School Kids near Vijayawada

4 DIMENSIONS OF GROWTH

The economic development and socio-demographic strategy for a specific region would involve integrating the current strengths of the region viz. existing economic activity levels, socio-demographic indicators, connectivity and linkages, natural resources, etc. with the overall vision of developing the region into a sustainable urban/ economic center.

In view of this, a detailed review of the influence region (viz. Andhra Pradesh state) and the Capital Region has been undertaken to understand the current economic and demographic scenario, economic positioning, key natural resources and raw materials present, industrial activity, infrastructure and key initiatives proposed under the AP Reorganization Act, etc. This chapter is divided into the following sub sections:

1. Review of Existing Socio-Economic Information;
2. Regional Economic Analysis;
3. Benchmarking of Capital Cities;
4. Economic Development Strategy for Capital Region;
5. Broad Demographic Projections.

4.1 REVIEW OF EXISTING SOCIO-ECONOMIC INFORMATION

4.1.1 REGIONAL CONTEXT

Andhra Pradesh Overview

Located in the south-eastern part of the country, Andhra Pradesh state is bordered by Odisha & Chhattisgarh on the North, Telangana & Karnataka on the west, Tamil Nadu towards the south and Bay of Bengal on the east. The new state of Andhra Pradesh is spread across an area of approximately 160,200 square kilometers and divided into 13 districts with a total population base of approximately 49 million (2011).

Andhra Pradesh is endowed with a variety of geographic features such as Eastern Ghats, Nallamala Forest and the state is fed by Krishna and Godavari rivers. The state boasts of vast arable fertile land and rich endowments of natural resources such as asbestos, coal, limestone, granite, bauxite, gypsum, manganese, etc. Some of the major urban centers in the Andhra Pradesh state include Visakhapatnam, Vijayawada, Tirupati, Guntur and Nellore.

Regional Connectivity

Andhra Pradesh state is characterized by excellent intra and inter-state connectivity through road viz. NH-5 (part of Golden Quadrilateral) & NH-9, domestic & international airports, extensive railway network and 5 operational sea ports.

The state is very well connected to the regional and national economic hubs such as Hyderabad, Chennai, Visakhapatnam, Bengaluru, Mumbai, etc. via these transit nodes

Fig.4.1 highlights the strategic locational advantages of the state in context of the region.

The location of the state along the eastern coast and its proximity to various economic hubs in the region have the potential to be the eastern gateway of India (like Mumbai which is the western gateway of India) with the Capital Region being located centrally to all the regional economic hubs.

Economic Scenario

As discussed in the preceding section, the state has vast arable land and it accounts for a large agricultural production in the country. It has abundant availability of mineral resources geographically spread over all the 13 districts of the state.

Fig.4.2 highlights the geographical spread of the state, the key natural resources, existing industrial activity and a few notable industrial clusters.

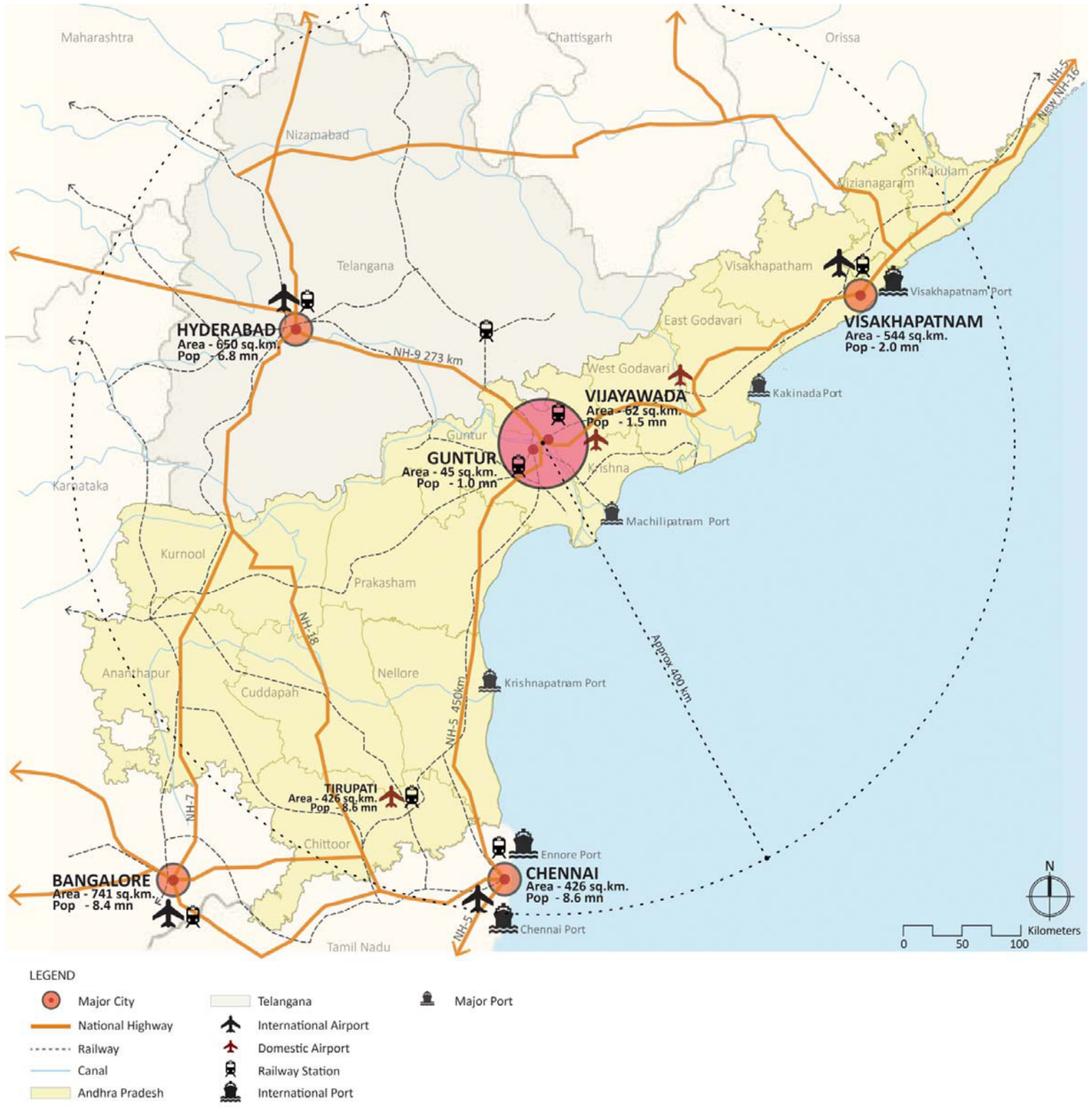


Fig.4.1 Strategic location of the State

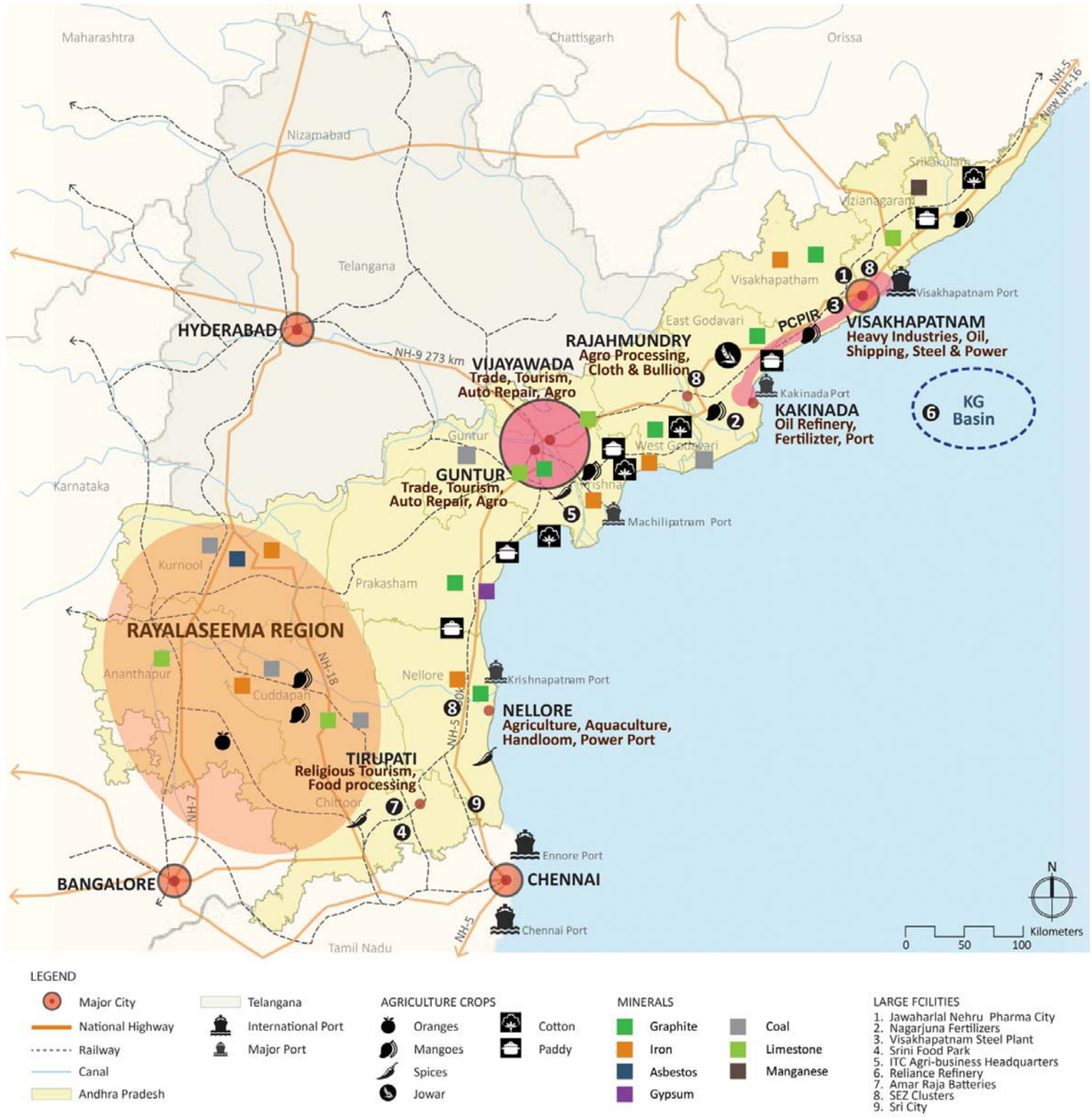


Fig.4.2 Regional Context showing key natural resources, existing industrial activities & industrial clusters

As highlighted before, the abundant availability of various raw materials (agricultural produce, minerals, etc.), biggest natural gas reserves (viz. KG basin near Kakinada) and existing industrial eco-system, etc. provides significant opportunities for the state to evolve as one of the most prominent industrial hubs in the country by aggressively expanding into the downstream activities of already established industrial activities such Food processing, Textile, Automotive, non-metallic mineral products, etc.

Key initiatives proposed under AP Reorganization Act 2014

The future economic development of the region is influenced by the inherent strengths of the region as well as the key economic initiatives already proposed in the influence region. In this context, we have undertaken an assessment of the key economic/ infrastructure initiatives proposed in the AP Reorganization Act, which could be leveraged while developing an economic strategy framework for the state. Some of the key initiatives proposed include:

Information Technology Investment Regions (ITIR) ~ the government has proposed investments worth INR 450,000 million to develop 9,000 acres as ITIR region. The regions are expected to employ 0.4 million people once it's fully operational by 2038.

National Investment and Manufacturing Zone (NIMZ) ~ as part of the Act, two NIMZs have also been proposed at Prakasam and Chittor districts which are to be developed on a land area of approximately 5,000 Ha and 6,000 Ha respectively. The two proposed manufacturing zones are expected to witness an investment of INR 300,000 million and will be able to generate an employment of approximately 0.3 million.

Establishment of a new port at Durgarajapatnam ~ A new sea port at Durgarajapatnam in Nellore district is proposed to be developed by central Government on a land area of approx. 2,035 ha. Land acquisition for the new port is currently under progress.

Expansion of existing Airports ~ Current domestic airports of Visakhapatnam, Vijayawada and Tirupati are expected to upgraded to international airports.

Integrated Steel Plant at Cuddapah ~ The government has envisaged development of an integrated steel plant in Cuddapah with the production capacity of 5 million tons. Total investment outlay for the project will be INR 200,000 million. It is expected to generate an employment of approximately 10,000 people. Land acquisition for the entire project is currently in progress.

Education infrastructure ~ The State was also promised setting up of several renowned institutions such as IIT, IIM, NIIT, AIIMS, Petroleum university, Agricultural university, etc. ~ expected to aid the economic growth of the region, by providing required skill set to employable population.

Visakhapatnam – Chennai Industrial Corridor ~ Asian Development Bank is expected to provide a financial assistance of approximately INR 150,000 million to develop the Visakhapatnam-Chennai industrial corridor proposed by the Central government. Visakhapatnam, Kakinada, Machilipatnam and Tirupati have been identified as the key nodes on the aforesaid industrial corridor. Apart from the cities mentioned above, the industrial corridor will pass through cities such as Rajahmundry, Vijayawada, Guntur, Nellore, Gudur, etc. The industrial corridor is expected to generate a manufacturing output of approximately INR 3,000 billion by 2025.

