

Development of Industrial Park in VADA, Bellary District

FEASIBILITY REPORT

DECEMBER 2009

Submitted by

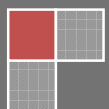


Infrastructure Development
Corporation (Karnataka) Limited
#39, Infra House,
5th Cross, 8th Main,
RMV Extn, Sadashiv Nagar,
Bangalore- 560 080

Submitted to



Infrastructure Development
Department (IDD)
Government of Karnataka
Vikasa Soudha
Bangalore-560 001



CONTENTS

1. INTRODUCTION	6
1.1. BACKGROUND.....	6
1.1.1. About Bellary.....	6
1.1.2. About VADA.....	8
1.2. NEED FOR THE STUDY	9
1.3. DRIVERS FOR INDUSTRIAL DEVELOPMENT IN VADA REGION	9
1.4. OBJECTIVE OF THE STUDY	10
1.5. APPROACH	11
1.5.1. Infrastructure Assessment.....	11
1.5.2. Implementation framework	12
1.5.3. Review of VADA framework	12
1.6. ACTION PLAN	12
1.6.1. Site Inspection	13
1.6.2. Demand Assessment	13
1.6.3. Financial analysis	13
1.6.4. Implementation structure	14
1.6.5. Legal Framework.....	14
2. CASE STUDIES	16
2.1. GUDC (GUJARAT URBAN DEVELOPMENT CORPORATION) TOWNSHIP	16
2.1.1. Master plan of Ecopolis - GUDC	16
2.1.2. Infrastructure	17
2.1.3. Implementation structure	18
2.1.4. Revenue Model.....	19
2.2. HAZIRA INDUSTRIAL PARK	20
2.2.1. Implementation Structure	22
2.2.2. Revenue Model.....	22
2.2.3. Infrastructure	23
2.3. NRDA (NAYA RAIPUR DEVELOPMENT AUTHORITY) - DEVELOPMENT OF NAYA RAIPUR, CHATTISGARH.....	24

3.	SOCIO-ECONOMIC PROFILE OF VADA AREA	30
3.1.	DEMOGRAPHIC CHARACTERISTICS	30
3.2.	POPULATION PROJECTIONS	30
3.3.	TOPOGRAPHY	31
4.	INVENTORY OF INFRASTRUCTURE.....	33
4.1.	NEED FOR INVENTORISATION OF INFRASTRUCTURE.....	33
4.1.1.	<i>Movement of iron ore by road and rail</i>	<i>34</i>
4.2.	TRAFFIC ASSESSMENT	35
4.3.	EXISTING INFRASTRUCTURE IN VADA	37
4.4.	GAP IN EXISTING INFRASTRUCTURE	39
4.5.	PROPOSED INFRASTRUCTURE IN VADA	40
4.5.1.	<i>Proposed Land use plan.....</i>	<i>40</i>
4.5.2.	<i>Proposed Projects (Roads).....</i>	<i>42</i>
4.5.3.	<i>Proposed Projects (Rail)</i>	<i>42</i>
4.5.4.	<i>Proposed Projects (Others).....</i>	<i>43</i>
5.	ASSESSMENT OF FUNDING REQUIREMENTS	46
5.1.	INVESTMENT REQUIREMENTS FOR VADA	46
5.2.	BASIS FOR ESTIMATION OF INVESTMENT	47
5.3.	FUNDING OPTIONS FOR CORE INFRASTRUCTURE DEVELOPMENT:	49
5.4.	FUNDING SOURCES FOR GOVERNMENT AGENCIES.....	49
5.5.	FUNDING SOURCES FOR THE PROJECT	50
5.6.	SOURCE OF REVENUE:	51
5.7.	EXPENDITURE HEADS:	54
6.	IMPLEMENTATION FRAMEWORK.....	56
6.1.	APPROACH TO PROJECT IMPLEMENTATION	56
6.2.	OPTIONS FOR DEVELOPMENT UNDER PPP FRAMEWORK	57
6.2.1.	<i>Service Contract:</i>	<i>57</i>
6.2.2.	<i>Management Contracts</i>	<i>57</i>
6.2.3.	<i>BOT/ Concession Contracts</i>	<i>57</i>

6.2.4.	<i>Performance Parameters & Monitoring Mechanisms</i>	58
6.3.	CHOOSING A PPP FRAMEWORK.....	58
6.4.	MERITS AND DEMERITS OF VARIOUS OPTIONS.....	59
6.5.	INSTITUTIONAL FRAMEWORK FOR VADA INDUSTRIAL PARK	60
7.	ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT	63
7.1.	NEED OF THE STUDY	63
7.2.	METHODOLOGY FOR ENVIRONMENTAL IMPACT ASSESSMENT (EIA).....	63
7.3.	PROPOSED APPROACH.....	64
7.4.	RESETTLEMENT AND REHABILITATION ASPECTS FOR VADA REGION	67
7.5.	SOCIAL IMPACT ASSESSMENT (SIA)	67
8.	STATUTORY & LEGAL FRAMEWORK	71
8.1.	KARNATAKA URBAN DEVELOPMENT AUTHORITIES ACT, (KUDA ACT), 1987 ...	71
8.1.1.	<i>Constitution and incorporation of the Authority</i>	71
8.1.2.	<i>Development Scheme</i>	71
8.1.3.	<i>Acquisition of Land</i>	73
8.1.4.	<i>Property and Finance</i>	74
9.	KEY ISSUES	77
9.1.	LAND ACQUISITION	77
9.2.	AVAILABILITY OF WATER.....	77
9.3.	FUNDING SOURCES.....	77
9.4.	ENVIRONMENTAL ISSUES	77

INTRODUCTION

To promote industrial and economical growth of the region, the State Government has formed a separate authority called Vijayanagar Area Development Authority (VADA)



1. INTRODUCTION

1.1. Background

1.1.1. About Bellary

Bellary has made its mark in the pages of history even before history was drafted. It has its references in the mythology and also the prehistoric era. The district also treasures the rich heritage of the great Vijayanagara Empire, its glory and its fall. The district has witnessed the troughs and crests of economic wellbeing over the ages viz. its splendour during the Vijayanagara rule and the economic downturn after its downfall until the minerals were explored in the district spearheading it to an economic boom all over again. Hampi, a world heritage site in Bellary district has been attracting many tourists to the District. This section discusses the overview of Bellary and the current scenario in the district.

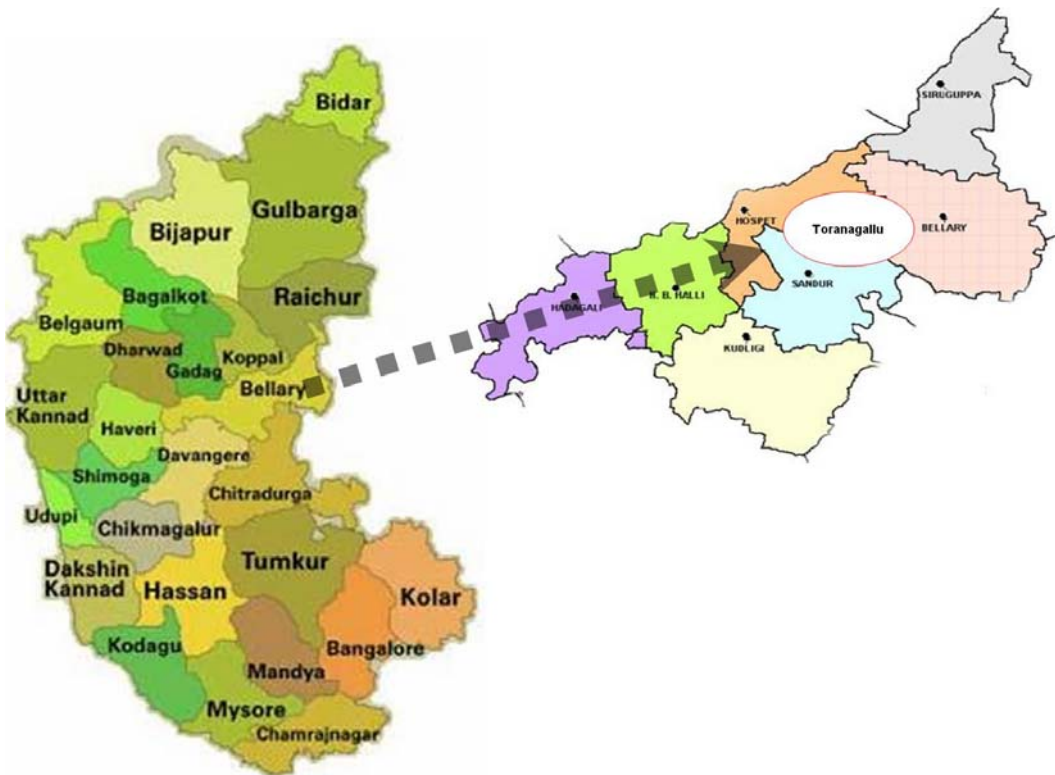
Bellary district is spread from South-West to North – East and is situated on the eastern side of Karnataka State. The district is situated between 14° 30' and 15°50' north latitude and 75° 40' and 77° 11' east longitude. This district is bounded by Raichur district on the north by Dharwad district on the west, Chitradurga and Davangere districts on the south and Anantapur, Kurnool districts of Andhra Pradesh on east. It comes under the administrative control of Gulbarga division and development jurisdiction of H.K.D.B (Hyderabad Karnataka Development Board), Gulbarga.

