

# Analysis of Planning Guidelines for Industrial Estates in India

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**Abstract**—Industries are major drivers of economic growth and contribute to Gross Domestic Product of a city and nation. Industries have their specific demand for infrastructure (Electricity, Water, and Connectivity) and require labour. Land being a state subject, planning for industrial areas is done at state level. Every state has a different mechanism and guideline for planning and development of industrial areas to facilitate Micro, Small and Medium Enterprise (MSME). Apart from economic policy of the state, the industrialist look for the infrastructure facilities being provided, as every state has a different guideline the study mainly tries to ascertain the common provisions in the guidelines from the state of Rajasthan, Haryana, Karnataka, Kerala, and Punjab. The guidelines are then analysed for the land use division, Infrastructure provision and administrative mechanisms to formulate mandatory and obligatory planning provisions to facilitate MSME. It has been found that providing for industrial land use is not enough but the ancillary and supporting land uses also need to be accommodated like Institutional land (Hospitals, Industrial Training Institutes), Commercial, Services, etc. The list of infrastructure facilities and their mode of operation need to be accommodated as meeting the requirement of the industries at later stage imposes a major challenge for the municipal authorities. Mandatory provisions for environment friendly facilities like ETP (Effluent treatment Plants), waste treatment plant, etc. need to be accommodate as mandatory.

## 1. INTRODUCTION

Industries, secondary sector of the economy is one of the major contributors to the country's GDP and the economy of the city in particular. Industries have specific requirements for water, electricity, and labour which vary from one industry to the other.

Apart from large scale industries there is a huge potential for Micro, Small and Medium Enterprise (MSME) in India as they are mainly responsible for value addition of the product. Currently there are more than 26.1 million enterprises in India with 6.24 persons employed per unit which provide employment to about 59.7 million people. (Source) MSME have a higher labour to capital ratio hence have been a major source of employment. MSME contributes to about 8% of the country's GDP and more than 60% of the industrial product.

The MSME is largely categorized as Manufacturing enterprises and Service enterprises. Manufacturing sector mainly includes Garments, Jewellery, Handicraft Items, Wooden Furniture, Leather Goods, marble and granite Stone products; and service industry includes IT, BPOs, Repairing of Engines, Repair of

Household electronics goods, Coaching Institutes, etc. Industries are classified into Micro, Small and Medium scale on the basis of investment, for a manufacturing enterprise, if the investment on Plant and Machinery is up to 25 Lakh, 5 Crores and 25 Crores it is categorized as Micro, Small and Medium respectively. A service enterprise is categorized on the basis of investment on equipment cost, Investments up to 25 Lakh are Micro, up to 2 Crores are small and up to 5 Crores are medium.

To promote and facilitate industrialization every state has a government or government undertaking organization. The main function of which is to facilitate industrialist by providing them serviced industrial land, Finance, and regulate the industrial activity. Infrastructure corridors are being proposed all across the country connecting the national capital region with the other states, this is mainly to improve the connectivity and expedite the process of industrialization.

Industrial areas are planned mainly in the outskirts of the city, so as to minimize the effect of pollution and effluents on residential area. But, at the same time industries need a large workforce to keep them running, which makes it mandatory to provide for residential area for the workers near / within the industrial estate; with the provision of residential area comes the need for social infrastructure rises at the same time to support the Industrial activity and the residential areas.

## 2. LITERATURE

Considerable researches have been done on industrial area planning, location of industries and industrial policies in the past. It has been analysed that Industry is closely related to housing for the industrial workers, the oppressive density and poor conditions of worker housing near many industries and led to the first zoning and building codes for the early part of the 20th century. There have been many theories for locating industries. From Alfred Weber's 1929 Theory of the Location of Industries, through the work of William Alonso, Edwin Mills and many other theories of industrial location and urban form have flourished.

