP Selection Tool

Select parks with high potential for EIP development and successful EIP projects

EIP Policy Support Tool

Support EIP policy development and implementation processes

Monitoring tools Park level

RECP Monitoring Tool

Monitor and report results of RECP assessments in industrial parks

EIP Opportunities Monitoring Tool

monitor and report impacts from EIP opportunities in industrial parks

UNIDO's EIP Toolbox is available online:
<https://hub.unido.org/eco-industrial-parks-tools>



ECO-INDUSTRIAL PARKS

Eco-Industrial Parks - Tools

The EIP Toolbox covers all key components of Eco-Industrial Parks including Resource Efficient and Cleaner Production (RECP), development of industrial synergies, strengthening park management, park selection and scoping EIP interventions, policy support and capacity-building.

All tools are Excel files



UNIDO EIP Selection Tool (EIT)				
BASIC INFORMATION				
PROCESS AND DESIGN TO BUILD AN INDUSTRIAL PARK				
This template for description of the processes and other applied to build the industrial parks, and provide references to database used.				
BASIC INFORMATION	INDUSTRIAL PARK 1	INDUSTRIAL PARK 2	INDUSTRIAL PARK 3	INDUSTRIAL PARK 4
Name of park management / developer	Name of industrial park	Name of industrial park	Name of industrial park	Name of industrial park
Park development model				
Park ownership (e.g. National, Foreign Direct Investment)				
Address/longitude/latitude number of the park				
Google map link				
Total land area (ha)				
Type of industrial park (e.g. Resource Efficient or Greenfield, Expansion or Greenfield)				
Key industrial activities in park				
Approximate total number of companies in park (industrial and non-industrial)				
Number or percentage of small and medium sized enterprises (SMEs) (companies with less than 250 employees)				
Approximate total number of workers in park (Number of workers and service providers separately)				
List of key meeting sub-committees and entities				

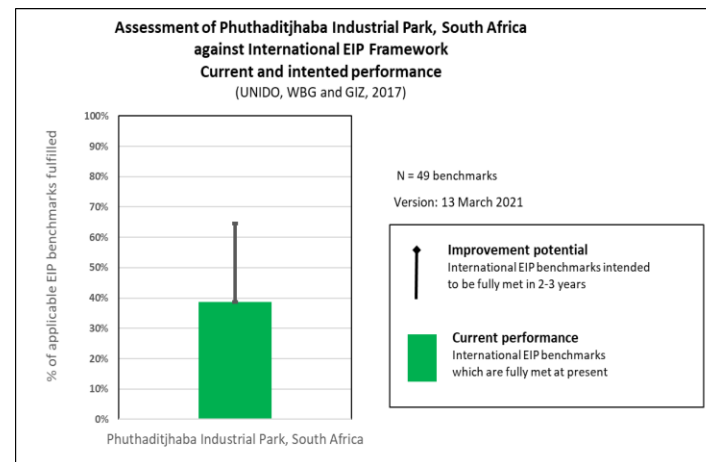
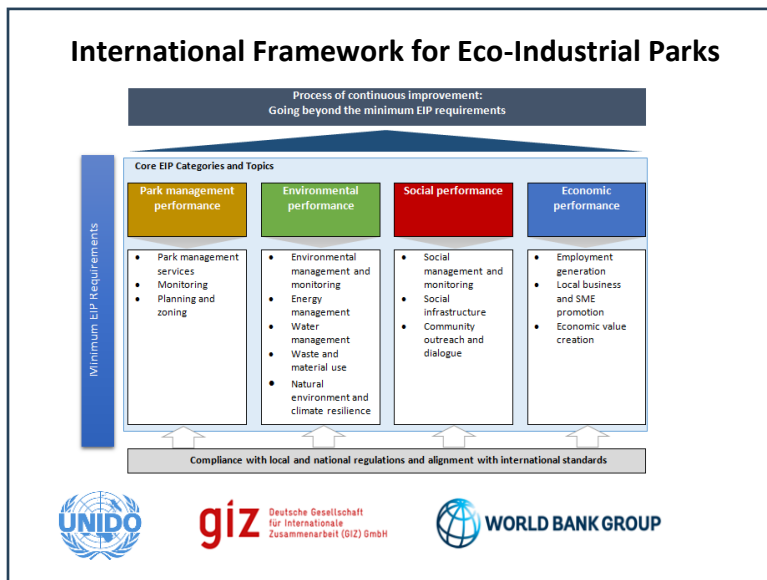
The EIP Tools in English