The geographical area of the district is 8447 sq.km. It has 2 revenue sub divisions viz., Bellary Sub-Division and Hospet Sub-Division which have in all seven taluks. The Bellary Sub- Division has 3 taluks while there are five taluks in Hospet Sub-Division. There are 27 hoblies, two CMCs one Town Municipality, seven Town Panchayat 542 Revenue villages, 436 Thandas/habitations. The rural population constitutes 70%. The density of population is 196 per sq.km which is much lower than the State average of 235 per sq.km. However the decadal growth rate for 1981-91 was 26.92 P.C which is higher than the State growth rate of 21.12 percent. The SC/ST population constitutes 28 p.c. of the total population. The sex-ratio was 965 which is slightly higher than the state average of 960. The average rainfall is 639mm.

The major occupation of this district is agriculture and 75 p.c. total labour force is dependent on agriculture for its livelihood. The important crops grown are Cotton, Jowar, Groundnut, Paddy, Sunflower and Cereals. The net

irrigated area is 37 p.c. to the net area sown. The important rivers are Tungabhadra, Hagari and Chikkahagari.

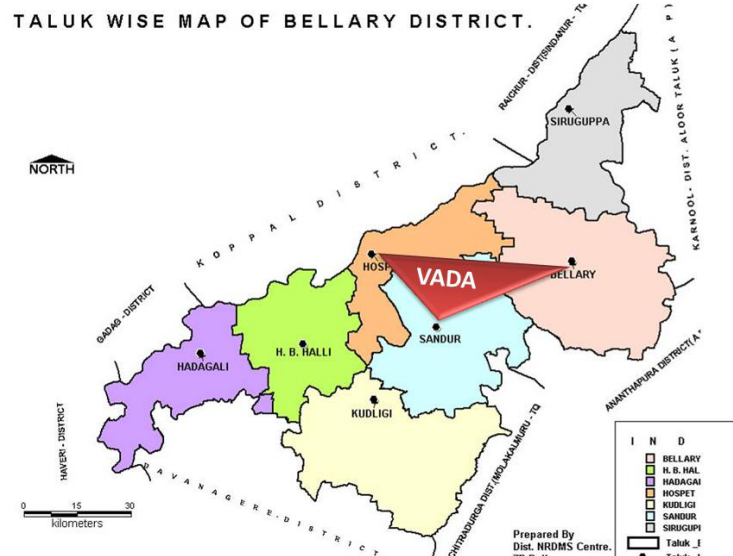
Bellary district is rich in natural resources which need to be tapped to a great extent for overall development of the district. This district is endowed with rich mineral resources. It has both metallic and non-metallic minerals. The metallic minerals include iron ore, manganese ore, redoxide, copper and lead. The non-metallic minerals include andalusite, asbestos, corundum, clay, dolomite, limestone, limekankan, moulding sand, quartz, soap stone, granite and red ochre. The metallic minerals are abundant is only three talukas, Sandur, Hospet and Bellary in the order of mining activity intensity. It was been found out from the interactions with industry experts that nearly 40 million tonnes is mined from Bellary in 2008-09, which was 48 million tonnes in the previous year (2007-08). Of this, 10 million is consumed locally. The annual production of manganese ore in Bellary district was 0.24 million tonnes for the year 2006-2007. Bellary presently is the second fastest growing city in the state of Karnataka after Bengaluru. The real estate prices have already started to shoot as more and more industries are finding their way into this city.



1.1.2. About VADA

Despite the availability of minerals in large quantities, this district is considered to be an industrially backward district. There are 23 units of large and medium scale industries in this district with an investment of Rs.447.76 crores employing around 9,222 persons¹. Bellary district is famous for the presence of a large number of iron and steel industries as the area is rich in iron ore. The industries are clustered in the Vijayanagar region with Jindal Steel Works (JSW) having India's largest private steel manufacturing facility here. At present it occupies ninth place in the state. Sathavahana Ispat Ltd. is the first Pig Iron plant setup in the region to utilize the abundant iron ore reserves available, Kirloskar was the next to follow with their Pig Iron plant. However with the commissioning of Jindal Vijayanagar Steel Limited at Hosapete, the industry scenario of this district underwent sea changes. Mukund Steels and Kalyani Steels have also started industries in this area. The inflow of investment into these industries would be around Rs.30,000 Crores.

The district will therefore come under heavy pressure on basic infrastructure such as power, communication, health, education and police stations which again invite heavy investment to create the needed infrastructure. Urgent action is needed to pool the resources under various sectors such as District Sector, State sector, Border Area Development, HKDB etc., and prepare a perspective plan to the emerging challenges. It has already drawn the attention of social scientists, economists, administrators and other related functionaries to think over the possible positive and negative impact in this area. The ruthless and illegal mining of iron ore in the district has caused



¹ District Industries Center, Bellary

environmental damage and also wide ranging social and economical impact.

In order to promote industrial and economical growth of the region, the State Government has formed a separate authority called Vijayanagar Area Development Authority (VADA) comprising of around 44 villages falling in Hospet, Sandur and Bellary Taluks. The formation of this new authority is to project Bellary as an industrial hub for steel manufacturing industries.

It is proposed to develop an Industrial Park in VADA region with an area of about 559.61 sq. km. providing state of the art infrastructure to the investors setting up iron and steel and allied industries in the region (herein referred to as “the Project”).

1.2. Need for the Study

Earlier, some of the constituencies, which now exist in VADA region, were under Bellary Urban Development Authority (BUDA) province. The availability of the mineral resources and the increased investment of government in the transport infrastructure like roads, railways etc. has driven the huge industrial investment planned of about Rs. 10000 crores in VADA region in a span of 3 years. This rapid industrialization led to the unplanned development. As a result, the resources became scarce like water and power etc. Hence, in order to aid the planned and controlled industrial & township development, establishment of an industrial park is necessary. In addition to the abovementioned strengths, the region also has the following opportunities that increase the need for the industrial park.