In the subsequent studies it was analysed that industrial areas developed on the theories posed some operational issues. So, it is necessary to understand the needs of the industrialist,

several Researches have been undertaken with a lot of primary survey in various parts of the world; the basic key criteria taken into account by industrialist can be summarized as:

- Accessibility to the markets, customers, suppliers, workers and road networks were given more importance than access to ports, rail and transit.
- Affordability of the land is the top criteria; industries are highly sensitive to land values, rents and are therefore vulnerable to displacement if not protected.
- The effects of industrial agglomeration are seen on the urban form. Clustering of similar industries and their supplier networks have been seen all across as the common occurrence in industrial districts.
- Compatibility of the industries with non-industrial users is issue and has been the prime reason for industrial users preferring the exclusive areas.
- Industrial users often need large spaces as yards for storage and material handling. Buildings with large bays and high ceilings are most desirable.

With stronger environmental regulations in place, it posed the need for evolution of greener production processes which have higher efficiencies produce minimal waste. Industrial areas have begun the slow process of overcoming the legacy of industrial pollution. Communities are beginning to move away from the rigid separation of land uses and activities. Mixed use is becoming a staple in planning practice. Over the past decade, an increasing number of cities and counties have undertaken detailed industrial land use studies, the anticipated problems in conventionally developed industrial areas are:

- Absence of adequate infrastructure provisions to support the modern industrial processes.
- Uneven clubbing of polluting and non-polluting industries.
- Inadequate provision for ancillary and supporting land uses to the industrial activity.
- Increased travel time of the working class and increased traffic on the commuting stretches.
- Lack of social infrastructure facility.
- Poor Industrial waste management.
- NO grouping of similar industries in industrial estates.

### 3. INDUSTRIAL ESTATE PLANNING IN INDIA

To overcome the anticipated problems and have sustainable development in industrial areas, industrial planning has been given thrust at the national level. Land being a state subject in India, the administration and development mechanisms vary from state to state. Understanding the importance of the industrialization for urban growth, the states have enabled the private developers to provide developed land to the industrialist. This study tries to compare the existing framework for development of industrial areas in the states of Rajasthan, Kerala, Haryana, Punjab and Karnataka. The development

guidelines are referred to bring out the best practices for industrial development of in India.

#### 3.1. Rajasthan

In the state of Rajasthan, RIICO (Rajasthan State Industrial Development & Investment Corporation Limited) is the apex body for development of development of industrial areas. But, with the new industrial policy in place the private developers could also provide for industrial developed land. This move demanded for a supporting guideline for development; Rajasthan township policy was made applicable to regulate the development. The private developers wanted to have the maximum saleable area the provision for higher order of infrastructure facilities was crunched. Ministry of mines and Industry, Rajasthan issued a notification in the same regard on 03 Oct. 2011 via letter no. MOUD /P3(77) /3/10 part-I.

The salient features for the existing guidelines in Rajasthan state are:

- Maximum 70 per cent area can be saleable and 30 Per cent to be reserved for roads and services.
- 40-65 per cent of the land must be utilized for the primary land use (Industrial), 3-5 per cent for the residential and 3 per cent for the commercial activity.
- Within the 30 per cent non saleable area 5 per cent to be reserved for green open spaces and 10 per cent for infrastructure services.
- Smallest subdivided plot size for industry shall be 500 Sq. M.
- The 500 Sq. M plot to be on 12m wide road, 500-1500 Sq.m plot to be located on 18M wide road and plot size more than 1500 Sq. m on 24M wide road.

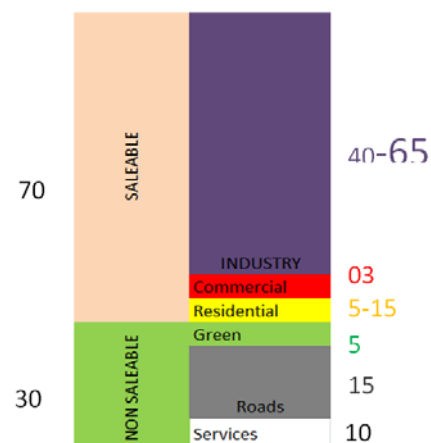


Fig. 1: Land use Division in Rajasthan

#### 3.2 Punjab

In the state of Punjab, Punjab Industrial Department is the apex body for regulating, approving and setting up of industrial units across the state. The plan for setting up industrial estate needs to be approved by a local competent

authority like Municipal Corporation or development authority at the district level declared by the directorate of industry and commerce.