Development of Metro Rail Facility ~ The Andhra Pradesh government has announced development of 2 metro rail networks in Vijayawada and Visakhapatnam. Vijayawada-Guntur-Tenali-Mangalagiri metro rail (VGTM) is expected to have 4 corridors covering approximately 50 kilometers in phase 1.

4.1.2 CAPITAL REGION OVERVIEW

The Capital region (Capital Region) is spread over parts of Krishna and Guntur districts and covers a total area of approx.7,420 sq. km. The capital region comprises of 291 small villages, 9 medium towns, 1 large city & 1 metropolitan city. It has a total current population of approx. 5.8 million.

The economy of the region is primarily driven by agricultural and services sectors (viz. trading, construction, hospitality). Some of the major crops grown in the region include paddy, jowar, cotton, chili, sugarcane, etc.

The capital region is strategically located centrally to the 2 major urban agglomerations viz. Vijayawada and Guntur. Further, the region has a strong network of transport infrastructure via rail (Vijayawada and Guntur cities have major railway stations), roads (the NH-5 and the NH- 9 passes through the region), and a domestic airport near Vijayawada city (proposed international airport). Further, the capital region is located at a distance of approx. 27 km from the proposed sea port in Machilipatnam, which is expected to handle a cargo capacity of 17 million tonnes.

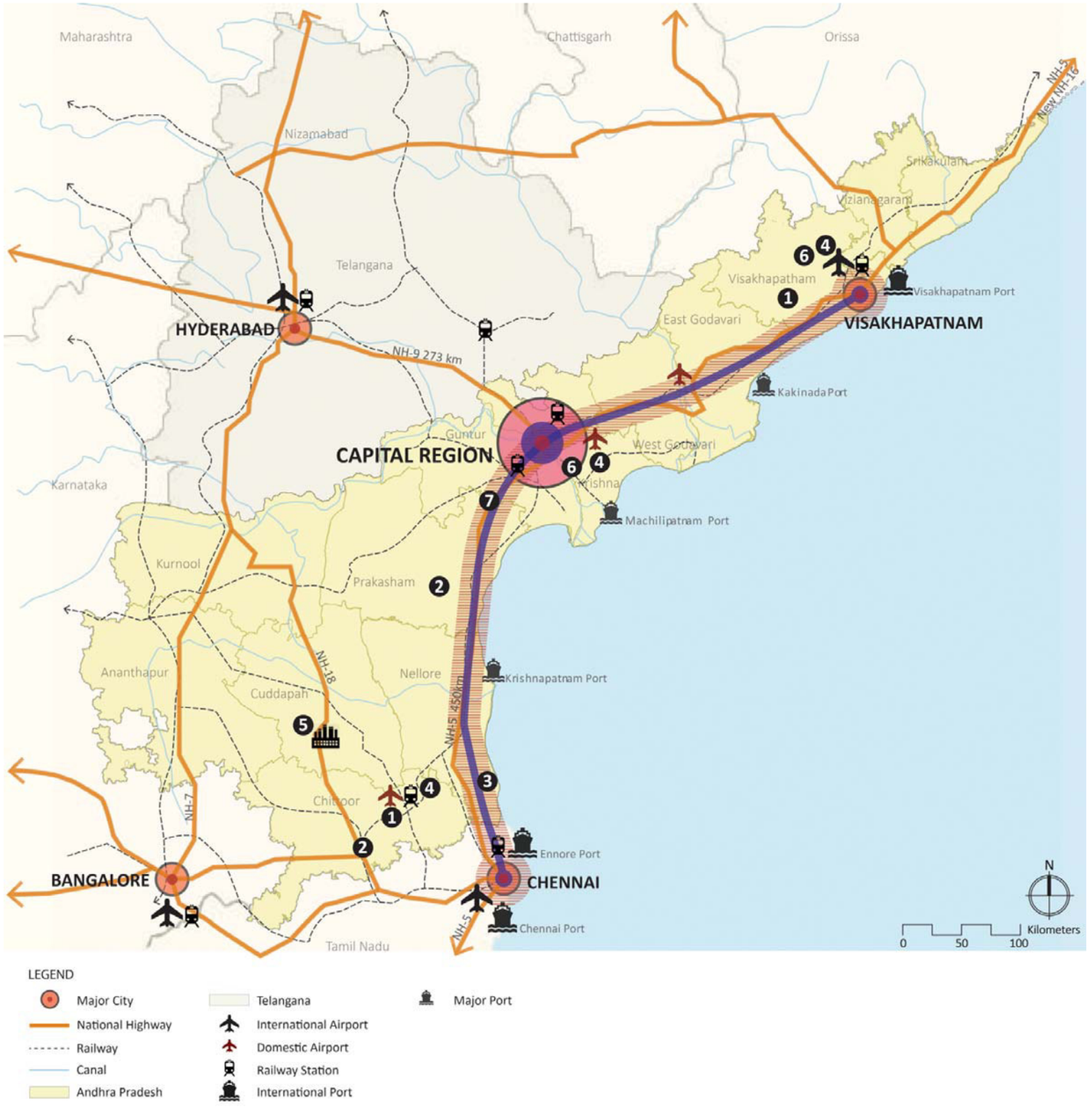


Fig.4.3 Airport, Port & Railway Infrastructure

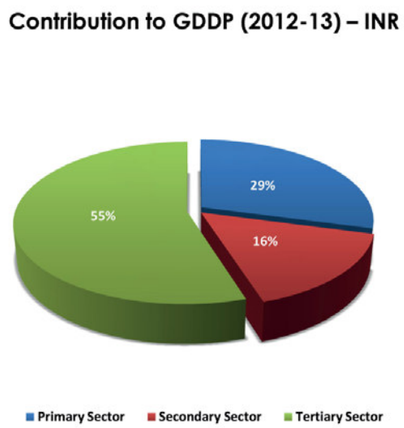


Fig.4.4 Guntur District Economy
Source: Directorate of Economics & Statistics

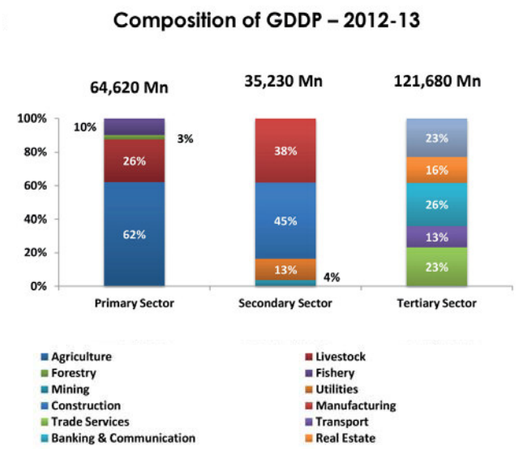


Fig.4.6 Guntur District Economic Composition
Source: Directorate of Economics & Statistics

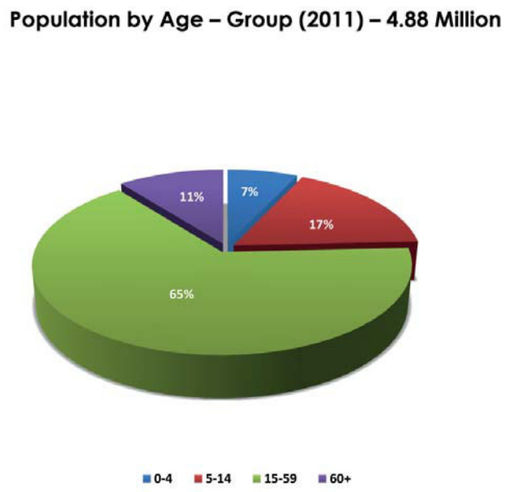


Fig.4.5 Guntur District Demographic Overview
Source: Directorate of Economics & Statistics

Name of Industry	No. of Workers (2011)	%
Food & Beverages	**7,690**	**49%**
Tobacco Products	**1,712**	**11%**
Textiles	**2,069**	**13%**
Leather Products	42	0%
Wood Products	400	3%
Paper Products	344	2%
Chemical Products	237	2%
Pharmaceutical Industry	160	1%
Rubber & Plastic Products	444	3%
Non-Metallic Minerals	**1,420**	**9%**
Basic & Fabricated Metals	1,031	7%
Electrical & Machinery Equipment	154	1%
Total	**15,703**	**100%**

Fig.4.7 Guntur District Employee Distribution
Source: Directorate of Economics & Statistics

4.2 REVIEW OF EXISTING SOCIO-ECONOMIC INFORMATION

4.2.1 ECONOMIC AND SOCIO DEMOGRAPHIC PROFILE

Guntur District Economic Profile

Guntur district is one of the largest districts in the state. 84% of the district domestic product (DDP) of Guntur district is constituted by the services and agriculture segments.

The district is home to various agricultural commodities viz. Chili (Guntur houses the largest chili market in the country), paddy, tobacco, cotton, and minerals such as limestone, quartz, copper, lead, etc. Guntur district is regarded as one of the major agricultural and textile hub of India.

Economic Composition – Guntur District

As mentioned above, primary and tertiary sectors have been the dominant sectors contributing to the DDP of Guntur district. The tertiary sector contributed approximately 55% to the total DDP in 2012-13. Additionally, the primary sector (primarily led by production of chilies, cotton, tobacco, etc.) has contributed 29% to the overall DDP in 2012-13.

Further, in terms of contribution by the sub-segments, agriculture segment has been the largest contributor to the overall primary sector.

In the secondary sector, construction and manufacturing have been the major contributors with a contribution of approximately 83%. However, even distribution has been witnessed amongst the sub-segments of the tertiary sector.

Demographic Overview ~ Guntur District

Guntur is regarded as the second largest district in the state of Andhra Pradesh in terms of population figures (4.88 million as of 2011).

Agriculture based industries such as Food & Beverages, Tobacco and Textiles are providing extensive employment opportunities to the worker population in the district.

In terms of educational scenario of the district, significant improvement has been witnessed in the overall number of students appearing for the senior secondary examination from approximately 37,000 students in the year 2007 to about 46,000 in 2012. Additionally, the pass percentage has witnessed a tremendous increase from 73% in 2007 to approximately 91% in 2012.

The pie-chart on the left highlights the age-group classification, wherein the majority of the population is observed to be concentrated in the age group of 15-59 (constituting approximately 65% of the total population of Guntur district in 2011). Further, 17% of the total population falls under the age-group of 5-14. These trends highlight the significant employable population that the region will be able to supply going forward.

In terms of educational scenario of the district, significant improvement has been witnessed in the overall number of students appearing for the senior secondary examination from approximately 37,000 students in the year 2007 to about 46,000 in 2012. Additionally, the pass percentage has witnessed a tremendous increase from 73% in 2007 to approximately 91% in 2012.

Krishna District Economic Profile

Krishna district, which is located towards the north of Guntur district, is one of the highly developed districts in the state. Services and Agriculture are regarded as the most important activities of the district. Approximately 86% of the district domestic product is constituted by the above mentioned segments.

Further, the district is characterized by presence of rich variety of soils due to which agriculture has emerged as an important occupation. The district also has rich mineral base including limestone, chromite, iron ore, mica, etc.

Economic Composition

As mentioned above, primary and tertiary sectors have been the dominant sectors contributing to the GDP growth of Krishna district. The tertiary sector contributed approximately 58% to the total DDP in 2012-13. Additionally, primary sector (primarily led by production of paddy) has contributed 28% to the overall DDP in 2012-13.

Further, in terms of contribution by the sub-segments, agriculture segment has been the largest contributor to the overall primary sector. In the secondary sector, construction and manufacturing have been the major contributors with a contribution of approximately 80%. However, even distribution has been witnessed amongst the sub-segments of the tertiary sector.

Demographic Overview

Fig.4.11 highlights the age-group classification, wherein the majority of the population is observed to be concentrated in the age group of 15-59 (constituting approximately 66% of the total population of Guntur district in 2011). Further, 17% of the total population falls under the age-group of 5-14. These trends highlight the significant employable population that the region will be able to supply going forward.

