

International Approaches in Master Planning of Industrial Parks

India: VIZAG Steel Plant:

Total Size: 22,000 acres
Under plant: max. 6,000 acres



Economic and Environmental Efficiency of Industrial Parks



Germany: BAYER Chemical Park Leverkusen:

Total Size: 1,000 acres, 6% undeveloped area
workers: 30,000
Existing since: 1891

Environmental Concerns in India:

Improper Sitting

1. Adequate 'designated sites' in Master or Regional Plans do not exist or the designation is not based on environmental considerations.
2. As a result the development of industrial parks and of affiliated activities like housing, infrastructure and transport is often haphazard and un-coordinated and frequently causes serious disaster risks.
3. Insufficient consideration of environmental aspects often results in over exploitation of local resources, pollution problems, and negative impacts on the surrounding environment.
4. Consumption of land resources higher than necessary to achieve the socio-economic results

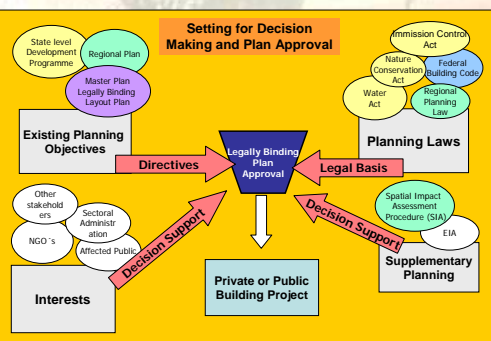
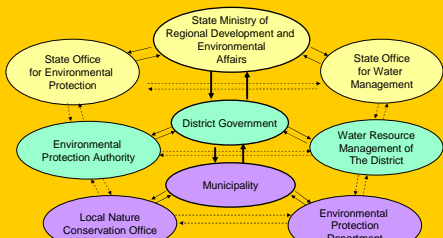
Environmental Problems within the Industrial Park

1. Layout of the industrial parks frequently does not meet the requirements of the industries; e.g. land for different functions (process, storage, transportation, infrastructures and services, disaster management etc.) is not properly allocated and / or not adequately foreseen.
2. Infrastructures like roads, lightning, water supply, sewers, plantation, common effluent treatment plants, waste collection and management facilities are not adequate and / or not managed and maintained properly.
3. Industries are not grouped properly and thus networking for efficient energy / material / waste flow is not possible.
4. Manufacturing processes and pollution control measures in industries are not up-to-date.

Environmental Problems outside the Industrial Park

1. Industrial parks do not fit into the natural settings.
2. Over exploitation of resources e.g. water.
3. Haphazard development of housing areas.
4. Impact on surrounding land uses viz. habitat, agriculture, forests, housing areas etc.
5. Stress on already inadequate supporting infrastructures viz. roads, hospitals etc.

Principles of Plan Co-ordination: Counter Current Principle



Germany uses a two tiers approach with several feedback loops:

1. The spatial Planning Procedure

Reasons for spatial Planning

- Each Planning has a **spatial component**: All natural resources and environmental media are defined by their location.
- **Land and natural Resources are limited**: The demand for land exceeds the available amount of land.
- **The need for protection**: Effective protection of natural resources and their sustainable use requires a proper management.
- **Conflicts have to be handled in a fair and productive manner**: Demands are often conflicting. A clear and defined procedure is required to allocate land uses and to manage these demands in a fair manner.

Basic Objectives

- **Allocate** land use to sites in accordance with their natural capabilities.
- **Preserve and protect** sites of important and sensitive natural resources and environmental media by allowing only a type of land utilisation, which will not adversely affect the natural functions.
- Plan and manage the **rehabilitation** of degraded sites in order to improve environmental quality.

Strategic approach

- **Determine Spatial Development Objectives**: Develop spatial objectives in terms of protection conservation, rehabilitation and development in form of a spatial development plan - prior to any project.
- **Provide Complete Baseline Information**: Compile and assess information on all types, qualities and sensitivities of the natural resources for the total area of a given planning region.
- **Offer Options for Development**: This plan should provide sufficient land selected on ecological considerations for all kinds of future land uses from all sectors of the society such as:
 - ◆ industrial development
 - ◆ residential development
 - ◆ development of the infrastructure
 - ◆ resource extraction etc.
 - ◆ agricultural development
 - ◆ recreation
 - ◆ Protection of natural resources

Principles of Plan Co-ordination

- **Vertical and horizontal Co-operation**: All new plans are developed in direct collaboration and interaction with all concerned authorities
- **Informational notification**: Plan contents of relevance for other plans is incorporated into those plans

Tools for Plan Co-ordination

- Prescribed co-ordination procedures and required degree of **mutual co-operation**:
- by **exchange** of information
 - by **mutual collaboration**
 - by **mutual consent**
 - **informational notification**: plan contents of relevance for other plans are incorporated into them
 - Prescribed time frames
 - Integration of social, economic, ecological and cultural aspects;
 - Involvement of bearers of public interest / stakeholders

Decision Making and Execution

Decision-making as well as execution is the task of the **lowest possible level** within the administrative hierarchy

Examples:

- Licensing and control of industries: county (=taluka), municipality or even city level
- Approval of local master plans: county (taluka) level; for municipalities: district level
- Notification of water protection zones: taluka level, municipalities

Consent Principle

The vertical linkages between national, state and local level are **not directing but guiding links**

Open Result

- Consequences:
- site and situation specific solutions
 - democratic accepted solutions
 - optimum solution under given circumstances

2. The design of the project itself

Site Master Planning Workflow

1. Assessment of property need – including development options
2. Topography of the site
3. Development of a theoretical basis for the site master plan

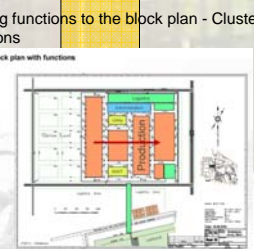
Result

Block Plan with Elevation



Result

Block plan with functions



Result

Site Master Plan Concept

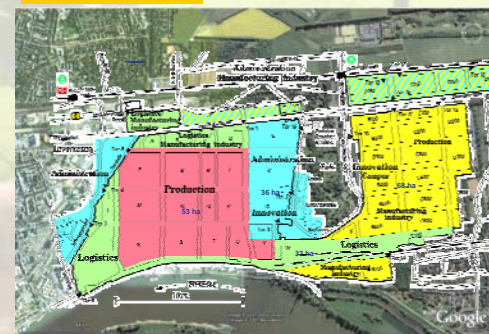


Result

Integrated Master Plan

6. Development of standards for infrastructures:
 - a) Streets
 - b) Sewage system
 - c) Drainage system for surface water
 - d) Concept for fire-fighting water system
 - e) Water management concept including reuse / recycling
7. Safety concept

Site Leverkusen



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