- Increased availability of the mineral resources in the VADA region
- Local entrepreneurs creating new and diverse economic opportunities.
- Expansion of JSW plant creating additional economic and employment potential in the region
- Proposed Expansion of Bellary Thermal Power Corporation Limited

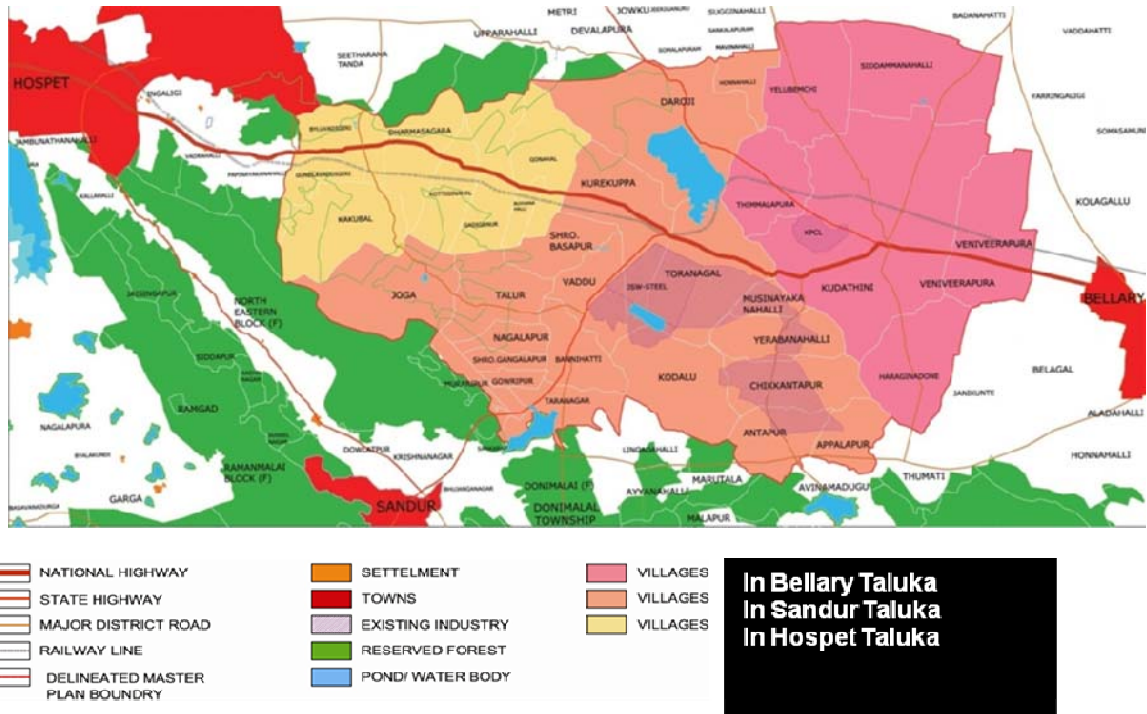
1.3. Drivers for Industrial development in VADA region

The VADA region has following advantages that drive in the demand for the development of industrial park:

- Good Regional connectivity by rail, road & air
- Existing and Expanding Industrial Base
- Availability of the Iron Ore
- Proximity to Urban Centers, Bellary, Hospet and Sandur

- Mostly undeveloped area except for scattered structures in villages and some industrial development.
- Vast Stretches of Dry land
- Gateway to World Heritage Site-Hampi

Delineated Vijayanagar Master Plan (Source: CEPT)



1.4. Objective of the study

Phase I

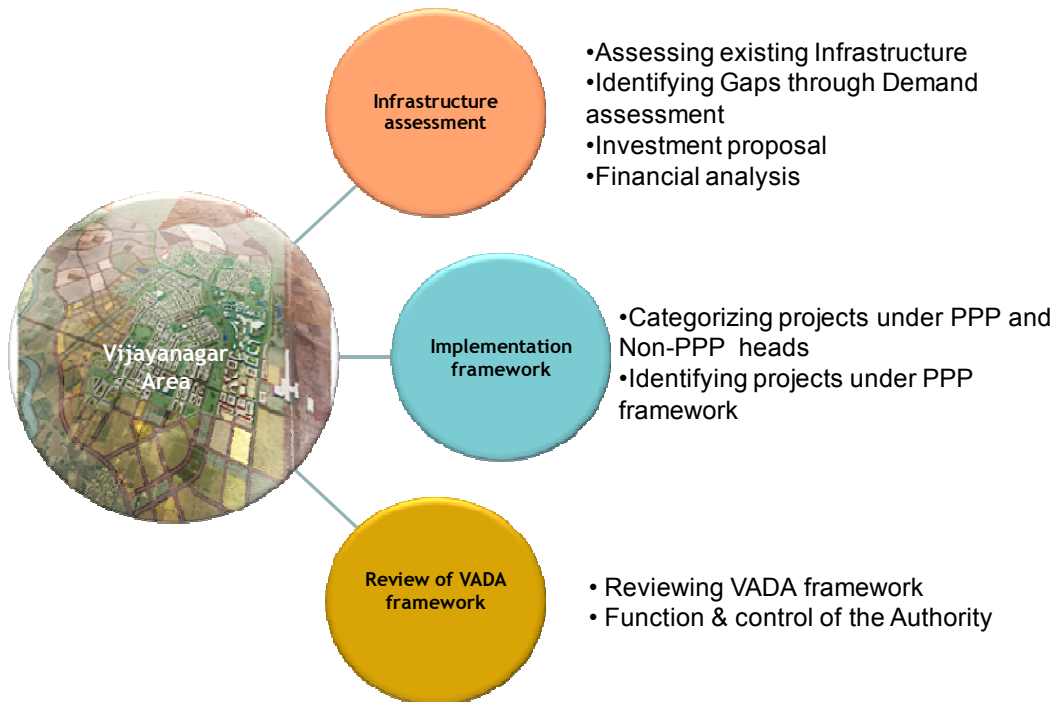
- Review of the existing infrastructure in VADA region
- Broad assessment of the basic and allied infrastructure required for development of the Industrial Park.
- Estimation of costs for the assessed infrastructure on thumb-rule basis and the likely operation and maintenance costs.
- Estimation of likely revenue sources and expenses based on the secondary research.
- Financial viability assessment based on the above estimates.
- Identification of key issues having implications on legal and statutory framework.

Phase II (Activities under this phase would be the covered in next stage)

- Detailed Technical and financial feasibility study would be done as a part of DPR
- Structuring of the Project to identify suitable implementation methods

1.5. Approach

The approach of the project is schematically shown as:



1.5.1. Infrastructure Assessment

The requirement of the infrastructure facilities is assessed in the region so as to aid the industrial and thereby economic development. The infrastructure assessment involves the initial process of the studying the existing infrastructure at vijayanagar area covering the core infrastructure like roads, railways, water supply, power etc,. After studying the existing infrastructure facilities in the region, the gap between the existing and the required infrastructure is identified.

The gap in the core infrastructure facilities is identified through demand assessment, where the industrial and residential needs are anticipated keeping in mind, the future plans of industrial capacity building and township creation.

The estimation of financial investment needs was the subsequent stage on identification of gaps in the infrastructure facilities. Such estimation is carried out on thumb rule basis as per industry standards. The investment required for each of the core infrastructure components was estimated through project identification.

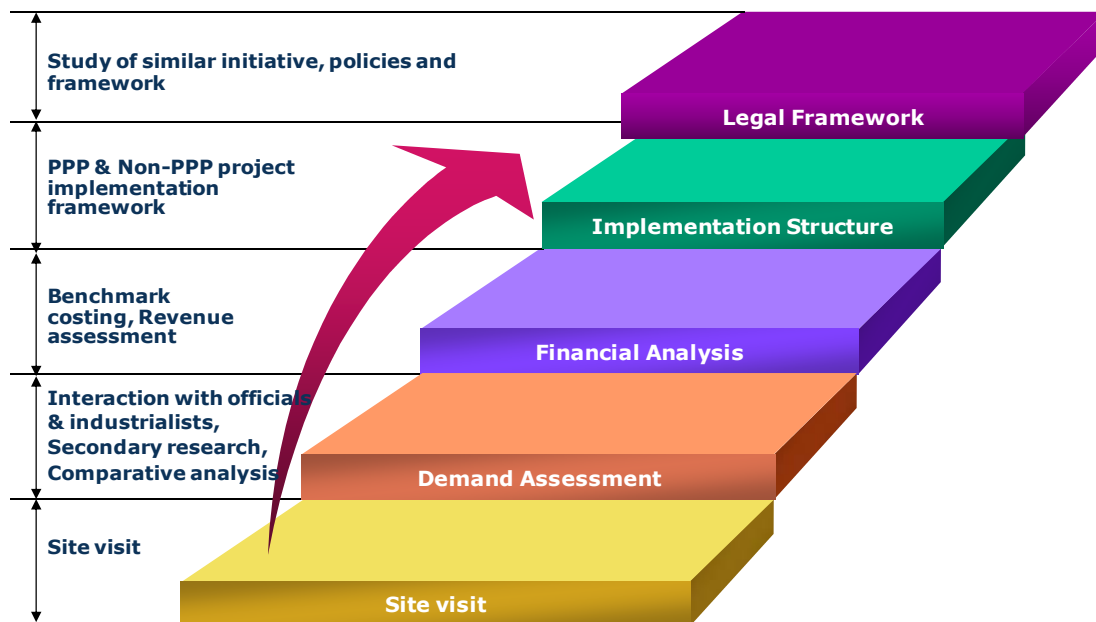
1.5.2. Implementation framework

As the investment requirement and the project identification was carried out in the earlier stage, the next stage concentrates on the categorization of the identified projects into PPP (Public-Private Partnership) projects and Non-PPP projects. Hence the investment requirement by the government and the private was arrived at.