Agriculture based industries such as Food & Beverages and Textiles are providing extensive employment opportunities to the worker population in the district as depicted in Fig.4.12

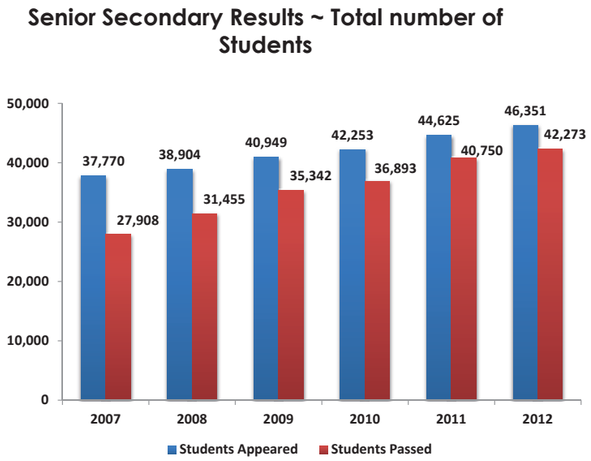


Fig.4.8 Guntur Senior Secondary Results
Source: Directorate of Economics & Statistics

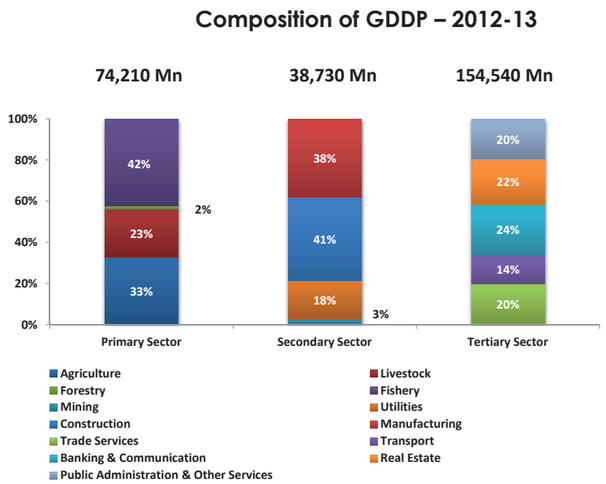


Fig.4.9 Krishna District Economic Composition
Source: Directorate of Economics & Statistics

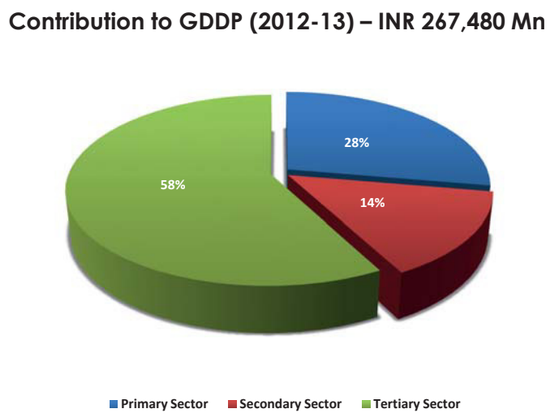


Fig.4.10 Krishna District Economy
Source: Directorate of Economics & Statistics

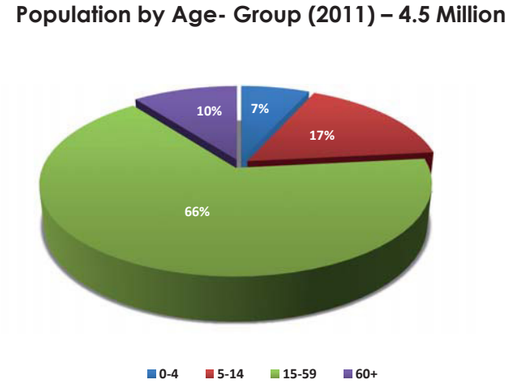


Fig.4.11 Krishna District Demographic Overview
Source: Directorate of Economics & Statistics

Name of Industry	No. of Workers (2011)	% Value
Food & Beverages	16,219	51%
Tobacco Products	41	0%
Textiles	2,891	9%
Leather Products	944	3%
Wood Products	1,122	4%
Paper Products & Printing	2,139	7%
Refined Petroleum Products	474	1%
Chemical Products	1,743	5%
Rubber & Plastic Products	919	3%
Non-metallic Minerals	2,101	7%
Basic & Fabricated Metals	3,371	11%
Total	31,964	100%

Fig.4.12 Krishna District Employee Distribution

Source: Directorate of Economics & Statistics

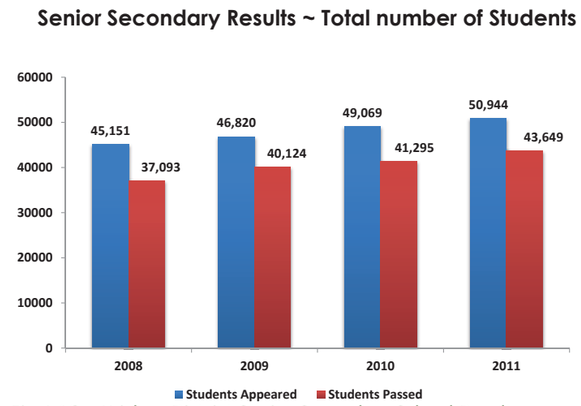


Fig.4.16 Krishna District Senior Secondary School Results

Source: Directorate of Economics & Statistics

Data Sources	Publications	Description
Directorate of Economics and Statistics	Handbook of Statistics 2011; Guntur District & Krishna District	Population by Age group, Industry wise number of workers, Number of students
	District Domestic Product of Andhra Pradesh (2004-05 – 2011)	District Domestic Product (DDP), Break up of District Domestic Product

Fig.4.13 Data Source

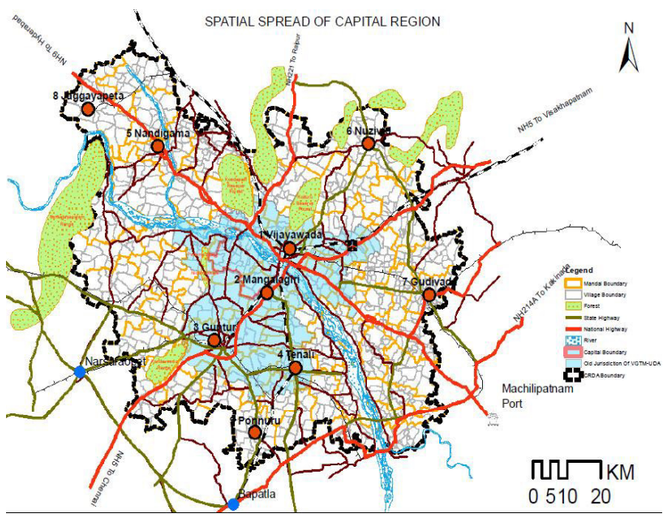


Fig.4.14 Spatial spread of Capital Region

City	Population	Key Economic Activity
Vijayawada	1.5	Regional Economic hub ~ Trading, hospitality, retail
Mangalagiri	0.07	Handloom Industry (Sarees)
Guntur	0.65	Red Chilly Export, cotton spinning/ginning
Tenali	0.16	Trade & Agriculture
Nandigama/ Kondapalli / Jaggayyapet	0.10	Industrial clusters (power, Cement, pharma, plastics, chemical, etc.)
Nuzivid	0.06	Mango Exports
Gudivada	0.12	Aquaculture, Food processing

Fig.4.15 Key economic activity

Further, considerable employment has been witnessed in the Non-Metallic Minerals industry (7%) and Metals (11%) primarily due to the presence of limestone, chromite and iron ore deposits.

In terms of educational scenario of the Krishna district, significant improvement has been witnessed in the overall number of students appearing for the senior secondary examination from approximately 45,000 students in the year 2008 to about 51,000 in 2011. Additionally, the pass percentage has witnessed a marginal increase from 82% in 2008 to approximately 86% in 2011.

Key data sources collated and analyzed

For the purpose of undertaking the economic and socio-demographic analysis of the Capital Region, we have collated and analyzed various data sources. The key data collated and analyzed has been presented in Fig.4.14

4.2.2 SPATIAL ECONOMIC POSITIONING

Based on the detailed mapping of the region, it was understood that the Capital Region is located on either sides of river Krishna with various urban nodes forming part of the region. Further, a detailed assessment of these urban nodes and the corridors leading to these nodes reveals a certain character attached to them in terms of raw material present, type of industrial activity in the region and other geographical features, etc.

The exhibit (Fig.4.15) highlights the spatial spread of the Capital Region and the economic positioning of various urban nodes in the region.

In addition, the study team undertook a detailed mapping of each of the corridors connecting the urban centers within the Capital Region to identify and understand the economic drivers for each of these nodes, which are critical to establish an appropriate positioning strategy for the region.

Fig.4.17 Happy school students at Cricket Academy in Amaravathi Township

Key Vectors – Capital Region Vector 1: Vijayawada-Guntur-Tenali (southern vector)

The vector is primarily characterized by agricultural, sporadic industrial and institutional activity. Guntur city is the major urban agglomeration in the vector, which is known for its large Chili yard and education infrastructure. The city is also the administrative headquarters of the district. It is also the key transit point for various parts of the district. The Mangalagiri-Tenali vector also has a creek passing along the main arterial road rendering the scenic view of the vector. The vector has good intra city connectivity through road and rail connectivity.

Fig.4.18 highlights the economic character of vector 1.

VECTOR 1 - SNAPSHOT	
Key Agro Produce	Mirchi, Cotton
Key Industries	F&B, Textile
Key Minerals	Sand, Granite, Gravel

Cold Storage Cluster

Textile Cluster

Cold Storages

Textile

Industrial

Others

Road Network

Water Canal

Railway Line

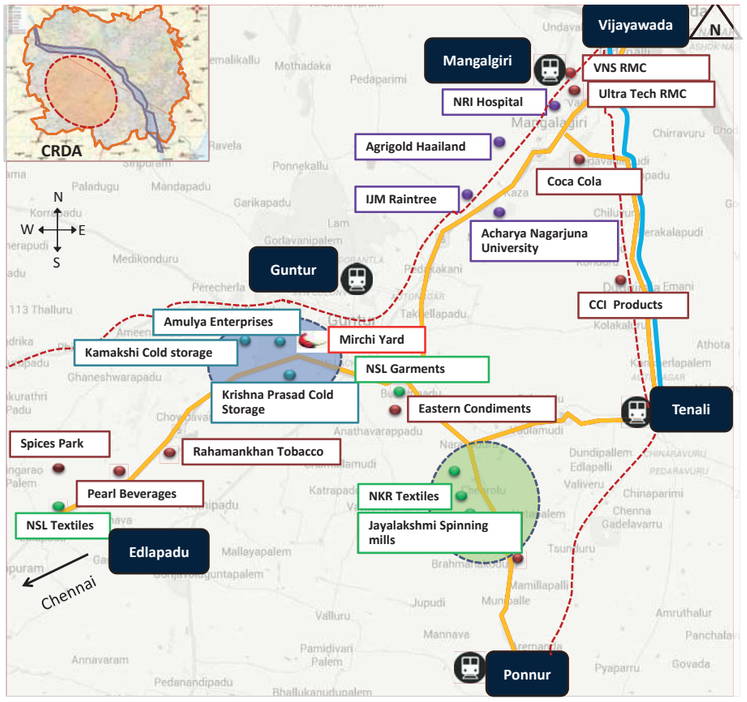


Fig.4.18 Vector 1 Source: Research

Vector 2: Nandigama– Nuzvid – Gudivada - Jaggayyapet (northern vector)

The vector is characterized by the presence of prominent acti vity nodes including Vijayawada, Gudivada, Nuzivid, Nandigama, Jaggayyapeta etc. Vijayawada, the second largest city in the state is located in the vector. The city is widely known for its trading acti viti es viz. agricultural trading, transportati on, automoti ve, retail, etc.

The vector has good inter-city connectivity through road and rail. The domestic airport is also located in the vector.

The vector is primarily characterized by agricultural and sporadic industrial activity. The existing activity is characterized by power, Cement, autocomponents, pharmaceutical, aquaculture and F&B industries. Further, the vector comprises of established industrial clusters such as Kondapalli Industrial cluster, Autonagar Industrial cluster, etc.

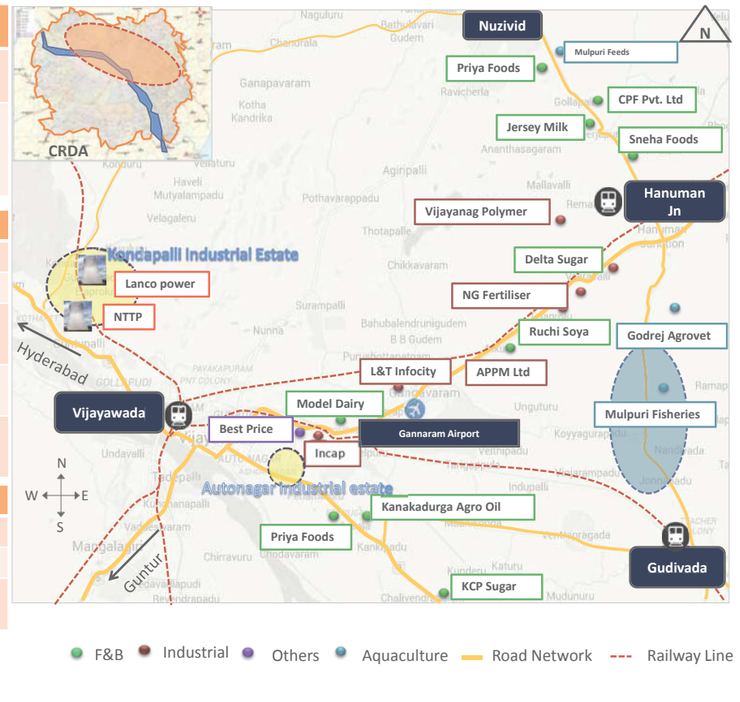
Fig.4.19 highlights the key economic character of the vector

Snapshot	
Key Agro Produce	Sugarcane, Fruits, Fish
Key Industries	F&B, Aquaculture, Power, Auto Components, Pharmaceutical

Kondapalli industrial cluster	
APHM	Engineering
HIL	Non Metallic
Nifty Labs, ORC labs, Kekule, Orch	Pharmaceutical
Hindustan Food Products	F&B
VD Polymers, Lorvens, Bhavana	Plastic

Autonagar industrial cluster	
Navata Transport	Logistics
VRL Transport	Logistics
SR Auto	Auto components