The salient features of the guidelines issued are:

- The minimum area for any such scheme shall be 10 acres.
- Minimum of 60% of area to be developed as an Industrial Pocket and a maximum of 30% of area may be developed as residential pocket and 10% of the area can be developed as commercial pocket.
- Saleable area shall be 65%, 60% and 40% in Industrial, Residential and commercial pocket respectively. Balance area shall be used for common facilities, open spaces, green belt etc.
- Common facilities would include roads (including approach roads), water supply, sewerage facilities, common effluent treatment facilities, telecom networks, electricity, provided that the facilities are used in more than 2 industrial units in the industrial park.
- The developers will need to first develop industrial estate and at least 50% industrial plots will have to be ready for possession to the industrialist before the commercial and housing facilities are allowed to be used/sold/allotted/rented/leased etc.
- Infrastructure development would include roads (including approach roads) water supply and sewerage facilities, telecom networks, common effluent treatment facilities, parking facilities, generation and distribution of power, parks, street light and any other such facilities of common use to carry out the industrial activity identifiable and are to be commonly used.
- Industrial Parks with residential pockets can only have non-polluting units and distance between industrial and other pockets need to be in accordance with guidelines issued by Punjab Pollution Control Board.

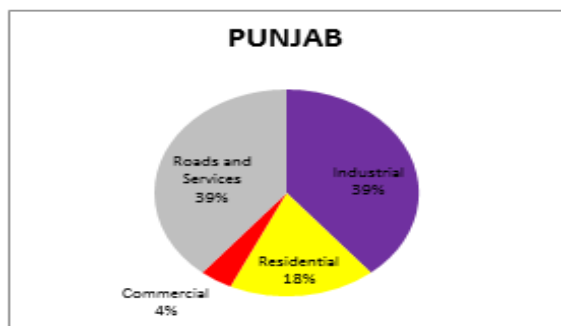


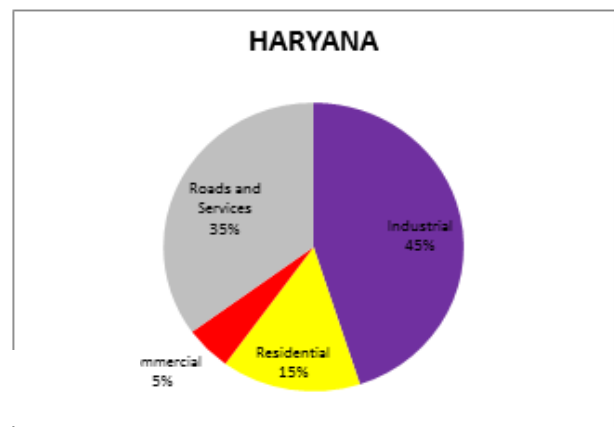
Fig. 2: Land Use Division in Punjab

### 3.3 Haryana

In the state of Haryana, town and country planning department is the body responsible for regulating, approving and of setting up of industrial areas across the state. The plan for setting up industrial estate needs to be approved by Director, town and country planning department. To ensure better planned industrial estates the directorate of industries formulated

guidelines for development in 2013, the salient features of the guidelines are:

- The proposed site must be accessible from a 24M wide approach road
- The minimum area of the scheme in Hyper/ High potential zone shall be 50 Acres; in Medium potential zone 25 Acres; and in Low potential zones 15 Acres. The zones area prescribed as per the Haryana Development and regulation of Urban area act 1975
- The saleable area can be a maximum of 65 percent, of which land under Industrial, Residential/ housing and Commercial shall be maximum 45%, 15% and 5% respectively.
- Of the 15% residential area 3% shall be reserved for industrial workers/ Labor housing.
- The residential population density to be maximum 100 PPA in plotted and 100-400 PPA in case of group housing.
- The layout plan needs to be prepared as per the norms and guidelines issued by Town & Country Planning Department. In case the site falls in an urban Area, the layout plan of the colony has to conform to the sectoral plan of the area. No sectoral plan shall be amended to accommodate the colony under any circumstances.
- An FAR of 1.5 and ground coverage of 40% of the site area shall be allowed for the commercial component with no height restrictions subject to clearance from the Airport Authority of India (AAI). 50% of the permissible FAR need to be utilized for commercial activities incidental to industrial colony.
- The colonizer shall have to complete the infrastructure facilities in the entire industrial colony and sell at least 1/3rd of the plotted industrial area in respect of the industrial use before he is allowed to sell the residential and commercial plots.