1.5.3. Review of VADA framework

The constitution of Vijayanagar Area Development Authority (VADA) was notified by Karnataka government under the provision of KUDA (Karnataka Urban Development Authority) Act. The functions and control of the authority (VADA) and the organizational framework of VADA were reviewed.

1.6. Action Plan



Based on the approach aforementioned, the action plan was drafted in order to attain the objective of the study.

1.6.1. Site Inspection

The site visit in the VADA region was carried out to ascertain the existing land use pattern and the distribution of habitation in the area. Land use pattern signifies the percentage of residential, industrial and agricultural areas in the region. The existing infrastructure facilities were also studied during the site visit, like connectivity infrastructure – roads, railways etc.

1.6.2. Demand Assessment

The demand assessment plays the major role in the industrial establishments and development of the area. The first level of interaction was carried out with the government officials in order to understand the government's perspective plan for the development of this region covering three taluks in Bellary district. The government officials to be met are VADA commissioner, Deputy Commissioner -Bellary, Joint Director – Directorate of Industries & Commerce, Bellary. In a subsequent phase, the industrialists in VADA region like JSW group, mining industrialists etc, were interacted with, to understand their future expansion plans, demand and future potential of the sector.

Secondary research was carried out to assess the availability of mineral resources, especially iron ore deposits in the region. Then, the demand of iron ores, as obtained from the industrialists were mapped onto the available iron ores in the region. The iron ore movement by means of roads and railways to the ports and industries are also studied. Accordingly, the development plan of the industrial park was made, based on the iron ore movement. Comparative analysis of this development plan was done against the existing models of such industrial parks and township (Case studies).

1.6.3. Financial analysis

The primary stage is the cost estimation for the development of industrial park including the governmental and private investments. The major portion of government investments would be made for the provision of core infrastructure and other related activities. The core infrastructure would comprise of roads, railways, water & sewerage system, solid waste management, power, telecom etc.

The revenue assessment is also carried out taking into considerations, the power of Vijayanagar Area Development Authority to collect various charges from the local residents and the industries, as per Karnataka Urban Development Authority (KUDA) and other relevant acts. The sources of

revenue generation are earmarked through this process and the possible revenue that could be generated from the region over the certain period is estimated.

1.6.4. Implementation structure

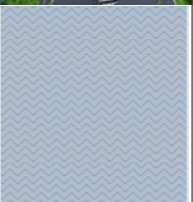
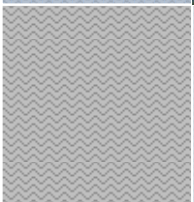
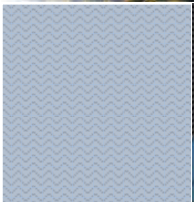
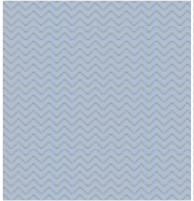
The eligible projects for Private-Public Partnership were identified in the process and the projects would be categorized under PPP and Non-PPP headings. Once the cost and revenue estimates are done, the required investments to be made by the Private partner and the government would be arrived at accordingly.

The approach for either private sector or joint sector project implementation would be derived through careful assessment of issues related to risk sharing and financial viability of the project.

The feasible project structuring options based on assessment of project economics and financial viability would be evaluated. Project structuring options have different implications for risk sharing, revenue generation and ownership. Analysis of all these structuring options would be done and would recommend the most efficient Project structure for the implementation of the Project.

1.6.5. Legal Framework

Review of the VADA implementation framework was done. Similar project initiatives, policies and the framework are studied for the PPP projects. The applicable acts as per the state government and their implications were also studied. And accordingly the legal framework for the suggested implementation structure is devised.



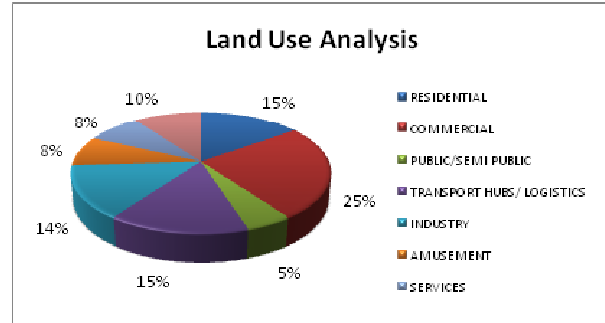
CASE STUDIES

*Gujarat Urban Development Corporation (GUDC) Township
Hazira Industrial park*

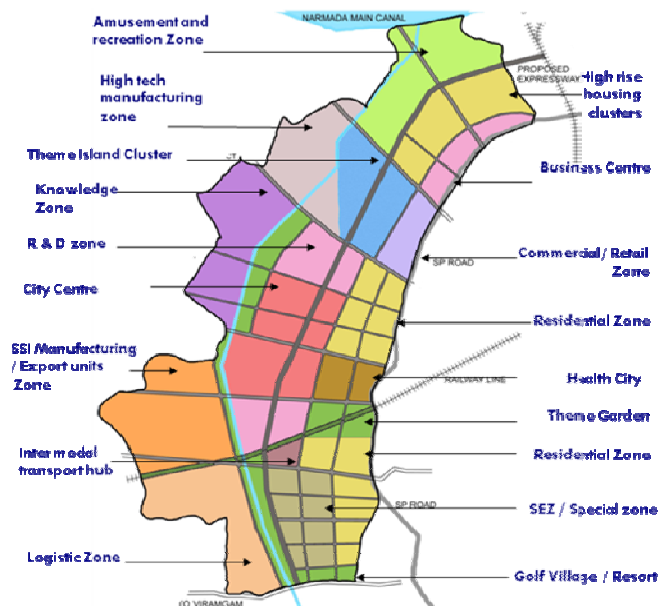
2. Case studies

2.1. GUDC (Gujarat Urban Development Corporation) Township

The master plan of the Ecopolis comprises 98 sq km gross land area and is composed of 75 % mixed-use, with 25% devoted to open spaces including amusement. Ecopolis is designed to be a dynamic and self-contained pedestrian-friendly city. A fine-grained network of pedestrian ways that connect to transit and parking are made available.



2.1.1. Master plan of Ecopolis - GUDC



Ecopolis offers,

- ▶ Comprehensive planned development that caters to present and future requirements.
- ▶ Excellent physical infrastructure to meet the requirements of a thriving economy.

- ▶ Integrated and well developed social infrastructure-education, wellness and recreation.
- ▶ Inclusive governance framework that ensures safety, security and availability of excellent services.
- ▶ Comfortable spatial layouts that are based on ecologically sustainable models that enhance the quality of life.

2.1.2. Infrastructure

Infrastructure facilities at Ecopolis include the following:

- ▶ World class 8-lane expressway
- ▶ A multimodal public transport system
- ▶ Excellent and reliable power infrastructure, with adequate backup.
- ▶ Uninterrupted water supply and consistent water pressure.
- ▶ Fully integrated sewage collection, treatment and disposal facilities.
- ▶ A solid waste management system that aims to achieve “Zero Waste Disposal”
- ▶ Extensive use of renewable energy – particularly solar power and waste-to-energy plants;
- ▶ Fibre optic cabling network designed to support a wide range of telephone, video and data applications.