Aquaculture Production



F&B Industrial Others Aquaculture Road Network Railway Line

Fig.4.19 Vector 2 Source: Research

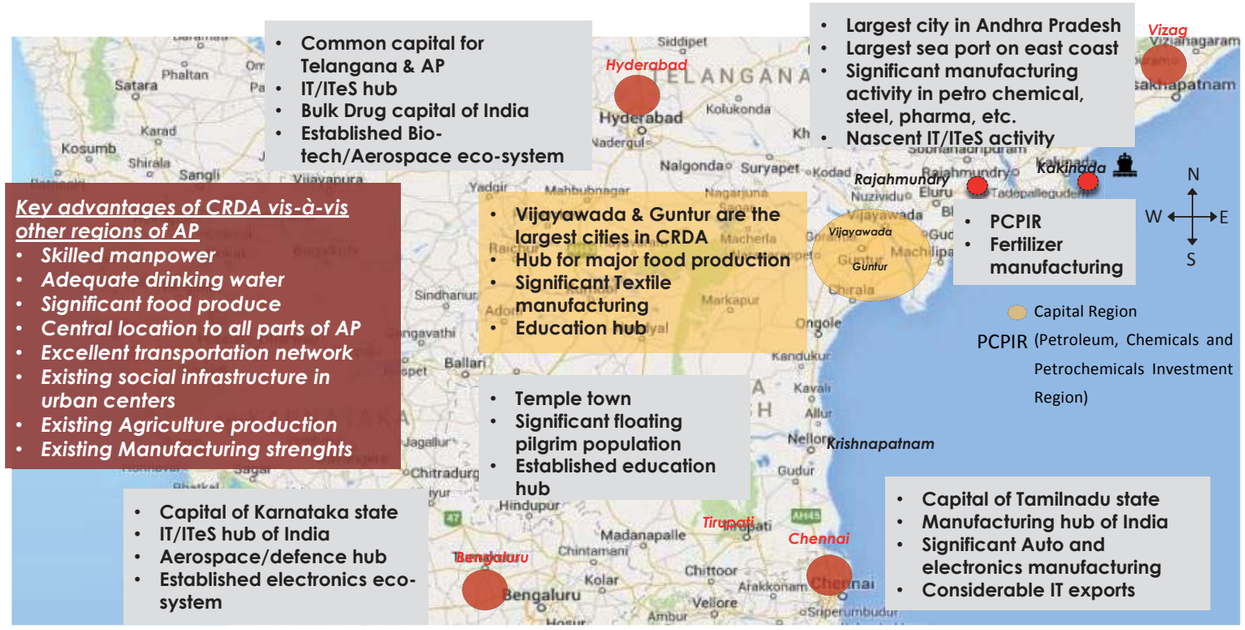


Fig.4.20 Regional Economic Positioning Source: Research

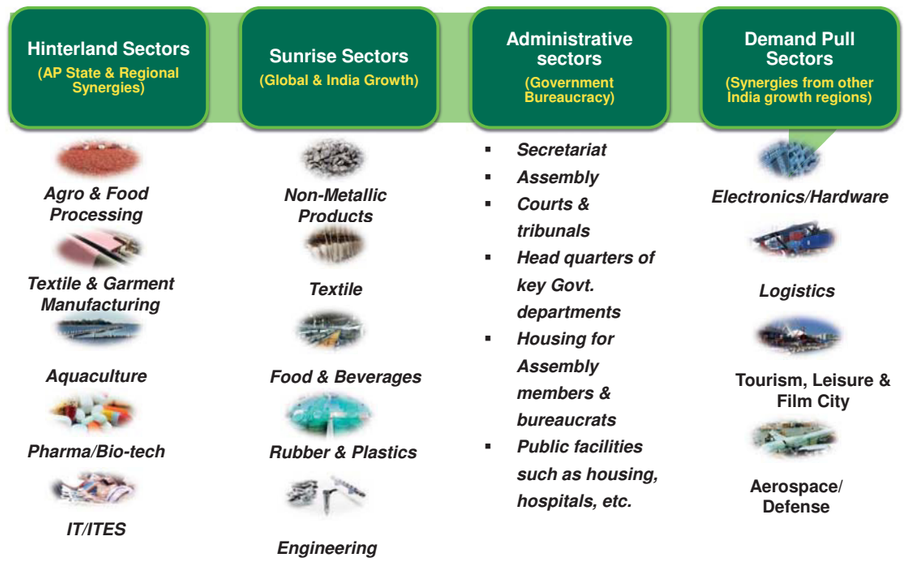


Fig.4.21 Potential Economic Drivers for Capital Region Source: Research

4.3 REGIONAL ECONOMIC ANALYSIS

4.3.1 REGIONAL ECONOMIC POSITIONING OF CAPITAL REGION

The Capital Region is located in proximity to some of the major economic nodes in the region such as Hyderabad, Chennai, Bengaluru, Visakhapatnam, Tirupati, etc. Further, these economic hubs are characterized by unique economic positioning that defines the key guiding principles of economic development in these regions.

Fig.4.20 highlights the economic positioning of these hubs and the advantages of the Capital Region vis-à-vis the other urban centers in the region that have the potential to define the economic positioning of the Capital Region going forward.

As highlighted in Fig.4.20, the key advantages of the capital region include its adequate availability of skilled workforce (viz. Engineering, F&B, IT/ITeS, Textile, etc.), rich agriculture production (viz. paddy, chilies, jowar, sugarcane, cotton, etc.), central location to major economic centers, availability of drinking water to cater to growing needs of urban agglomeration and excellent transportation network.

4.3.2 POSSIBLE FUTURE ECONOMIC DRIVERS FOR AP CAPITAL REGION

The key findings from the preceding modules have been analyzed to identify the potential future economic drivers for the capital region. While doing so, various factors such as hinterland synergies, domestic & export demand, upcoming industry opportunities and Govt. policy push, etc. have been analyzed in detail.

Based on preliminary assessment, the future economic drivers for the capital region could be broadly divided into 4 categories:

- **Hinterland Sectors** – This category comprises of sectors which have high hinterland synergies in terms of raw material availability, basic infrastructure, upstream/downstream network, etc.
- **Sunrise Sectors** – This category includes the industrial sectors exhibiting strong growth prospects at India as well as global level.
- **Administrative Sectors** – Development of capital region necessitates the development of administrative facilities for functioning of the Government thereby triggering the economic development of the region
- **Demand pull sectors** - This category comprises of sectors witnessing higher growth in the other regions of India, thereby offering opportunities for the region

4.4 REGIONAL ECONOMIC ANALYSIS

4.4.1 CRITICAL PARAMETERS FOR ECONOMIC PRIORITIZATION

The preliminary category of economic activities identified as part of the above module have been analyzed in detail in terms of understanding the various parameters such as industry output, key growth trends, employment generation potential, FDI, export potential, etc. to arrive at most promising industrial and economic uses for the capital region.

Fig.4.22 highlights the critical parameters analyzed to evaluate the high potential sectors that could prioritize the economic development in the region.

Further, to comprehend the industry dynamics and to evaluate the opportunity for the Capital Region, various modules of studies have been undertaken including:

- Analysis of economic data pertaining to various industrial segments
- Stakeholder meetings (industrial occupants, industrial associations, Govt. Authorities) to gauge inputs on the outlook for the sectors
- Opportunity assessment for industry at India, state and the region level through primary and secondary research

4.4.2 ANALYSIS OF INDUSTRIAL STATISTICAL

The economic data pertaining to the identified industrial/economic clusters has been analyzed to identify the high growth potential sectors for the capital region. This has been achieved through a weighted average rating of the sectors at a global, India and regional level using a prioritization matrix for the parameters listed above.

The key data sources that have been utilized to undertake this module are as highlighted in the Fig.4.23

4.4.3 PERCEPTION STUDY

As part of this module, meetings with key stakeholders have been undertaken to gauge their inputs on industry growth drivers, raw material availability, upstream/downstream network in region, Govt. policy push and the future outlook for the sector, etc., which are the critical parameters that drive the industrial development activity in a region.

Direct and telephonic survey conducted across Govt. Entities, manufacturing establishments, tourism operators, entertainment & Film city operator, Economic Service sector units, etc. to obtain qualitative feedback.

Over 40 interactions have already been undertaken and more meetings are currently being undertaken to obtain comprehensive feedback on the potential industrial and economic uses for the capital region.

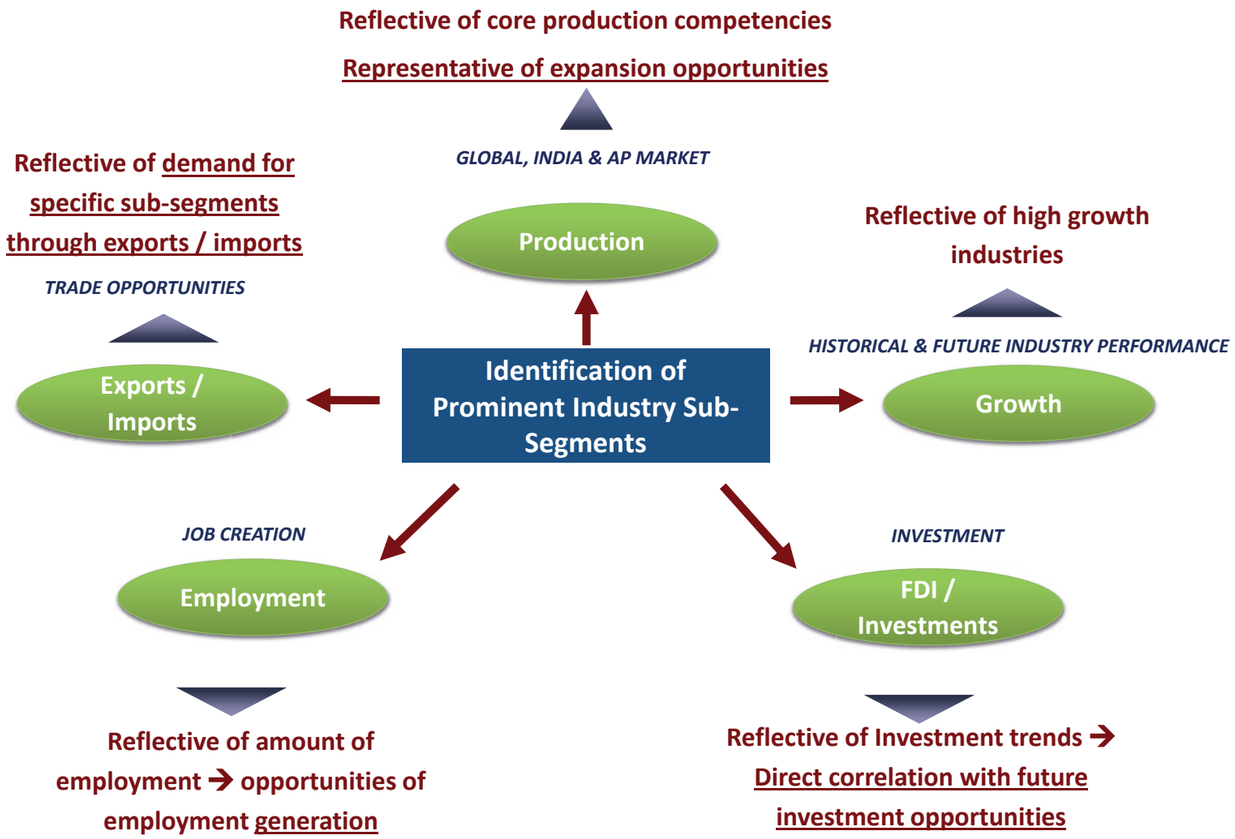


Fig.4.22 Critical parameter analysed to evaluate the economic prioritization

Data Sources	Publisher	Description
Global Industrial Database	United National Industrial Development Organization (UNIDO)	Value of Output, Exports, Imports, etc.
Industrial Database (India)	Annual Survey of Industries (ASI)	Value of Output, Investments, Employment, Number of Factories, etc.
Industrial Database (Andhra Pradesh)	Annual Survey of Industries (ASI)	Value of Output, Number of Factories, Number of Employees, etc.

Fig.4.23 Data Source

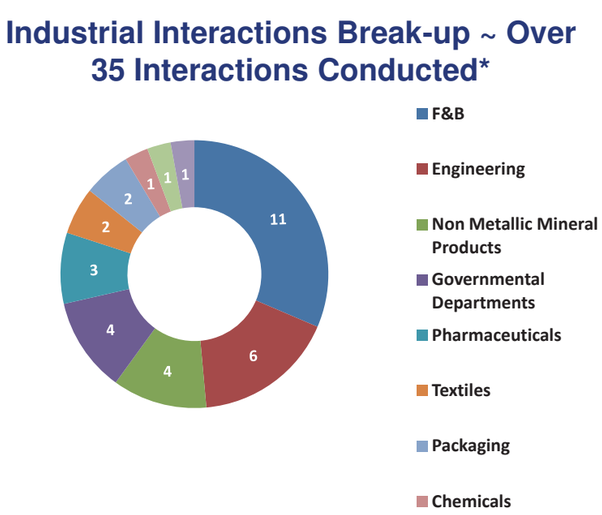


Fig.4.24 Industry interactions break up

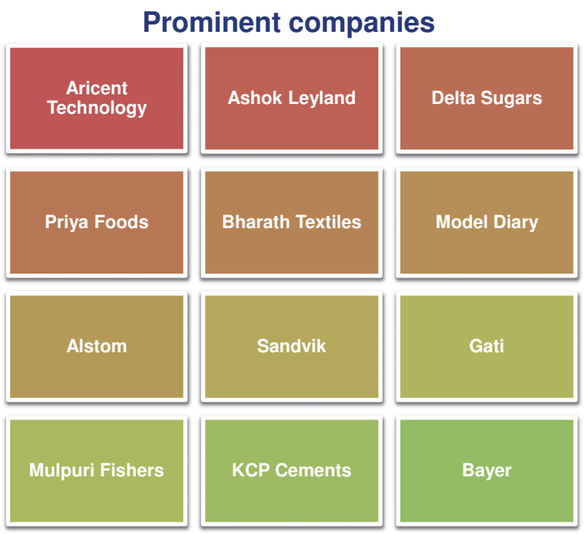


Fig.4.25 Sample list of interacted industries

The break-up of meetings undertaken across industrial clusters and some of the prominent entities met thus far are presented in Fig.4.24

4.4.4 OPPORTUNITY ASSESSMENT FOR IDENTIFIED ECONOMIC USES

A detailed analysis of identified industrial segments has been undertaken to understand the opportunity for the sector at a Capital Region level. The following sections highlight the key dynamics and outlook of these sectors for the region.

