Implementation of Eco-Industrial Park Initiatives for sustainable Industrial Zones in Vietnam

World Resource Forum
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Income Drives Resource Consumption

Metabolic rate $/\text{cap/yr}$

The Challenge

Decoupling of Growth from Natural Resource Consumption and Negative Environmental Impacts

The Importance

Global GDP Composition

- Services: 63%
- Industry: 31%
- Agriculture: 6%

Moving Industrial Zones towards Eco-Industrial Parks
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Industrial Zones in Vietnam

Vietnam has witnessed rapid economic growth over the last 10 years mainly from the processing and manufacturing sectors. The Government created industrial development zones for the establishment of new industries with the provision of infrastructure like utility, water and effluent treatment. By the end of 2014, 295 industrial zones (IZ) existed in Vietnam located in 58 provinces (191 IZs in operation).

The industrial growth in Vietnam has brought about adverse change in environmental quality as well as in the human health of neighboring communities!

- Air pollution concentrated on IZ with companies not equipped with air emission treatment systems or using obsolete technologies
- The volume of solid waste increased significantly, 20% of it being hazardous
- 2015: 16% of IZs have not constructed waste water treatment plants; waste water from some IZs is directly discharged without treatment
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Eco-Industrial Parks in Vietnam

Based on established and successful methodologies:

1. Resource Efficient and Cleaner Production (RECP)
2. BAT/BEP for emission control
3. Transfer of Environmentally Sound Technologies (TEST)
### Moving Industrial Zones towards Eco-Industrial Parks

#### Selection of Pilot Industrial Parks in Vietnam

<table>
<thead>
<tr>
<th>Industrial Zone</th>
<th>Province</th>
<th>Total Nr. of enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khánh Phú</td>
<td>Ninh Bình</td>
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<tr>
<td>Hòa Khánh</td>
<td>Đà Nẵng</td>
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<tr>
<td>Trà Nóc 1</td>
<td>Cần Thơ</td>
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</tr>
<tr>
<td>Trà Nóc 2</td>
<td>Cần Thơ</td>
<td>46</td>
</tr>
</tbody>
</table>
Moving Industrial Zones towards Eco-Industrial Parks
Pilot Demonstrations in three Provinces

Can Tho
Da Nang
Ninh Binh
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Main Project Components

1. Policy and guidelines to facilitate the transformation of industrial zones (IZ) into eco-industrial parks (EIP)

2. Capacity building on eco-industrial park (EIP) strategy and measures

3. Identification of eco-industrial parks (EIP) pilot projects

4. Pilot projects in industrial zones and community, and information dissemination
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Main Project Components

- Identification of EIPs pilot projects
- EIP pilots in IZs and communities
- Policy and guidelines to transform IZs into EIPs
- Monitoring and Evaluation

Industrial Zone → Eco-Industrial Park
Main working steps in industry and IZ

1. **Level 1**: Resource efficiency and cleaner production in the individual companies so the production is as efficient as possible and natural resources are not wasted

2. **Level 2**: Remaining waste water reused/recycled within and if not possible outside the park, remaining waste is, if possible, used as a raw material for another process, waste heat will be reused if possible

3. **Level 3**: Remaining environmental emissions (water, air and (hazardous)waste cleaned or discharged in an environmentally acceptable way with end of pipe technologies

4. **Level 4**: Review and adjust services and Guidelines of the IZ regarding the management of an Eco industrial park
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1. Concrete Project Activities

Company Level:
1. RECP audits in min.60 companies (improve resource efficiency in individual companies aiming at min.45 bankable projects)
2. Proposed measures implemented and reductions in energy, water and material consumption per ton of product evaluated

Industrial Zone Level:
1. Remaining emissions and waste reused/recycled within and outside the park
2. Remaining environmental emissions cleaned and reduced with end of pipe technologies
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1. Concrete Project Activities

Public/communities:

1. Awareness programs to disseminate lessons learned to stakeholders including government, NGOs and community representatives
2. Development and implementation of trainings to supervise environmental performance of IZ
3. Implementation of pilot projects to improve the situation of the communities and workers
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2. Capacity building on EIP

Institutions:

1. Capacity on EIP planning and management strengthened among government staff (MOIT, MONRE, MPI) and IZ authorities at the central and provincial level (160 persons from national, provincial and IZ level)

2. Technical capacity on environmental and industrial pollution management and centralized service management strengthened through pilot projects at 3 selected IZ authorities on wastewater monitoring and pollution management
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2. Capacity building on EIP

Technologies at company level:

1. 1. Capacity strengthened to implement clean & low carbon technologies and sound chemical management (including government officials from MOIT, MOST, MPI)

2. 2. Capacity on RECP strengthened among company staff (20 RECP trainers and 200 company workers)
Why a company should participate in the program:

- Professional support in resource efficiency and cleaner production
- Access to new technologies and funding instruments
- Free cleaner production audit
- Reduced production costs as well as improved competitiveness and profitability
- Better environmental performance and better legal compliance
- Reduced waste and less waste disposal costs through cleaner production
- Less accidents through Improved workers health and safety conditions
Summary: Benefits of the project

1. Reduced production costs and better environmental performance for participating companies
2. Improved local and international competitiveness and profitability of companies
3. Better access to new, modern and state of the art technologies
4. Access to financial instruments and funding mechanism
5. Increased efficiency and performance of Industrial Zones
6. Reduced negative environmental impact of Industrial zones, better image in the public
7. Improved workers health and safety as well as quality of life for communities
8. Improved environmental situation in the neighborhood
9. Better legal compliance
THANK YOU FOR YOUR ATTENTION!

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