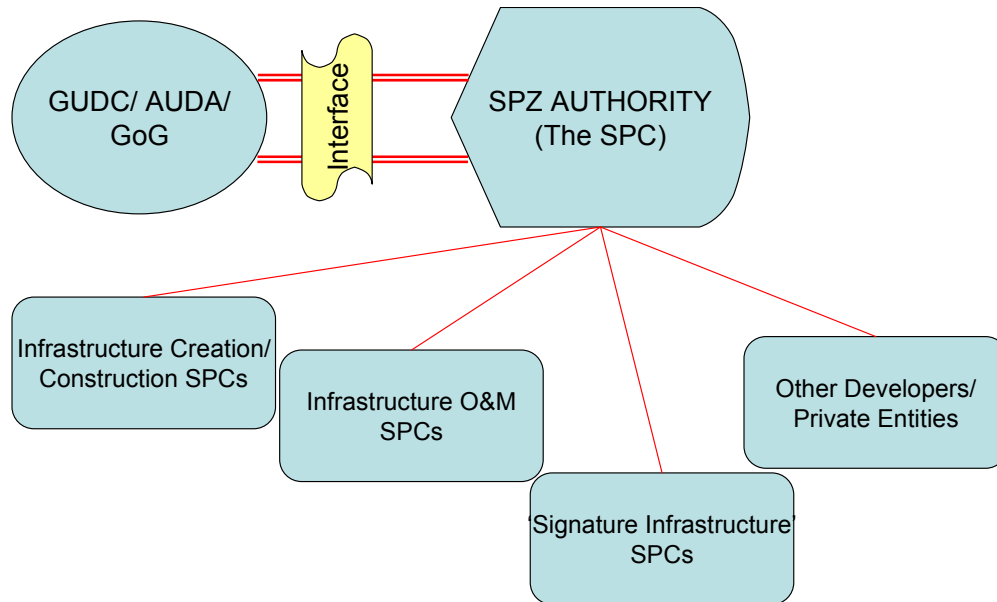


The proposed investment plan for the project is as follows:

S No	Core Infrastructure	Investment (Rs Crores)
1	Roads	4100
2	Water	400
3	Sewerage	300
4	Power	2500
5	SWM	150
	Total	7450

2.1.3. Implementation structure

The implementation structure for the development of township, Ecopolis under the provision of SPZ (Special Planning Zone) is schematically shown in the figure below. The implementation of the project was carried out by a Special Purpose Company (SPC) constituted for the purpose.



The responsibilities of SPC (“SPZ AUTHORITY”) are as follows:

- ▶ Evolving the detailed master plan, infrastructure plan, and development control norms for the SPZ;
- ▶ Detailing the rollout plan for infrastructure, common amenities & *signature* developments;
- ▶ Developing the financial model and structuring the project finances on a sustainable mode;
- ▶ Financing & syndicating finance for the project in accordance with the rollout plan;
- ▶ Acquisition of land for the ROW, signature developments, and certain common areas:
 - ❖ Acquisition of land would be carried out by GUDC under its process, and paid by the SPZ Authority

- ▶ Setting in place a procurement plan for attracting developers/ investors for various zones of the SPZ;
- ▶ Managing the SPZ infrastructure; and
- ▶ Regulating the development in the SPZ in terms of the approved development control norms.

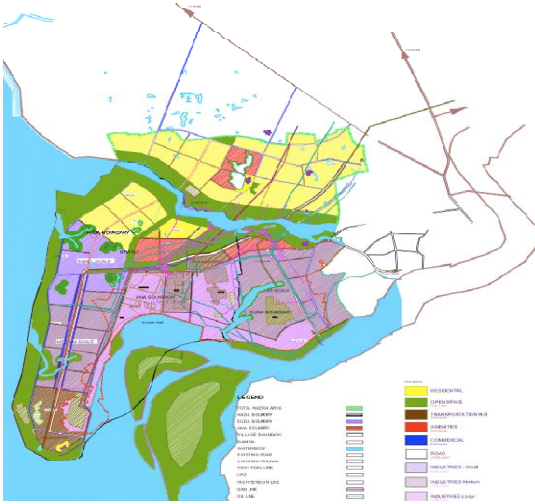
2.1.4. Revenue Model

The revenue model for the SPZ Authority has broadly comprised of four parts:

- ▶ **PLANNING PERMISSION FEE:** This is of the nature of a registration fee levied on all developments in the SPZ, recovered at the plan permission stage;
- ▶ **INFRASTRUCTURE DEVELOPMENT FEE (IDF):** The infrastructure development fee is linked to the cost of provision of infrastructure services (capital recovery), recovered at the plan permission stage;
- ▶ **INFRASTRUCTURE OPERATIONS CHARGE (IOC):** This fee is of the nature of utilities charges, linked to the cost of O&M for infrastructure services; and
- ▶ **SPZ DEVELOPMENT CHARGE:** This would be a levy on every transaction (sale, lease, or license), discovered through a suitable transparent process. This revenue captures an element of the benefit that a developer/ investor gains by coming into the excellent structure and infrastructure of the SPZ, as against the benefit of acquiring and developing raw land.

2.2. Hazira industrial park

Hazira is an industrial notified area in Surat district in Gujarat. It is basically a centre for health tourism due to the water rich in mineral over here. But due to its geographical location it has gained attraction from various industrialists. So Hazira is more famous for the gigantic industries located over here. ONGC, Indian Oil, Bharat Petroleum, GAIL, Kribhco, NTPC, Reliance Industries, GSPL, L&T, ESSAR, Cairn Energy, GSEG, Nico, Shell are the major industries held in Hazira industrial belt. The development of Hazira industrial area is governed by the Hazira Area Development Authority



(HADA).

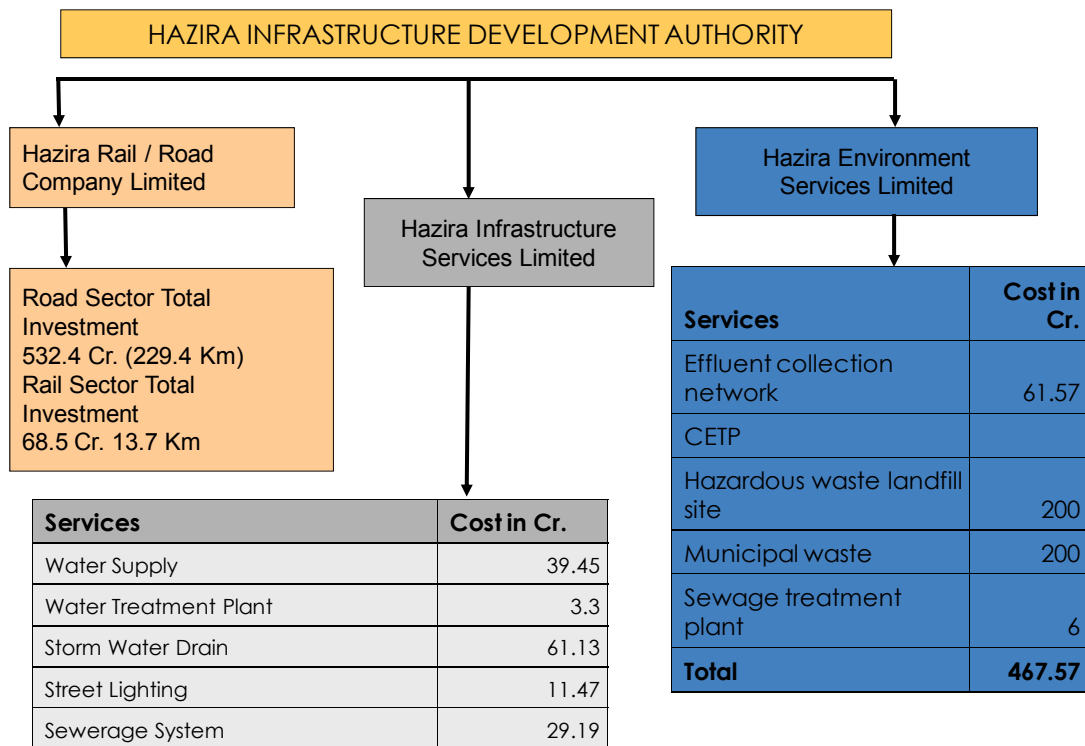
Hazira is 230 kilometers north of Mumbai, 21 kilometers from Surat city and 31 kilometers from Udhana. Access is via NH-6 and NH-8. A new coastal highway connecting Hazira with Navsari which will reduce the commute time has been planned. The project to broaden NH-6 from four to six lanes is under consideration with the National Highways Authority of India (NHAI).