4.4.5 FOOD AND BEVERAGE SECTOR

India is a richly endowed agricultural nation. It has nearly a tenth of world's arable land and a fifth of word's irrigated land. India is the world's second largest producer of food next to China. The food processing industry is one of the largest industries in India and ranks fifth in terms of production, consumption and exports. As per the industry estimates, the sector has estimated market size of USD 40 billion in FY13 and is further expected to expand at a CAGR of 11 per cent by 2018. The industry contributed approximately 9.8 % to India's manufacturing GDP in 2013.

The F&B industry is characterized as one of the largest industries in the AP state by value of output and growth. Andhra Pradesh is endowed with a wide range of raw materials such as rice, sugarcane, jowar, mangoes, chilies, etc. to name a few. India's largest food park (Srini Food Park), spread across 147 acres is located in Chittor district. Over the years, the state is increasingly witnessing the interest from global conglomerates that are keen to invest and partner with the state to promote an integrated food processing eco-system in the state. Some of such key initiatives announced in the sector include: Walmart's MOU with Govt. to buy & market 100 agricultural products from Andhra Pradesh and PepsiCo's recent approval for establishing Mango Pulp extraction plants in Krishna, Chittor, East & West Godavari districts.

Dynamics of Capital Region – F&B

Guntur district is famous for Chilies which witnesses a huge demand from all over the world. The capital region is also well known for its rice, pulses and sugarcane production. The region is also famous for its mangoes exports grown in and Nuzivid town. However, the current F&B activity in the region is primarily concentrated in the upstream activities (viz. cultivation, harvesting, fermentation, etc.) with the limited value add production. This presents significant opportunities for the sector to expand into the downstream activities such as processing, freezing, packaging and marketing the products directly to retailers or end users.

GROWTH DRIVERS
• Rich agricultural production and distinct raw material base • Growing domestic & export demand • Growth in organized retail is expected to boost the F&B sector • AP Government has identified F&B as a thrust sector and & announced setting up of food parks in all districts
KEY CHALLENGES
• Highly unorganized and fragmented sector ~ dominated by small and micro enterprises • Currently, the value addition in the segment is limited ~ industry to acquire technology and train work force to be able to expand into the downstream activities

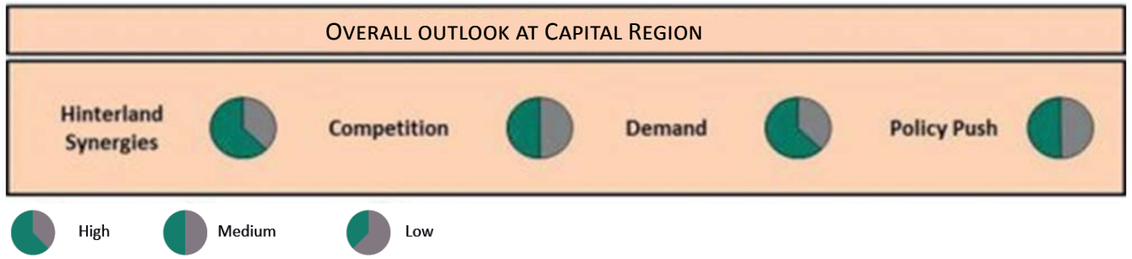


Fig.4.26 Opportunity Assessment for Capital Region – Food & Beverage

4.4.6 TEXTILE INDUSTRY

India is the one of the world's largest producers of textiles and garments. The key aspects that have transformed India into a key sourcing hub include abundant availability of raw materials such as cotton, wool, silk and jute as well as skilled workforce. India is the world's second largest exporter of textiles and garments. As per the industry estimates, the sector contributes about 14% to industrial production, 4% to the gross domestic product (GDP), and 27% to the country's foreign exchange inflows. The size of the Textile industry was estimated to be USD 89 billion in 2011 and is expected to reach USD 223 billion by 2021.

Dynamics of Capital Region - Textile

The region is characterized by significant production of cotton. However, the existing manufacturing activity is primarily engaged in basic activities such as spinning & weaving with negligible activity being witnessed in the value added production.

Andhra Pradesh is the 3rd largest producer of cotton in the country with over 5 Million bales and over 17 lakh acres of land being utilized for cotton production. 60% of the cotton production in the state is contributed by Guntur (Capital Region) and Prakasam districts while the remaining is contributed by Vizianagaram and East Godavari. The state has over 150 spinning mills present in the region, albeit, primarily involved in the basic midstream activities such as spinning and ginning. Some of the prominent Companies involved in the textile manufacturing activities in the state include NSL Textile, Gokaldas Exports, Loyal Textiles, etc.

GROWTH DRIVERS
• Growing urbanization, expansion of retail market, changing consumer lifestyle along with favorable Government initiatives are expected to have a positive impact on the growth of the industry • Availability of significant raw material and skilled workforce • Govt. policy push ~ setting up of Textile Clusters, 100% FDI, IPDS scheme, welfare schemes for weavers, etc.
KEY CHALLENGES
• Competition from existing textile hubs of India • Cheaper imported products will be a deterrent for domestic companies to be competitive

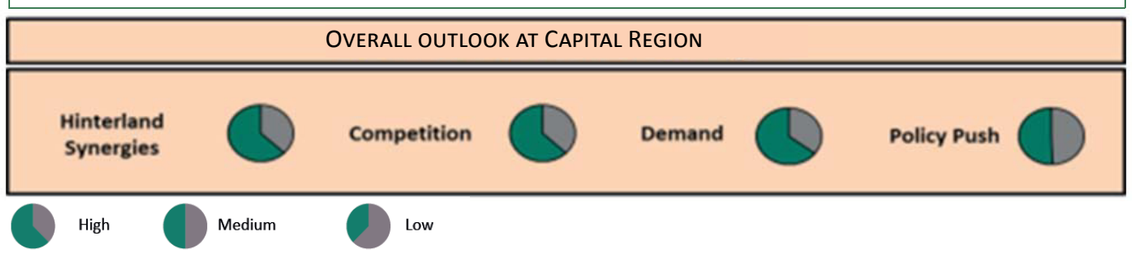


Fig.4.27 Opportunity Assessment for Capital Region – Textile

GROWTH DRIVERS
• Significant growth in construction activity owing to development of infrastructure, smart cities, etc. • Rich base of non-metallic minerals in the region • Potential to expand into the downstream manufacturing activities
KEY CHALLENGES
• Dearth of skilled workforce to enable the downstream expansion of the industry • Competition from neighboring states such as Telangana, Odisha which have a better ecosystem for the industry

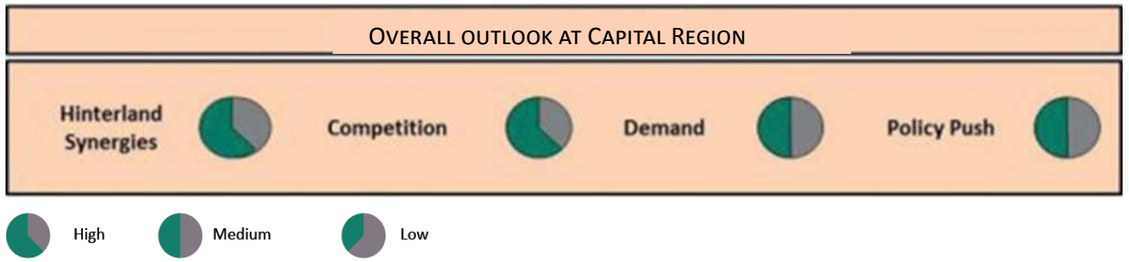


Fig.4.28 Opportunity Assessment for Capital Region – Non Metallic Minerals

GROWTH DRIVERS
• Rising income levels together with increasing propensity to spend & easy availability of credit • The region has abundant number of engineering and ITI colleges to support the manpower requirements of the industry which is one of the key driving factors for the sector • Proximity to major ports and established auto cluster in Chennai • AP Govt. policy push to attract major auto companies to set up manufacturing units in the state
KEY CHALLENGES
• Significant competition from the established hubs such as Chennai, Manesar, Pune, etc. • Lack of existing eco-system and skilled work force

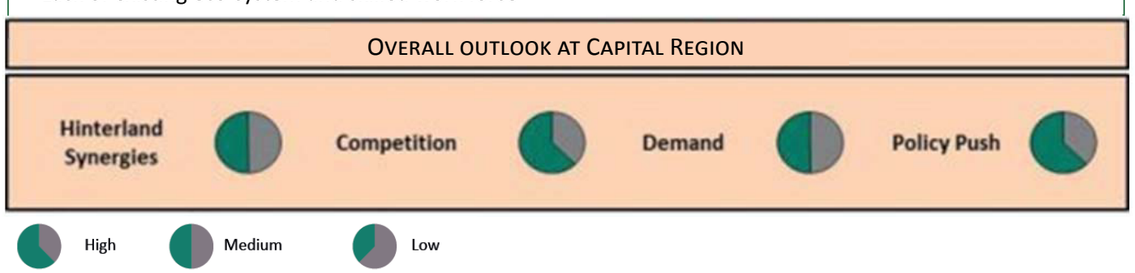


Fig.4.29 Opportunity Assessment for Capital Region – Auto and Auto Components

4.4.7 NON METALLIC MINERAL PRODUCTS

The non-metallic mineral products industry bears a direct correlation with infrastructure development through the provision of primary materials required to undertake building and construction activity. India is endowed with rich mineral deposits and produces 87 minerals including 4 fuel minerals, 10 metallic minerals, 47 non-metallic minerals, 3 atomic minerals and 23 minor minerals.

Andhra Pradesh state has rich mineral base including manganese, limestone, mica, steatite, copper, graphite etc. The state stands 2nd in the mica deposits and production in the country and contains 44% of the limestone reserves in the country.

Dynamics of Capital Region

The region has abundant availability non-metallic mineral deposits such as limestone, stowing sand, silica sand, granite, etc. Further, the Capital Region is currently characterized by the presence of cement manufacturing units, stone crushing units, RMC plants, etc., primarily supporting the construction/ building activity in urban areas such as Vijayawada and Guntur. However, the growing urbanization coupled with the thrust on the infrastructure development and construction activity in the Capital Region is expected to provide significant opportunities for the region to expand into the downstream activities of the sector.

4.4.8 AUTO AND AUTO COMPONENTS SECTOR

The automobile industry is one of India's major sectors; accounting for 22% of the country's manufacturing GDP. The Indian auto industry, comprising passenger cars, two-wheelers, three-wheelers and commercial vehicles, is the seventh-largest in the world. India has emerged as the economic powerhouse of growth over the last decade in the automotive sector. The key hubs for automotive manufacturing in India include Delhi-Gurgaon-Faridabad in the north, Mumbai-Pune-Nashik- Aurangabad in the west, Chennai-Bengaluru-Hosur in the south and Jamshedpur-Kolkata in the east. The automotive manufacturing industry in Andhra Pradesh is currently at an emerging stage and is expected to witness robust growth owing to the increasing demand in the region and due to its advantages such as availability of raw materials, good port infrastructure for imports and its proximity to the existing automotive Hub in Chennai.

Dynamics of Capital Region

The automotive industrial activity in the Capital Region is currently characterized by an operational auto component cluster in Vijayawada. It was one of the first in the country to be developed exclusively for the automobile servicing trade. In addition to the majority of the servicing units, the Vijayawada autonagar cluster also has few small-medium scale manufacturing units.

However the cluster has failed to develop into an integrated component manufacturing cluster owing to highly heterogeneous nature of products and services, use of outdated technology, inadequate testing facilities and small scale of operations etc.

4.4.9 RUBBER AND PLASTIC INDUSTRY

The rubber and plastics industry is the 12th largest industry in terms of value of output in the country. India is the world's largest producer and the third largest consumer of natural rubber. India's Rubber production varies between 6 and 7 lakh tonnes annually with a turnover of INR 12,000 million. Most of the rubber is consumed by the tyre industry which accounts for almost 52% of the total demand. Indian plastics sector has been estimated to be at a market size of approx. USD 25 billion in 2012 and expected to reach USD 30 billion by year 2015. India is the third largest consumer of plastic products (outputs), behind China and the US. The sector is currently a highly fragmented (approx. 75% unorganized) and is characterized by high pollution and low profitability margins and high level of competition.

The rubber and plastic industry in Andhra Pradesh is characterized by a highly fragmented industry structure with a large number of small-medium scale players operating in the segment with wide range of products, primarily supporting the overall manufacturing sector.