Jun-30-2021

Attachment	Size
ASSESSMENT TOOL	595.58 KB
ASSESSMENT TOOL Framework 2.0 Indicators	632.75 KB
OPPORTUNITIES MONITORING TOOL	1.16 MB
POLICY SUPPORT TOOL	713.9 KB
SELECTION TOOL	686.14 KB
INDUSTRIAL SYMBIOSIS IDENTIFICATION TOOL	587.16 KB
RECP MONITORING TOOL	964.21 KB
MANAGEMENT SERVICES TOOL	1.66 MB
CONCEPT PLANNING TOOL	5.04 MB
MASTER PLAN EIP REVIEW TOOL	2.55 MB
ACCESS TO FINANCE TOOL (South Africa)	20.85 MB

<https://hub.unido.org/eco-industrial-parks-tools>

1. Assess park's performance against International Framework for Eco-Industrial Parks
2. Identify and prioritize EIP improvement opportunities for industrial park
3. Action planning of prioritized opportunities



Set of practical priority opportunities for industrial park



EIP Management Services Tool

Step 1:

Summarize key challenges, opportunities, and strategic issues facing industrial park

Step 2:

Select service categories to review in detail

Step 3:

Review and prioritize potential added-value services of park management

Step 4:

Scope prioritized added-value services of park management

Step 5:

Action planning for prioritized added-value services of park management



Examples of prioritized new services for ELIDZ:

- Facilitate funding for tenants and ELIDZ
- Coordinate support program to improve the energy efficiency of tenant companies
- Facilitate centralized logistical and warehousing facilities / service
- Organize trainings on topics of common interest of tenant companies



Access to Finance Tool

A total of 231 financing options are included in the Access to Finance Tool for South Africa.

CLICK HERE TO SEE INSTRUCTIONS FOR SEARCHING

CLICK HERE TO SEE SEARCH RESULTS

231 RESULTS

SEARCH RESULTS

#	Name financing organisation	Fund name	Specific focus of funding	EIP initiatives result	Finance threshold	Eligibility criteria	Weblink	Investment opportunity information
63	PROPARCO	(1) Venture capital funds (2) Development Capital funds	Agriculture, Agro-processing, Climate action, Energy, Infrastructure, Community Development	Sustainable land management, (sustainable agriculture, forestry, park green areas, water catchment management)	Venture capital funds ranges between approximately \$3 million and \$7 million. Development Capital funds ranges between \$3 million and \$20 million	The technical and commercial viability of the plan.	https://choose-africa.com/en/offres/investment-fund/	Proparco is the private sector arm of the AFD and finances debt and equity for private firms in developing countries. The company invests in private equity funds and venture capital (VC) funds that support SMEs and start-ups with strong development impacts such as infrastructure and agriculture
72	Enablis Financial Corporation SA (Pty) Ltd/Khula Enterprise Finance Limited	The Enablis Acceleration Fund	Agriculture	Sustainable land management, (sustainable agriculture, forestry, park green areas, water catchment management)	R25 000 to R2,5 million	To qualify for the fund one must meet the following requirements: be a South African SME that is accredited by the Enablis Entrepreneurial Network; are black and women entrepreneurs for startups and for the expansion of a business; SMEs involved in all sectors, specifically ICT, transport, tourism, agriculture and services industry and SMEs that need working capital and/ or asset finance.	http://www.enablis.org/	The Enablis Acceleration Fund is a partnership between Enablis Financial Corporation SA (Pty) Ltd and Khula Enterprise Finance Limited. It is currently capitalised at R50m. Its purpose is to improve access to early-stage funding to SMEs, reach out to SMEs in remote/rural provinces and create new sustainable jobs. SMEs that need working capital and or asset finance.