The proposed landuse plan for the development of Hazira industrial area in Surat is as follows:

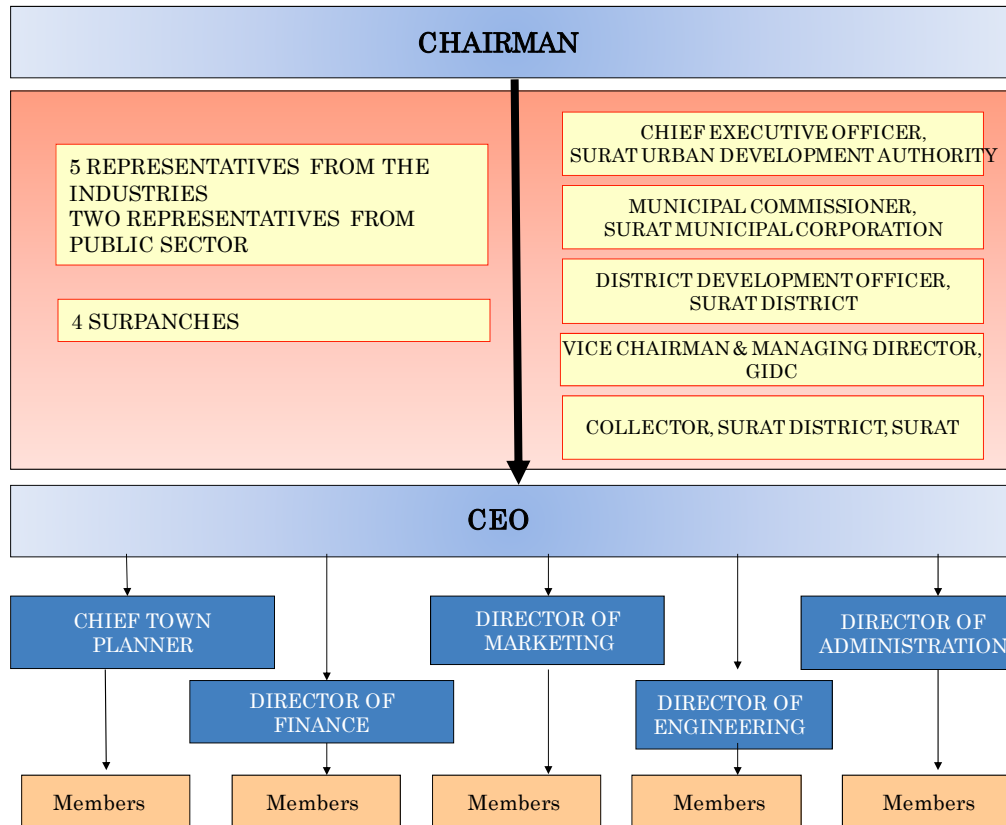
Landuse	Total Hazira Region (sq km)	Total %
Industrial	161.69	9.64
Residential	29.91	17.83
Commercial	0.49	0.29
Roads	5.67	3.38
Railway	2.04	1.22
Transportation Hub	4.04	2.41
Amenities	4.77	2.84
Green Open Space	28.98	17.27

Landuse	Total Hazira Region (sq km)	Total %
Settlement	0.38	0.23
Waterbody	1.21	0.72
River	0.84	0.50
Forest	0.90	0.54
Existing Industries (outside HNA)	0.70	0.42
River bet	20.52	12.23
Total Proposed Area	116.66	69.52

The investment plans of Hazira Industrial park is as follows:



2.2.1. Implementation Structure



The responsibilities of the HIDA (Hazira Infrastructure Development Authority) are as follows:

- ▶ HIDA would retain management and regulatory control
- ▶ HIDA would be designated as a special “Municipal Authority” for Implementation of Hazira Master Plan Area
- ▶ HIDA will develop key amenities through specific private-public partnerships
- ▶ HIDA will develop separate SPVs for
- ▶ Toll Road/Rail (Rail-Road Company Limited)
- ▶ Other Utilities (Water-Waste Water etc.)

2.2.2. Revenue Model

The revenue sources for the authority, hence formed are as follows:

- ▶ External Infrastructure Development Charges on all Land sale/long term lease in the region
- ▶ General maintenance fee
- ▶ Betterment Charges
- ▶ User Fee
- ▶ Toll/Entry
- ▶ Connection Fee
- ▶ Landscaping/Green Belt Fee

2.2.3. Infrastructure

HIDA would facilitate:

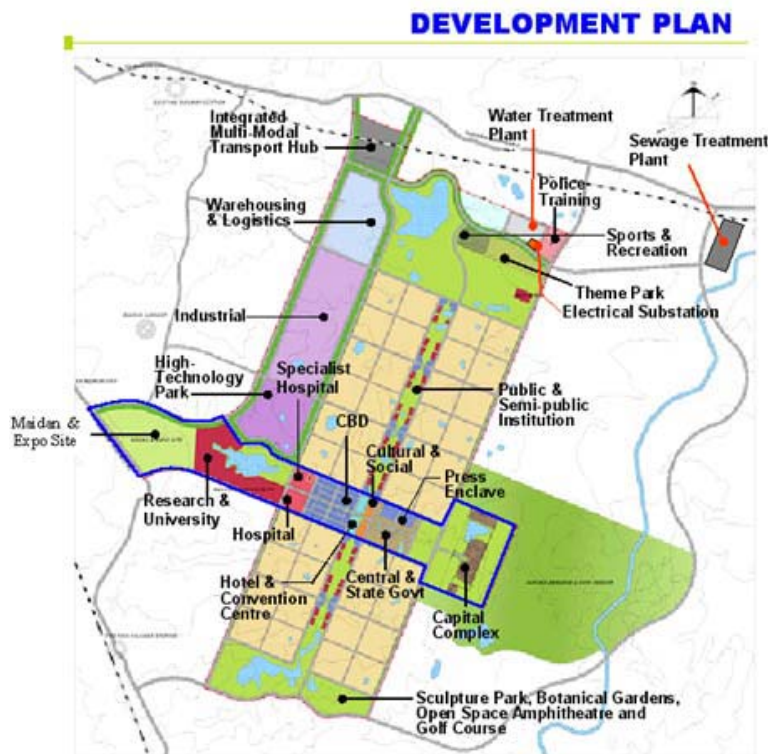
- ▶ 100% Privately owned entities for Municipal waste treatment/Disposal
- ▶ Industrial Effluent Treatment
- ▶ Hazardous Waste
- ▶ Power
- ▶ Telecommunication
- ▶ Roads



2.3. NRDA (Naya Raipur Development Authority) - Development of Naya Raipur, Chattisgarh

The State of Chhattisgarh was carved out of erstwhile Madhya Pradesh on 1st November 2002 in deference to its distinctive historical, social background and natural resources. The new state is located in the southern east part of Madhya Pradesh. Raipur was made the capital city of the state. The city of Raipur is administratively divided into 13 Tehsils and 15 revenue blocks. The total population of the city is 21 million. Raipur, with its growing importance as the major node in trade network and a host of industries (mining, cement, steel), has the potential of developing into a metropolis. The present city is constrained by availability of land, space and basic infrastructure to develop into a metropolis. Considering the immense growth potential of the city and with a view to decongest the city, a need was felt for creation of a new capital city (Naya Raipur), in close proximity to Raipur city.