Dynamics of Capital Region

The region has limited manufacturing activity in the rubber and plastics industry and the existing activity in the region is dominated by micro and small enterprises. However, the development of PCPIR (Petroleum, Chemical and Petrochemical Investment Region) region in proximity to Capital Region is likely to have a positive effect on the sector in the region and would facilitate increased raw material availability for the sector. The sector would also benefit from growth in end-user industries like food processing, textiles, pharmaceutical, etc., which are identified as thrust sectors in Andhra Pradesh.

GROWTH DRIVERS
• Anticipated growth of manufacturing industry in the region • Significant growth of population in the region over the next 10-15 years ~ to trigger the consumer demand • PCPIR development in proximity to Capital Region ~ ensures availability of raw material
KEY CHALLENGES
• High polluting nature of the industry ~ plastics banned for consumer use • Highly unorganized and fragmented sector • Fluctuations in raw material cost would impact profitability

Overall outlook at Capital Region

Fig.4.30 Opportunity Assessment for Capital Region – Rubber and Plastics Industry

GROWTH DRIVERS
• Increasing per capita income together with changing lifestyles resulting in higher incidence of lifestyle-related diseases • Establishment of PCPIR region in Andhra Pradesh ~ characterizes the raw material availability • Increasing government expenditure on healthcare through various schemes like (CGHS), National Programme for Healthcare of the Elderly (NPHCE), Rashtriya Arogya Nidhi (RAN) and Janani Suraksha Yojana (JSY)
KEY CHALLENGES
• High polluting nature of the industry • Hurdles in environmental & regulatory approvals for new clearances • Absence of eco-system in the region

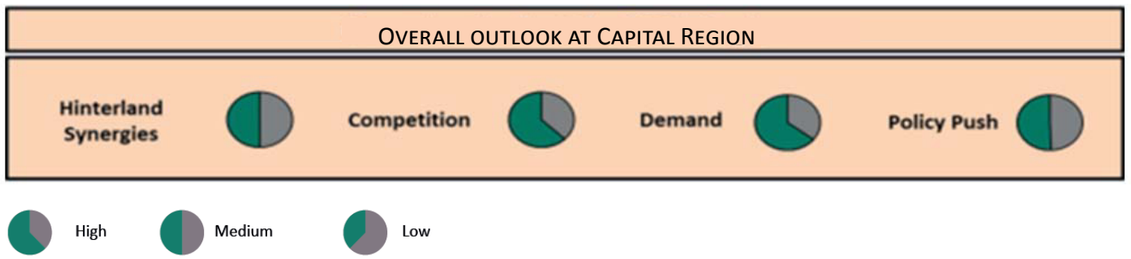


Fig.4.31 Opportunity Assessment for Capital Region – Pharmaceutical Industry

4.4.10 PHARMACEUTICAL INDUSTRY

The Indian pharmaceuticals sector is estimated to have a market size of approx. USD 12 billion as of FY13, with a compounded annual growth rate of approx. 10% during 2005 -13. The Indian pharmaceuticals market ranks third by volume and 14th by value globally; and contributes to approx. 10% of the total global production. The sector in India is expected to grow at a CAGR of 14% over the years 2014-18. Large population, increasing income and healthcare expenditure levels in the country would augment growth of the domestic market. Exports from India constitute approx. 40% of the total turnover of the sector in the country. The country has witnessed significant FDI and other outsourced activities in the sector, illustrating the increasing demand for generics from export markets. Further, there is global opportunity for increasing generics market due to patent expiration of major high-value drugs. The Government of India initiated policies and tax breaks on R&D which would further enhance the growth of the Sector.

The pharmaceutical industry in Andhra Pradesh is a nascent industry in terms of contribution to the overall manufacturing industry in the state. Jawaharlal Nehru Pharma City located in Visakhapatnam is the only existing large scale Pharmaceutical cluster in the state which is designed to accommodate 120 companies. However, the large coast line, major ports and PCPIR hub, etc. are expected to provide the much needed fillip to the growth of the industry.

Dynamics of Capital Region

The region has seen limited manufacturing activity in the pharmaceutical industry and the existing activity is primarily characterized by sporadic activity in Kondapalli industrial estate

4.4.11 ELECTRONICS INDUSTRY

Indian electronics industry production accounts for only 1-1.5% of the global electronics hardware production of USD 1.75 trillion. However, the demand in the Indian market is rapidly growing and investments are flowing in to augment domestic manufacturing capacity. As per the estimates of Department of Electronics & Information Technology (DEITY), Ministry of Communications & Information Technology, GOI, the demand in the Indian electronics market is expected to touch USD 400 bn in FY20 from the market size of USD 69.6 bn in FY12.

The electronics industry in Andhra Pradesh has witnessed limited production levels and is primarily characterized by small scale manufacturing units. Sri City, in Chittoor district is one of the prominent centers for electronic manufacturing in the state and comprises of a few SME electronic manufacturing units. Further, the promoters of the park in association with ELCINA (Electronic Industries Association of India) have already notified 100 acres under EMC scheme.

Dynamics of Capital Region

The region has witnessed limited activity in the electronic industry and is currently characterized small scale units such as Incap capacitors. The industry is highly fragmented and unorganized in nature. However, the industry in the state is poised for higher growth given the state's new attractive electronics policy, increasing demand and infrastructure subsidy for the manufacturers from the central Government

GROWTH DRIVERS
• Rising income levels together with increasing propensity to spend, easy availability of credit • Increasing digitization and larger investments by the government is driving the demand for the electronics sector in India • Identified as the thrust sector by the central and state government
KEY CHALLENGES
• Over dependence on imports- Currently 40-45% of domestic demand is serviced by imports from countries like china, Taiwan etc. • Inadequate infrastructure and lack of ecosystem- limited infrastructure and poor supply chain management are restricting the product reach

Overall outlook at Capital Region

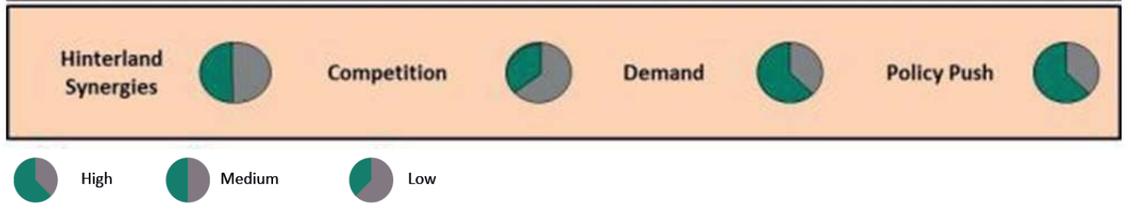


Fig.4.32 Opportunity Assessment for Capital Region – Electronics Industry

GROWTH DRIVERS
• Setting up of PCPIR in Andhra Pradesh • Emerging engineering activity, growing infrastructure investments and growth in automotive sector to boost the overall activity in the subject region. • Good transportation network helps in easy procurement of raw materials to the industries
KEY CHALLENGES
• Lack of infrastructural facilities will be a deterrent to attract new investments • Limited scope for the fabrication activities as there is negligible steel production in proximity to the subject region • Competition from neighboring clusters • Falling commodity prices globally

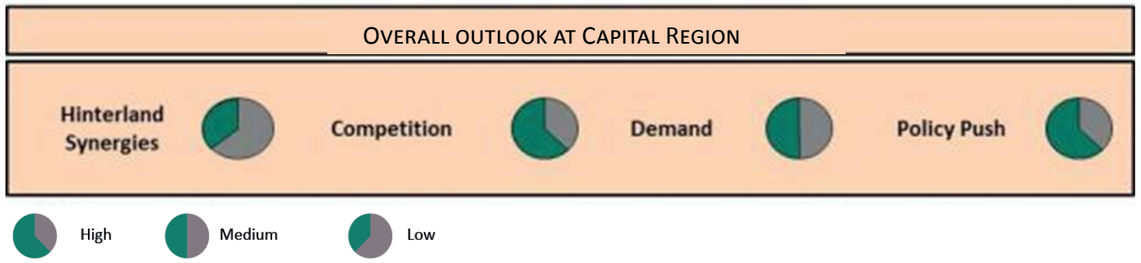


Fig.4.33 Opportunity Assessment for Capital Region – Basic and Fabricated Metal Industry

4.4.12 BASIC AND FABRICATED METAL INDUSTRY

The metal sector in India is almost a century old, and exhibits significant economic importance due to rising demand by sectors such as infrastructure, real estate and automobiles. India ranks 4th globally in terms of iron ore production and is the largest producer of soft iron in the world. It is also the 4th largest steel producing country in the world with a production of 81 million tons. The market size of the industry is expected to grow from USD 58 Billion in 2011 to approx. USD 95 Billion in 2016.

The Industry in Andhra Pradesh is currently at a nascent stage of development with negligible production activity across the value chain. The industry in Andhra Pradesh is fragmented in nature owing to the dominance by small & unorganized players which manufacture low value added products. However availability of raw materials and overall anticipated growth of the economy are expected to drive the demand for the industry.

Dynamics of Capital Region

The region has witnessed limited activity in the metal industry. It is characterized by sporadic activity in Kondapalli and Autonagar industrial estates. The region is dominated by micro and small enterprises.

4.4.13 TOURISM

Andhra Pradesh is characterized as the top 10 states of the country in terms of domestic tourist inflow, accounting to 98 million tourists in 2013. The state continued to witness increase in domestic tourist arrivals in the last few years and is regarded as the domicile for all types of tourism such as pilgrimage tourism, heritage tourism, adventure tourism, cultural tourism, beach tourism, etc.

Dynamics of Capital Region

The popular tourist places in Vijayawada are Undavalli Caves, Mogalarajapuram Caves, Prakasam Barrage, Bhavani Island, Victoria Museum, Kondapalli Fort, Gandhi Hill, etc. Located between Krishna & Godavari delta, Kolleru Lake is characterized as the largest fresh water lake in India. The region has also several Buddhist settlements such as Amaravathi.

The districts with the highest tourist flow in the state is highlighted in Table 4.1.

Table 4.1 District Tourist Flow_2013

Name of District	Domestic Tourist Inflow (million) – 2013
Chittoor	36.23
East Godavari	11.25
Krishna	10.41
Guntur	2.48
Remaining Districts	37.63
Total	98

GROWTH DRIVERS
• New capital formation will put the region on the national/international map, offering its opportunity to harness the potential of the region • The scenic locations of Capital Region viz. Bhavani islands, Undavalli caves, Amaravathi Buddhist template, etc. • Increasing middle class disposable income and expenditure towards tourism & leisure • Tourism sector is identified as thrust sectors by state and central governments.
KEY CHALLENGES
• Terrorist attacks, political unrest, crime against women regarded as the major dampeners among tourists. • Regulatory issues in terms of Visa arrivals for more countries, delay in tourism related projects, etc. • Status of the industry as real estate and limited funding avenues from funding institutions

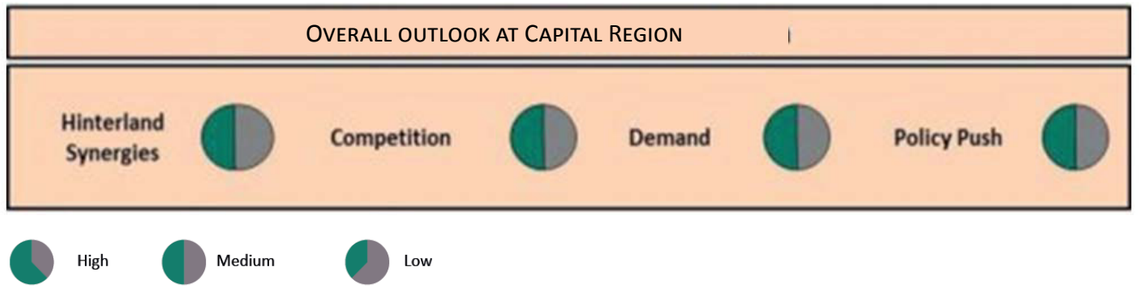


Fig.4.34 Opportunity Assessment for Capital Region – Tourism

GROWTH DRIVERS
• Growth in civil aviation & military spending • Low man-hour cost base in India • Increase in FDI limit to 49% & offset policy
KEY CHALLENGES
• Lack of existing aerospace eco – system in the state and the region • Current lack of aerospace grade sub-assembly and raw material contributes to the lack of eco system for the industry • Stiff competition from other Aerospace parks in India viz. Hyderabad & Bengaluru

Fig.4.35 Opportunity Assessment for Capital Region – Aerospace Sector

4.4.14 AEROSPACE SECTOR

The Indian aerospace industry has historically been dominated by large Public Sector Undertakings (PSUs). The aerospace market in India primarily comprises the commercial or civilian and the military sectors. In addition to this, space research and satellites forms another cluster completely administered by the Government of India. In the present scenario defense related manufacturers in India are limited and clustered around Bangalore, Hyderabad and Nagpur. The residual state of Andhra Pradesh has negligible presence of aerospace and allied industries, although the state is home to one of the large rocket launching stations in the country viz. SHAR.

Dynamics of Capital Region

The Capital Region currently comprises negligible manufacturing activity in the Aerospace segment. However, various Government initiatives such as increase in FDI cap to 49%, Defense offset policy mandating 30% local sourcing, etc. are expected to drive the growth of the industry over the long term horizon.