### 3.4 Karnataka

The current industrial areas development process in Karnataka is largely government driven. The Karnataka Industrial Areas

Development Board (KIADB) is the apex body for developing industrial areas in the state. KIADB acquires land under the KIADB Act and develops industrial areas/estates on its own and later either operates and manages these areas on their own or hand it over to the respective industrial association formed post development.

KIADB has been successfully developing industrial areas/estates over the years, large set of government resources are channelled for development of these areas. KIADB works from land acquisition to the development to the marketing and branding of the industrial areas.

In order for KIADB and the state regulates the land values of the serviced land, it was necessary to explore the route of private sector participation in the development of these industrial areas/estates.

Private sector participation also ensures the expertise in development and management of the industrial areas and helps to provide the world class infrastructure facilities. For promotion and orderly development of industrial estates developed the KIADB has various models for development of industrial areas.

The KIADB only allows for private participation as per PPP models, in the first model 100% stake is in hands of KIADB, the project is done as a public sector project with funding from state and central government. In model II 50-100% stake is in hands of KIADB, government retains the control over management hence it is less comfortable for the development of facilities. In Model III—26-50% of the stake remains in hands of private sector with which the power of operation and management. The public sector manages the layout and approvals from other departments. In model IV, 0-25% of the stake is in hands of KIADB, where it has NO controlling power but is only limited to comfort of the government. The layout is proposed and approved by KIADB. Model V is for development of single industrial unit on Build own operate model.

### 3.5 Kerala

Southern India has IT sector as one of the major potential. Existence of international IT companies like Microsoft, Genpact, Infosys, Wipro, etc. contribute the major portion of the GDP of the state. Availability of the skilled manpower at lower pay scale has been the major force of attractions to the multinationals. IT industry in India is expected to in the near future, looking at the opportunities available, to facilitate the growth of the IT sector in the state, state government of Kerala has a target of developing 50 million square feet of area for IT and processing area by 2020. For the same relying on the government agencies was not possible as mobilization of funds would have been a difficult and tedious task. The government then came up with a policy to invite for private land developers to develop integrate IT parks to facilitate the IT sector in the state.(16)

For the same IT area Act has been set up and guidelines for developing these areas area:

- The minimum land available for development must be 20 Acres under single ownership and must not be a swampy or cultivatable land defined under the Kerala conservation of paddy land and wet land act 2008.
- The developer must make provisions for processing area along with space for housing, Commercial area, Social, Institutional area, etc.
- The developer needs to provide and manage the sewage treatment plant and solid waste management system in the area.
- The developer must ensure for the water requirement of the area.
- The area must develop and start processing within 7 years of approval.
- The clearance to the development will be given under single window clearance system.
- The park must have a total 1million square feet of built up area for processing.
- The height of the buildings shall be as per KMBR/KPBR and meet the fire safety norms.
- The park must have the capacity to provide for 10000 jobs.

### 4. INFERENCES

Planning guidelines for development of industrial areas in states of Punjab, Haryana, Karnataka, Kerala and Rajasthan are compared. The inferences drawn from the study are then compiled to derive holistic development guidelines to have efficiently planned industrial areas:

- With the state guidelines of Punjab, Haryana, and Kerala emphasizing on the minimum planning area for the industrial area. The need for the same to be understood; as the industrial area requires a lot of higher order infrastructure facilities and amenities, it becomes important to make the provisions economically viable. If there are not enough industries in the area to make use of the facilities provided the provisions will be underutilized and economic liability.
- The approval process for the layout need to be in multiple hands of single organization as this shall make the layout get varied comments and can be refined to have better plan. Also, the practice of approval from a board or a bench shall help in making the system transparent like in Karnataka a board constituting of five members from the field of Administration, Planning, Economics, Environment and Local official approves the layout for the industrial estate.
- The Industrial areas require large road width and more area to provide for higher order infrastructure facilities the proportion of non-saleable area should be higher to about 65-35%.