Development of a new city is a mammoth process and requires integration of several aspects such as planning and development, implementation of projects under appropriate frameworks, monitoring the development activities. Capital Area Development Authority (CADA) was incorporated by the Government of Chhattisgarh under the Chhattisgarh Town and Country Planning Act as a Special Development Area Authority. CADA was renamed as Naya Raipur Development Authority (NRDA) in the year 2005.



The land use plan of the Naya Raipur city planned is as follows:

Land use	Land area (ha)	
	Total	%
Capital Complex	225	47
State Assembly	25	
Secretariat	26	
Police and Security Headquarters	20	
Governor's House	5	
Green and water areas within capital complex	150	
Central Government Offices	10	2
State Government Offices	15	3
Head of Department's Offices	15	3
Habitat and Academy Training	10	2
Press Enclave	20	4
Social and Cultural	33	7
Open Space	125	26
Ceremonial and parade grounds	80	
Park and other green areas	45	
Infrastructure - Roads and Utilities	23	5
Total	475	100

The entire region was divided into three main zones based on the relative distance from the present city for site selection. The region was also divided into four different quadrants for locational analysis. The parameters considered and analyzed for site selection include the following:

- a. Transport & Infrastructure
 - Linkage to existing transport network and easy future connectivity
 - Linkage to existing infrastructure network including water, power and telecommunications
 - Availability of water sources
- b. Land Availability & Suitability
 - Availability of Government land
 - Land otherwise unsuitable for agriculture, mining and quarrying
 - Land with development friendly contours & other physical features
 - Land with less number of existing human settlements
 - Land with minimum forest cover and wildlife
 - Land with a gentle slope to facilitate easy drainage and discharge of effluents
 - Soil conditions with good bearing capacity for structural stability.
- c. Environmental considerations
 - Environment friendly location
 - Favourable climatic conditions
- d. Economic Catalysts
 - Existing industries, mining resources, reserve forests, wildlife sanctuaries and other tourist attractions act as economic catalysts
 - Airport, Software Technology Park to act as anticipated economic catalysts
 - Proximity to the Raipur City
- e. Other Parameters
 - Land Value in the region
 - Existing Airport Implications
 - Local Landscape Features

The project cost for development of Naya Raipur city is as follows:

Cost Component		Phase 1 (In Rs Crore)	Phase 2 (In Rs Crore)	Phase 3 (In Rs Crore)	Total (In Rs Crore)
Land Acquisition		212	117	42	371
Trunk Infrastructure Development		1651	928	339	2,918
Govt. Housing (including social infrastructure)	Internal Development	96	32	-	128
	Building Cost @ Rs 5 lakh per d.u.	1080	360	-	1,440
Private Housing (including social infrastructure)	Internal Development	160	224	-	384
	Building Cost	1440	2016	1152	4,608
Capital Complex	Internal Development @ Rs 30 Lakh / ha	54	-	-	54
	Building Cost	1220	-	-	1,220
Govt. Offices	Internal Development @ Rs 30 lakh / ha	12	4	-	16
	Building Cost @ Rs 8000 / m ² & 0.7 FAR	224	79	-	303
Facility Areas	Internal Development	50	50	25	125
	Building Cost @ Rs 8000/ m ² & 0.8 FAR	994	994	497	2,485
Commercial Areas	Internal Development	34	85	37	156
	Building Cost	778	1930	853	3,561
Manufacturing Areas	Internal Development	161	-	-	161
	Building Cost @ Rs 6000/ m ²	1791	-	-	1,791
Transport	Internal Development	7	-	-	7

	Building Cost @ Rs 9000/ m2	580	-	-	580
Recreation & Water bodies		52	153	52	257
Total		10,596	6,972	2,997	20,565

The development of Naya Raipur covering 7918.37 Ha has been distributed in three phases spread over the next 25 years as presented below:

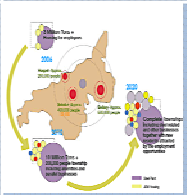
Phase	Horizon Year	Cumulative Population	Area (Ha)
Phase I	2011	140,000	3252.22
Phase II	2021	340,000	3076.13
Phase III	2031	540,000	1590.02
Total developed Area at the end of phase III			7918.37

Phase I includes the development of the Capitol Complex & the Government offices along with housing for Government employees to provide an initial impetus to growth. Phase II includes the development of the institutional area, the exhibition ground and the city parkland along with residential development. Phase III includes development of a transportation hub and the integrated freight complex to service the city and other development activities.

The development of light industries, software technology park, government offices and government housing is expected to span across all the phases. Each developmental phase shall include the development of the requisite social and physical infrastructure to support the anticipated population.

SOCIO ECONOMIC PROFILE OF VADA

Demographic Characteristics
Population projections
Topography



3. SOCIO-ECONOMIC PROFILE OF VADA AREA

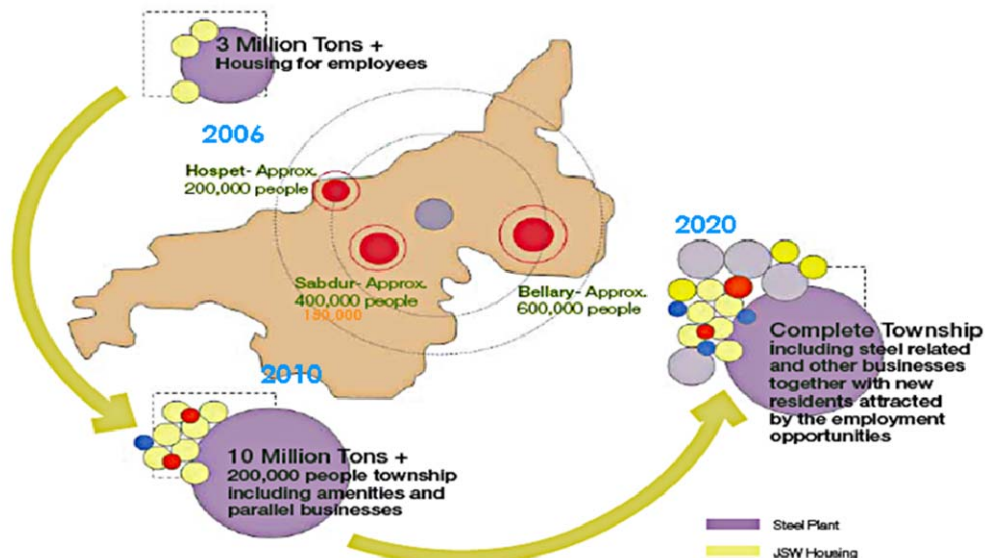
3.1. Demographic Characteristics

The demographic characteristics of the Vijayanagar area comprising the taluk-wise population and the population density is depicted in the following table:

Taluka	No of Villages	Area in sq km	Population (2001 census)	Density (Persons per sq km)	Growth rate (%)
Sandur	28	272.29	46,130	169.41	8 %
Bellary	6	188.56	19,847	105.25	2 %
Hospet	10	98.76	21,308	215.75	7 %
VADA area	44	559.61	87,285	155.97	6 %

3.2. Population Projections

The huge investment in Steel sector is anticipated in the region of Vijayanagar



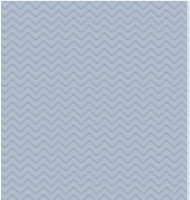
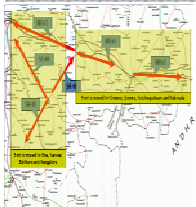
Area with the abundantly available iron ore resources. The employment generation created by such industrialization also increases the population in the region. Hence the steep projection of population growth reaching nearly 1 million by 2020 is noted in the picture shown above.

3.3. Topography

There is a general gradual slope towards North due to the existence of rivers on the east and the western side of planning area flowing in the direction of South to north.