4.4.15 IT/ITeS INDUSTRY

The Indian IT/ITeS industry has been one of the great success stories of modern India and has helped the country transform from an agriculture based economy to knowledge based economy. The contribution of the sector to India's GDP has increased from a paltry 1.2% in 1998 to an impressive 8.1% in 2014. The industry turnover stood at USD 118 Billion in FY-14 and is expected to double by the year 2020.

IT/ITeS sector in Andhra Pradesh is currently emerging with cities such as Vishakhapatnam, Tirupati witnessing increased investments by the private companies. The total revenues from these cities were INR 16,280 million for the year 2012-2013, which contributed 0.4% to the national revenues. Further, the pro-active steps taken by the state Government in terms of announcing an ambitious IT policy outlining various incentives and benefits to companies, upgradation of airports and other infrastructure developments, and emergence of cities such as Visakhapatnam as the smart cities to catapult the demand for the sector and attract major investments.

Dynamics of Capital Region

The region is characterized by negligible activity in the IT/ITeS sector. Vijayawada city has an operational IT SEZ developed jointly by APIIC and L&T near Gannavaram airport. The revenue from Vijayawada was around INR 1,150 million during years 2012-13. However, the sector is expected to witness gradual rise over the medium to long term with a number of sustained initiatives currently being undertaken by the state government.

GROWTH DRIVERS
• Adequate availability of skilled manpower • Physical infrastructure ~ excellent connectivity via road, rail and air to key locations in India viz. Hyderabad, Chennai, Vishakhapatnam and Bengaluru • Availability of social and support infrastructure including schools, hospitals, shopping centers, entertainment avenues etc. in the urban centers of Vijayawada and Guntur
KEY CHALLENGES
• Significant competition from established IT hubs like Hyderabad, Chennai, Bangalore • High land prices can be a deterrent for setting up new IT units

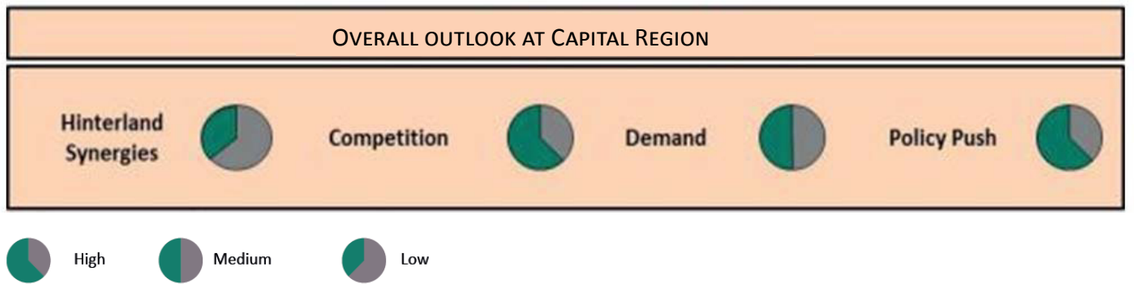


Fig.4.36 Opportunity Assessment for Capital Region – IT/ITeS Industry

GROWTH DRIVERS
• Proximity to natural resources resulting in lower logistics cost • MPEDA to invest INR 46,250 million in the state over the next 5 years on infrastructure (viz. cold chains, etc.) • Govt. incentives such as diesel subsidies for 1,500 boats, insurance for 6.5 lakh fishermen, etc.
KEY CHALLENGES
• Stiff competition from other states such as Orissa, West Bengal, Tamil Nadu, etc. • Drastic climate changes affecting quality of produce • Sector primarily unorganized with small and medium sized producers

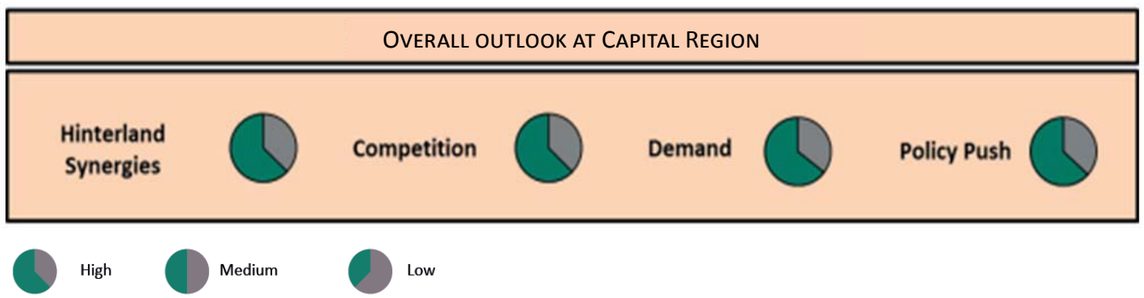


Fig.4.37 Opportunity Assessment for Capital Region – Aquaculture Industry

4.4.16 AQUACULTURE INDUSTRY

India is the second largest country in Aquaculture production in the world. It contributes nearly 5% of the world's total fish production and approx. 8 - 10% of total aquaculture production. Seafood exports contribute approx. 3.32% of the country's total exports employing 15 million people. India's long coastline of 7,500 km is the key to the aquaculture production. The top 5 leading fish/aquaculture producer states in India are Andhra Pradesh, Karnataka, West Bengal, Tamil Nadu and Gujarat. The major importers of India's seafood are Japan, EU, USA, Australia and Middle East.

Andhra Pradesh is the largest producer of fish in India with a production of 17.68 tonnes of fish annually. It contributes to 2/3rd of marine exports from India. Geographical advantages such as 972 kilometer long coastline (spanning across 7 districts), 4,120 km of riverine area, 60 reservoirs, 0.5 million ha of brackish waters, etc. are enabling the quality and reliable production in the state. The state has witnessed conversion of over 1 lakh acres of agricultural land converted into aquaculture sites during the last.

DYNAMICS OF CAPITAL REGION

The region is characterized by significant activity in aquaculture industry. It is geographically endowed as it is located in close proximity to lakes and rivers viz. Krishna, Kolleru lake, Pulicat lake, etc. Favorable climatic conditions are the other major reason for quality of aquaculture produce in the region. The key growth drivers and challenges for the industry are as highlighted in the exhibit beside:

4.4.17 LOGISTICS INDUSTRY

The demand for logistics services in India has largely been fuelled by the growth of the manufacturing sector in India and the growth of industry can be regarded as a proxy to the overall economic growth in India. As per the industry estimates, the Indian logistics industry was valued at an estimated USD 130 billion in 2012-13. It was estimated to have grown at a CAGR of over 16 per cent over the last five years. The transport infrastructure in the state is well established. It is well connected by all modes of transport viz. air, road, rail & sea. Further, the state has numerous cold chains and warehouses owned by private operators & the warehousing corporations that cater to the existing agricultural/ food processing industry. However, the Government proposals to set up various logistics clusters in the state are expected to trigger the development of organized logistics clusters in the state.

Dynamics of Capital Region

The logistics activity in the Capital Region is characterized by cold chains and small scale unorganized warehouses supporting the agricultural production in the region. The region currently lacks any large scale warehousing development. However, the region possesses excellent connectivity to regional economic hubs via road, rail and air. This well-established transportation network coupled with the anticipated growth in manufacturing activities in sectors such as F&B, Textiles, etc. are expected to drive the growth of the sector over the medium term horizon.

GROWTH DRIVERS
• Introduction of GST is likely to bring in investments by large players in warehousing space • Increase in FDI limit to 100% along with 10 year Tax holiday in Port sector can enable the state and the region to enhance its attractiveness • Envisaged growth in the overall manufacturing & organized retail business • Development of inland waterways on Krishna river and the other creeks in the region would enable the positioning of the region as multi-model logistics hub
KEY CHALLENGES
• Lower economies of scale due to high fragmentation of industry • Infrastructural bottlenecks • Significant competition from already established cities such as Vizag, Chennai. etc.

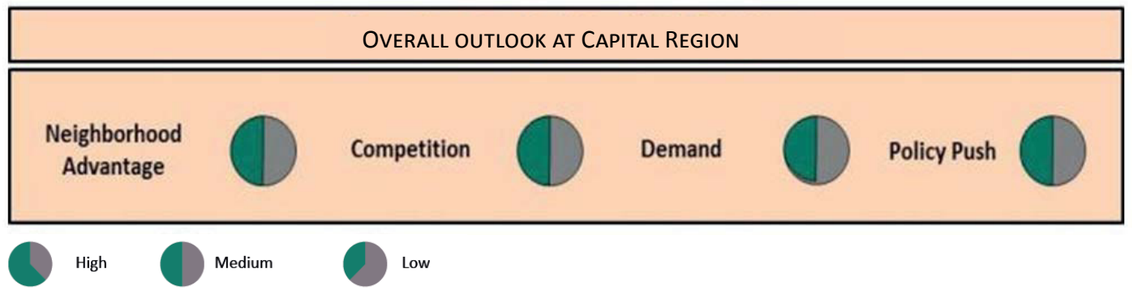


Fig.4.38 Opportunity Assessment for Capital Region – Logistics Industry

Industry Segment	Opportunity for Capital Region		Key Growth Drivers
	Short-Medium Term	Medium to Long Term	
Food & beverage products (Agro Processing)	↑	↑	Largest sector in the state (27% share in the overall output – 2008-11)
Aquaculture	↑	↑	Existing eco-system, favorable climate conditions & fresh water sources
Textile Industry	↑	↑	Abundant availability of raw materials – Substantial export demand
Non-Metallic Mineral Products	↑	↑	Downstream opportunities in the short-medium term due to raw material availability and growth in construction industry
Auto & Auto Components	↔	↑	Government thrust and anticipated demand growth in the region
Rubber & Plastics	↔	↑	Strong inter – industry linkages; primarily as a support industry
Pharmaceuticals	↔	↑	Hinterland synergies; bordering a large pharma hub; Establishment of PCPIR region to propel growth
Electronics Industry	↔	↑	Government thrust, presence of adequate power and manpower
Basic & Fabricate Metal Industry	↔	↑	Downstream opportunities in the short-medium term due to raw material availability
Tourism	↑	↑	Govt. thrust & places of cultural and religious importance
Aerospace / Defense	↔	↔	Emphasis on the industry by both Central & State govt.
Logistics	↔	↑	Direct synergies with the overall industrial activity in the region
IT / ITeS	↔	↑	Presence of skilled manpower, Govt. thrust

Fig.4.39 Industry Opportunity Matrix

4.4.18 INDUSTRY OPPORTUNITY MATRIX – CAPITAL REGION

The findings from the above modules viz. industrial statistical assessment, opportunity assessment and the stakeholder interactions have been analyzed in detail to arrive at the outlook for the identified industrial/ economic uses that have the potential to trigger the economic development within the Capital Region over the short-medium term and long term.

4.5 BENCHMARKING OF CAPITAL CITIES

Benchmarking has been undertaken of select prominent state capitals which have evolved as economic powerhouses in the country. The objective of the benchmarking exercise is to understand the growth trajectory of these cities, key growth drivers and the consequent impact on population and the expansion of the metropolitan region/urban agglomeration. At this stage of the study, the cities chosen for the purpose of benchmarking include Hyderabad & Bangalore.

4.5.1 HYDERABAD URBAN AGGLOMERATION

Hyderabad Metropolitan Region, with an area of 7,257 sq. km is the sixth largest urban agglomeration in India. The city has established itself as an important hub for knowledge based sectors (viz. IT / ITeS and bio-tech) and high-value add manufacturing sectors (viz. pharma, aerospace etc.). The growth of the city has been aided by excellent physical infrastructure initiatives such as the PVNR Elevated Expressway, Outer Ring Road, MMTS, and the under construction Metro Rail

Evolution of the city

The economy of the city has evolved over time with the setting up of Industrial zones in 1930's to emergence of Pharmaceutical sector in the 1970's. Late 1990's saw emergence of IT sector with establishment of Cyber Towers in 1998, which was considered to be the trigger point that catapulted the economic growth of the city to the next level and led to significant urbanization. The impact of the city has spread to parts of neighboring districts of Ranga Reddy, Medak, Nalgonda & Mahabubnagar.

Fig.4.41 highlights the growth trajectory of the Hyderabad over the last 10-15 ye ars:

Economic Positioning

The economic positioning of Hyderabad city is primarily defined by superior basic and industrial infrastructure as well as the established eco-system for knowledge based sectors such as IT/ ITeS, Bio-tech and Pharmaceutical.

Fig.4.42 highlights the economic positioning of the Hyderabad city and the pillars on which the development of the city rests:

Cluster based Development

The primary growth drivers for economic development and the key economic clusters in the city have been analyzed to understand the pattern of economic development and Clusterization techniques adopted in planning the region.

Fig.4.43 highlighted alongside depicts the key economic clusters and their geographical spread around the Hyderabad city.