- Apart from the primary land use, Industrial, other land uses like Residential, Institutional, Services and commercial are also accommodated in the zone to provide housing areas to the workers.
- The minimum lot size and road width needs to be enumerated as it has been done in case of Rajasthan, to keep a check on further subdivision and ensure proper road width in the area.
- For all the states the maximum saleable area is earmarked, but the detail of how the non-saleable area must be distributed to accommodate and ensure even distribution of infrastructure and facilities in the area is not mentioned.
- Industries struggle to keep up with the environment friendly techniques like provision of STP, ETP and waste disposal units, which can be provided as common facility charged by the industries using it.
- Provision for Fire station, Police Station, Banks, ATM, Weigh bridges, facilities for truck drivers to be provided if not available in nearby location.
- Provision of research center, Industrial Training Institutes (ITI) must be provided so that the workers can be trained before being employed.
- KIADB do not allow for development of industrial areas by the private developers but enables them to be a partner with KIADB in its ventures via investment models.

**5. CONCLUSION**

Industries being one of the important part of the city and economy, there is a need to have a deeper understanding of the requirements of industries to cater to the needs. With the facilitation to the industries it is also important to understand the ancillary activities or land uses required to facilitate the industrial workers and the commuting population to the industrial area and proper zoning norms to be formulated to ensure better environment in the industrial neighborhood.

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**Table 1: Comparison of industrial policy of various states**

STATE/ PARAMETERS	PUNJAB	Haryana	Karnataka	KERALA	Rajasthan	REMARK
Development agency			KIADB		RIICO	Every state has government undertaking agency for provision of industrial
Applicable on	Industrial Parks/ estates/Agro parks by private developers	On development of industrial colony /cyber park/cyber city	On industrial estate/industrial township	Guidelines to setup private integrated IT parks and High tech parks on IT policy 2012	Industrial area development	

Minimum Land area	10 Acres	As per the potential of the city High / Hyper potential-50 acre Mid potential-25 Acre Low potential-15 Acre	10 Hectares	20 Acres	Not specified	The minimum project area is specified as it ensures the feasibility for infrastructure facility needed in the industrial area.
Area Division (Complete area)	Industries-60% Residential-30% Commercial-10%	Saleable-65% Infrastructure-35%		Processing area Commercial, housing, social infrastructure, educational institutions etc.	70% saleable 30% for facilities	In case of industrial estate the proportion of nonsaleable area is higher up to 35%-40%.
Area Division (saleable)	Of the divided pocket Industrial-65% Residential-60% Commercial - 40%	Of the 65% saleable Industry-65% (min.) Residential-15% (Max.) of which 3% for workers Commercial-5% (max.)		50% built-up needs to be processing area.	40-65% for the primary Land Use 5-15%-residential 3% commercial	The primary land use is industrial, residential and commercial.
Approval To be sought From	Local competent authority declared by director of industries & commerce Punjab	granted by director town and country planning	From the Board setup by the KIADB in accordance with DIC	Kerala industrial single window clearance board.	DIC in Jaipur Collector in other districts	In Punjab, Haryana and rajasthan the approval is granted by the local authority, where as in Karnataka the approval is via board setup by DIC
Infrastructure development includes	Roads Water supply/sanitation/ drain Common effluent treatment plant Power distribution Parking Park Street lights	Not mentioned		Developer is responsible for development and maintenance of STP and solid waste management system. Must have proven sources of water to fulfil the requirement.	30% facilities (5% open) and 10% for infrastructure.	Percentage non saleable area is given but NO detail of infrastructure provision as to how much area for a particular activity must be reserved is not given.
Other Norms		Residential density to be 100 PPA.	KIDBA has 5 models for industrial development. The private has 4 models for development in which stake is shared by KIDBA, only single factory can be built without the partnership.	Must develop within 7 years.	500 SQM plot on 12M road 500-1500 plot on 18M road More than 1500 plot on 24M road	The Minimum lot size and road width for industrial area is given in RIICO but not in any other states. The model for industrial area development in Karnataka ensure public participation in the schemes.

Source: Author