

Environmental management of industrial parks

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Industrial parks/estates

- There are more than 20,000 industrial parks/estates around the world.
- This number includes industrial districts, industrial zones, export processing zones, business parks, research parks, technology parks, science parks, economic and technology development zones.

United Nations Environment Programme

- In 1995, UNEP's Technology, Industry and Economics office in Paris became concerned that industrial parks were becoming potentially significant influences on the global environment, and as countries industrialized, there would be more of them.

Scale of parks

- These parks range up to 100 km² in the case of the Jebel Ali Free Zone in Abu Dhabi with more than 1600 tenants.
- Some zones have as many as 600,000 people working and living in them such as Suzhou New District near Shanghai, China.
- Burnside is approximately 1200 hectares today with 1300 businesses.

Scale of parks

- There are millions of hectares involved.
- There are hundreds of thousands of companies involved.
- There are millions of workers in these parks and in China, millions of residents.
- The cumulative environmental impacts have to be addressed.

Possible aspects of concern of a cumulative nature

- **air quality across and beyond the estate.**
- **water quality in a groundwater aquifer supplying the park, or concerns over the integrity of the waste treatment system.**
- **water supply which could affect the viability of the estate as a whole.**
- **solid waste disposal.**
- **hazardous waste storage and treatment.**
- **accidents involving dangerous goods.**
- **loss of ecological functions and biodiversity.**

Regional or park EIA

- Few examples exist of regional EIAs that have been undertaken prior to the development of an industrial park with the intention of understanding the environmental and social capacity of the area.
- In the Philippines, The Philippines National Oil Company undertook an EIA which was designed to understand the ecological (air and water) and social capacity of an area in which a petrochemical based industrial park was planned.

Options

- Agency option
- Infrastructure option
- Comprehensive option
- Label or charter option

The agency option

- **Park/estate management encourages tenants to adopt environmental management systems primarily for their own benefit but secondarily, for the benefit of everyone.**
- **This encouragement can be active by offering seminars, training, incentives.**
- **Some parks and airports will include a statement in the policy that “they are committed to developing environmental standards ... promote environmental awareness among the operators, users and staff at Dublin airport.”**

Infrastructure option

- **The estate management implements an environmental management system for its own responsibilities, infrastructure and services.**
- **In some estates, these include roadways, water supply, wastewater treatment, solid waste management and incinerators and recreational facilities.**
- **Batamindo Industrial Park in Batam, Indonesia (operated by an investment corporation) and Suzhou New District in China (owned by the City of Suzhou) have received ISO 14001 certification for their infrastructure and facilities.**

Benefits to Suzhou New District

- Improved ability to manage environmental issues.
- Improved ability to demonstrate compliance.
- Enhanced competitive advantage over other estates in attracting investment.
- Stimulated regional economic development.
- Enhanced awareness of community about environmental issues.

Comprehensive option

- **An environmental management system is developed collectively and at least some components are integrated across estate management and the companies.**
- **There could be some commonality in policy statements, aspects, objectives, action plans, monitoring and review, recognizing that some elements will be specific to the enterprise.**
- **As is beginning to happen in some estates under the authority of the Industrial Estates Authority of Thailand, the approach involves primary stakeholders (the tenants) and secondary stakeholders (surrounding communities) in the process.**

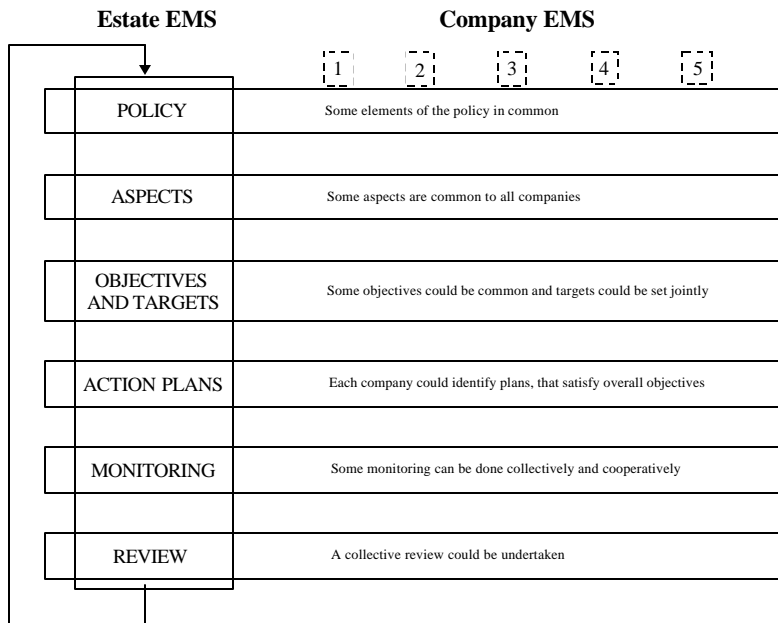
Capricorn Science and Technology Park, South Africa

- This park will be managed by a property owners association (POA) which will take over management responsibility from a developer.
- The POA has developed an EMS that sets the framework for identifying and managing the environmental aspects of the park and its members. The EMS emphasizes activities which could have an impact on common areas within and outside the boundaries of the park.

Hackefors Industrial District, Sweden

- **The companies in the District wanted to raise the environmental profile of the area. An EMS would assist them in achieving this. As SMEs, they needed to pursue a cost-effective approach.**
- **They hired a coordinator to work collectively and individually with companies. The documentation which was developed has one component which is common to all and a second which is specific to each enterprise.**
- **Each company sets its own objectives and the group of companies also sets collective objectives.**
- **This has resulted in overall improvements in waste management and led to improvements in landscaping, equipment sharing, coordinated transportation and discussions about district heating.**

Integration of estate and company EMS



Label/ charter option

- At the present time, this option appears to be pursued only in France. An organization (PALME) has developed an environmental charter or eco-label.
- The charter contains many of the elements of an EMS, including adoption of an environmental policy, objective and target setting, action plans which must be adopted for a set of issues.
- Estates or “zone d’activites” as they are called, take on the responsibility but it clearly cannot be achieved without the support of tenants.

UNEP/SEPA project

- The project, undertaken jointly by UNEP and SEPA, was designed to encourage the adoption of a comprehensive and integrated approach to environmental management in Chinese economic and technology development zones.
- Four estates/zones were selected as pilot projects: Suzhou, Tianjin, Yantai and Dalian.
- Long term plans for these estates is to improve their environmental management with initial emphasis on education and training, cleaner production, landscaping, waste material exchanges, and information systems.