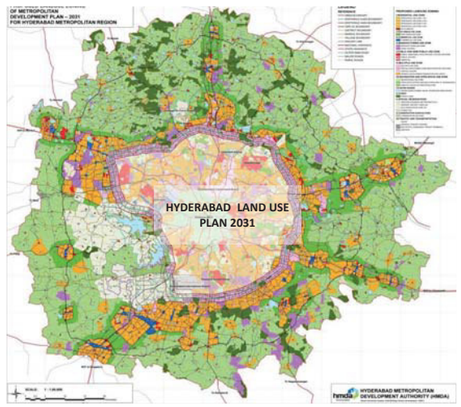


Fig.4.40 Hyderabad Urban Agglomeration

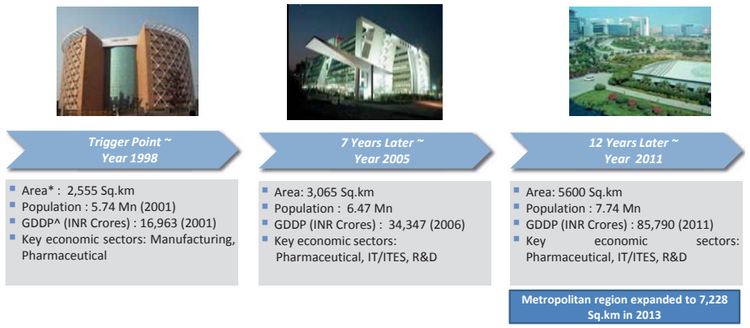


Fig.4.42 Hyderabad Evolution

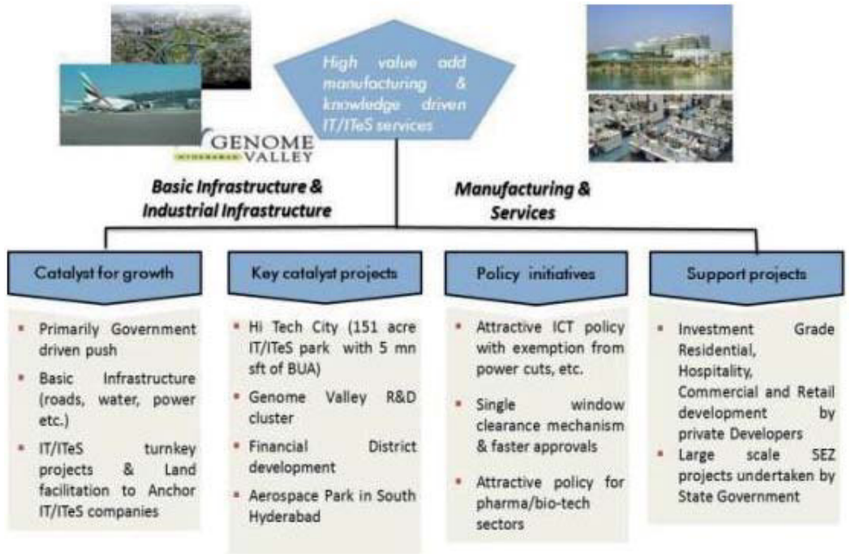


Fig.4.41 Hyderabad Economic Positioning

Fig.4.43 Cluster Based development

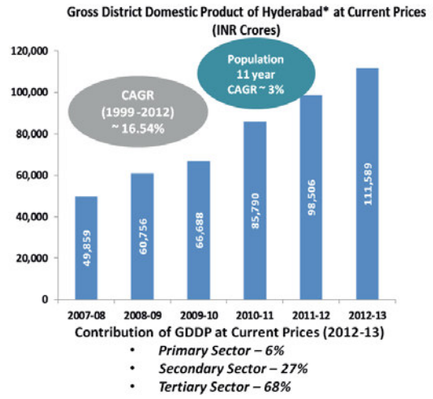


Fig.4.46 Economic Positioning of Bengaluru

Cluster	Industry	Prominent companies
Cluster 1	Services Cluster	Microsoft, Wipro, Accenture, Google, Infosys, TCS, IBM, Cognizant
Cluster 2	Pharma Cluster	Aurobindo Pharma, Dr. Reddy's Laboratories, Neuland Pharma, Gland Pharma
Cluster 3	Genome Valley	Dupont, Shanta Biotech, Biological-E, Bharat Biotech, Uni Sankyo, Lonza, Vimta Labs
Cluster 4	Aerospace/Defence/ Electronics	TAS, Lockheed Martin, Sikorsky, Astra Microwave, HCL, Tata Communications

Fig.4.44 Industry Clusters

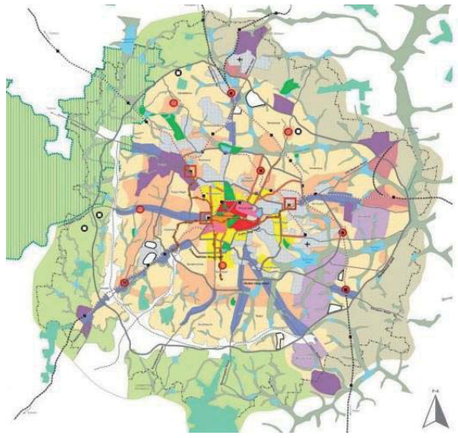


Fig.4.45 Hyderabad Economy

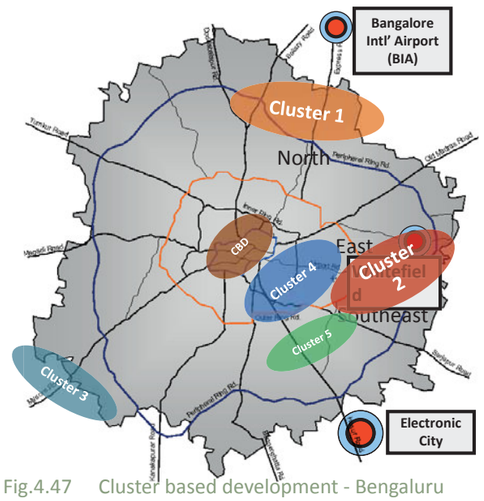


Fig.4.47 Cluster based development - Bengaluru

Fig.4.45 besides highlights various clusters, prevailing industrial activity and the key companies driving growth in these clusters:

Hyderabad Economy

The GDP of Hyderabad urban agglomeration has grown at a CGAR of 16% over the last 10 years. The growth in the GDP is primarily constituted by the tertiary sector dominated by IT/ITeS industry.

The population in the urban agglomeration has also grown at a CAGR of 3% over the last 10 year time horizon.

4.5.2 BENGALURU URBAN AGGLOMERATION

Bengaluru is the fifth largest urban agglomeration in India with a covered area of approx. 8,000 sq km. It is nicknamed 'Silicon Valley of India', because of its role as the nation's leading IT exporter. Bangalore is also known as the intellectual capital of India, due to the presence of prominent educational institutions such as IISC, IIM, NLSIU. The growth of the city has been supported by various infrastructure initiatives such as the Outer Ring Road, Peripheral Ring Road, Airport Expressway and Metro projects.

Evolution of the City

The seeds of growth of Bengaluru were laid by the Central government investments into the public sector industries such as BEL, HAL, ISRO, HMT. The roots of IT revolution in the country were laid in the late 1970's with the establishment of Electronics City by the Karnataka Government. The trigger points that paved the way for the development of the city can be traced to the setting up of STPI in 1991 and the development of Export promotion industrial park (EPIP) in Whitefield region during the period 1994-96. The turn of the millennium witnessed the new age IT companies entering into the city making it the hub for many IT/ITeS companies in India.

Fig.4.49 highlights the growth trajectory of the Bengaluru agglomeration over the last 15 - 20 years:

Economic Positioning

The economic positioning of Bengaluru city is primarily defined by the creation of industrial investment regions and significant investments in the education infrastructure and basic infrastructure. Fig.4.50 highlights the economic positioning of the Bengaluru city and the pillars on which the development of the city rests:

Cluster Based Development

The primary growth drivers for economic development and the key economic clusters in the city have been analyzed to understand the pattern of economic development and Clusterization techniques adopted in planning the region.

Fig.4.47 highlighted alongside depict the key economic clusters and their geographical spread around the Bengaluru city.

Fig.4.51 besides highlights various clusters, prevailing industrial activity and the key companies driving growth in these clusters:

Bengaluru Economy

The GDP of Bengaluru urban agglomeration has witnessed a CGAR growth rate of 17% over the last 12 years. The growth in the GDP is primarily constituted by the tertiary sector, which is dominated by IT/ITeS and services industry.

The population in the urban agglomeration has also grown by 3% CAGR over the last 10-12 year time horizon.

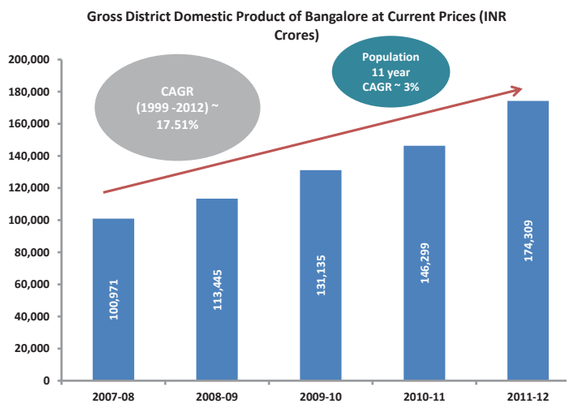


Fig.4.48 Bengaluru Economy

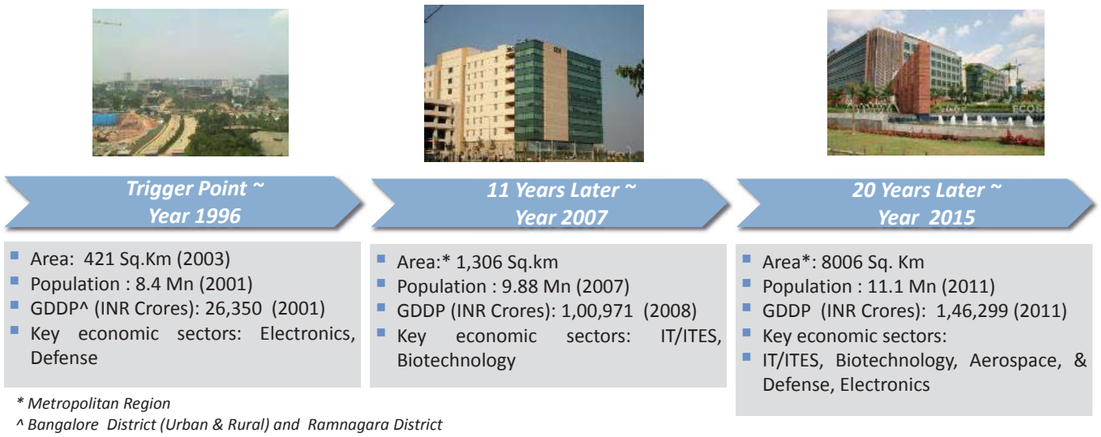


Fig.4.49 Bengaluru Evolution

Cluster	Industry	Prominent companies
Cluster 1	Hardware Park, Aerospace, IT/ ITES	Wipro Actuators, Amada, Shell Global Research Center, IBM, Nokia Siemens, Alcatel Lucent, Tyco Electronics
Cluster 2	IT/ITES	Wipro, Hical Technologies, Cisco, Accenture, Honeywell
Cluster 3	Bidadi	Industrial Parks promoted by KIADB~ Toyota
Cluster 4	Defence & Aerospace	HAL, NAL, ISRO
Cluster 5	Electronic City	Infosys, BHEL, Siemens, 3M, GE, Tech Mahindra, Biocon

Fig.4.51 Industry Clusters

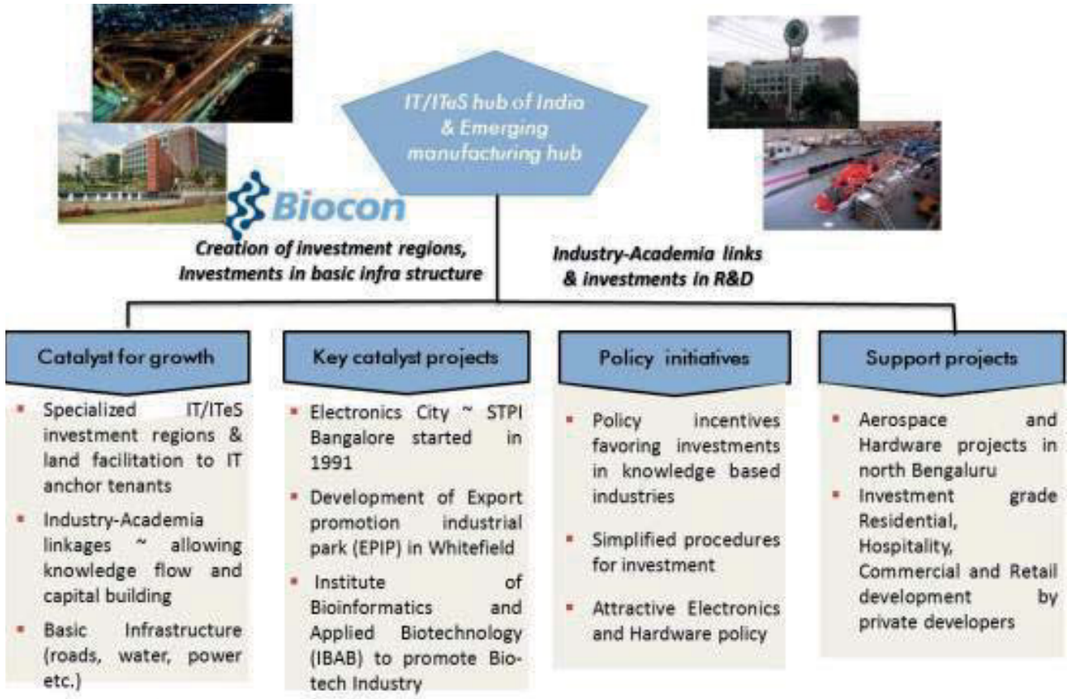


Fig.4.50 Bengaluru Economic Positioning