Industrial Symbiosis Identification Tool

The worksheet "Search by-product" is used to identify potential industrial symbiosis opportunities based on the selection of a specific by-product or waste. For example, the worksheet can inform you what industry can be interested to utilize wood residues.

UNIDO Industrial Symbiosis Identification Tool (V2)

IDENTIFY INDUSTRIAL SYMBIOSIS OPTIONS

SEARCH BY-PRODUCTS / WASTES

GO TO
INSTRUCTIONS

SEARCH BY
COMPANY

REFERENCES

Kindly make your selection under "By-product / waste": Other cells are populated automatically...

1. First, make your selection here!

2. This box lists similar by-products, or alternative names that are sometimes used.

3. Who could sell or buy this by-product?
Here you can find companies potentially interested in your by-product

4. More information?
Please consult "References" for weblinks and academic articles

By-product / Waste	Similar by-product(s)	Possible providers	Possible users	Practical examples	Comments
<i>Wood residues</i>	Lignin residues Starch scrap Pellets Waste paper sludge/pulp Bark	Ethanol plant Starch industry Paper industry Wood industry	Coal power plant Biomass power plant Briquette factory Pressboard/plywood plant Cement factory & construction Fertilizer	Kalundborg Tianjin Guangxi Guitang Styria Kawasaki	



By-product synergies:

- Reuse of up 40,000 tonnes/yr lime kiln dust for desulphurisation of flue gases
- Reuse of 10,000 tonnes/yr of by-product gypsum for soil amendment



Utility synergies:

- 116 MW Cogeneration facility, saving 170,000 tonnes/yr of CO₂ emissions
- 6000 ML/yr Kwinana Water Recycling Facility. Capital costs of US\$ 15 million recovered through long-term water supply contracts



Supply chain synergies:

- Air Liquide and BOC Gases supplying gases to multiple industries
- Cement plant supplying cement products to construction companies



Service synergies:

- Air and water quality monitoring, facilitated by Kwinana Industries Council (KIC)
- Dialogue events with community and government agencies (every 2 months)

Benefits

- Reduced landfilling costs
- Lower raw material costs
- Creation of local jobs
- Reduced operating costs
- Water and material security
- Increased energy, water, and material efficiencies
- Reduced emissions
- Reduced landfilling



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CLUSTER DEVELOPMENT
IMPROVING PROSPERITY BY BUILDING UP NETWORKS.

ABOUT CLUSTERS

THE UNIDO APPROACH

MATERIALS & RESOURCES

NETWORK OF PRACTITIONERS

WHAT ARE CLUSTERS

WHY CLUSTERS

DEVELOPMENT PRINCIPLES

RELATED APPROACHES

FURTHER READING

HOW TO USE THIS PLATFORM



<https://www.clustersfordevelopment.org/>

About Clusters





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A woman wearing a white hard hat and a high-visibility safety vest is holding a clipboard. She is standing in front of a stack of shipping containers in an industrial setting. The background is slightly blurred, showing various colored containers (orange, blue, green).

Conclusions and wrap up



Conclusions and wrap up

- Day 2 of online training on 4 June
- Sharing of slides and summary report
- Follow-up on group discussions
- Feedback questionnaire
- Other next steps?



Online feedback questionnaire

Please fill out online polling questions

Feedback questionnaire for workshop participants

Your name		
Gender (please tick)	<input type="radio"/> Male	<input type="radio"/> Female
Your organisation		

Item	Please rate your experience (tick boxes)					Specific feedback
	Very positive 😊😊	Positive 😊	Neutral 😐	Negative 😞	Very negative 😞😞	
Overall relevance of workshop to your organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quality of the workshop content and materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Relevance and practical application of interactive exercises to support workshop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quality, experience, knowledge of workshop facilitators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Balance between theory, practical examples and interactive exercises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Logistical arrangements for the workshop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

We welcome open feedback in the chatbox



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Thank you for your attention!