The most prevalent soil in the region is black cotton soil which is the result of disintegration of hornblende schist which is the derivation of old volcanic flows of metamorphic lava. However, sandy, light grey, reddish and brown soil also occurs in the area. Major portion of the area is black and red soil. The soil is rich in calcium and poor in nitrogen phosphate and potash. The excessive salt content in the area has led the area into poor yield and not suitable irrigation.

Geological formations are of archean origin occurring in elongated bands of Dharwar formations which is source for rich mineral wealth. The economic minerals associated with this formation are Manganese, iron ore, Gold, Copper, Mica etc. The Sandur belt and Hospet belt in the region are well known for their un-tapped doormen resources. The estimated iron ore in the Sandur and Hospet belts is about 1500 Million tones with 65% to 70% iron content.



INVENTORY OF INFRASTRUCTURE

Need for Inventorisation – Iron ore movement – Existing Infrastructure assessment-Traffic assessment – Gap Identification – Proposed landuse and projects

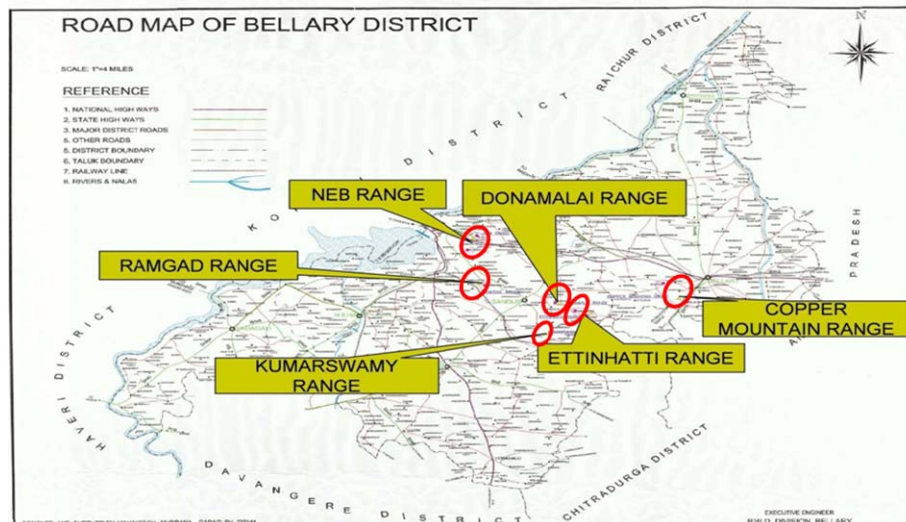
4. INVENTORY OF INFRASTRUCTURE

4.1. Need for Inventorisation of Infrastructure

Nearly 40 million tons of iron ore deposits were mined from Bellary in 2008-09. Out of this, about 10 million tons of iron ore is consumed locally for the production of steel, sponge iron and other related products.

There are about 8 (eight) mining regions in Bellary as follows:

- NEB range [includes Bharatarayanaharavu, Gogga property, Ingligi, Jambunathanahalli and Sankalapuram]
- Ramandurga or Ramgad range [includes Ramandurga, Ramgad and Vyasankere]
- Timmappangudi range
- Donimalai range
- Ettinhatti range [includes Ubbalagandi, Rajapuram and Konanharavu]
- Devadri range
- Kumarswamy range [includes Subrayanahalli] and
- Copper Mountain range [includes Halkundi, Belegal, Vibhutigudda and Haraginadona mines]



Entire production and dispatches of the iron ores is divided into three zones

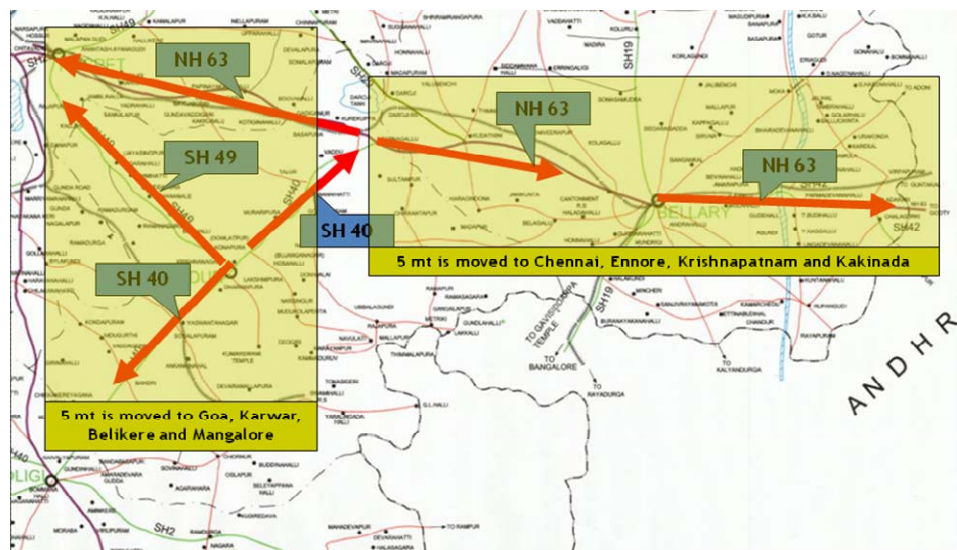
- Hospet Area
- Bellary Area
- Sandur Area

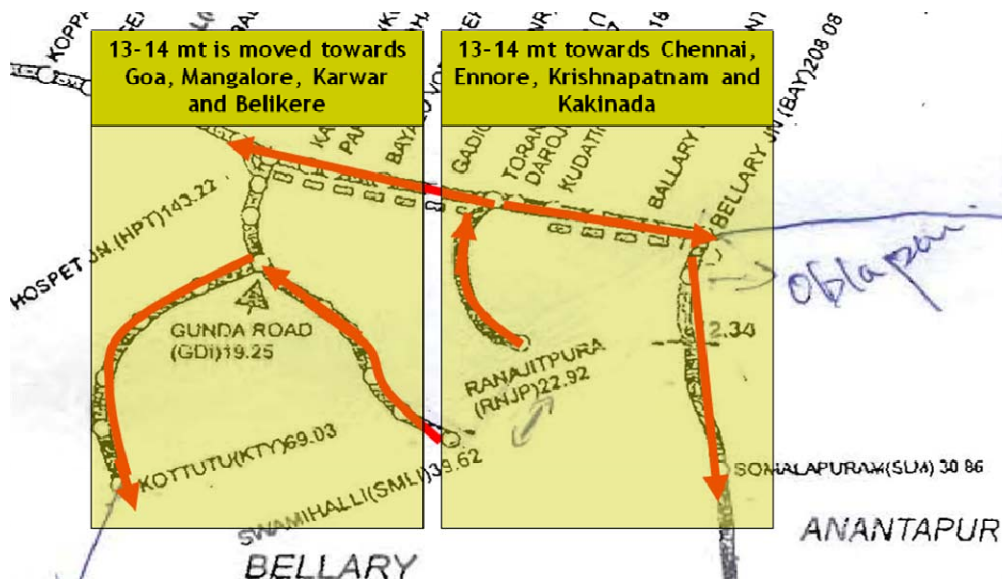
From Each zone about 12-15 mt (million tons) of iron ore was dispatched in 2008-09. The dispatches from Hospet area are anticipated to get increased to 20 mt from the present 15 mt (excluding the potential under the MSPL owned mines). Sandur area has the highest potential for expansion because of the large holdings of mine owners in this region.

4.1.1. Movement of iron ore by road and rail

Out of the total iron ore mined from this region,

- 30% is transported by road- to the West (Goa, Karwar, Belikere and Mangalore ports~ 5 mt) and to the East (Chennai, Ennore, Krishnapatnam and Kakinada ports~ 5mt) (16,000 -20,000 lorries each day)
- 70% is transported by rail-to Goa (10mt), Mangalore, Karwar and Belikere (2-3mt) Chennai (8mt), Krishnapatnam and Kakinada (2mt) and Ennore (1mt)(22 rakes consisting of 58 wagons each and carrying capacity of 3850 tonnes)
- Approximately 30 million tonnes is transported from the district of which 10 mt is consumed locally by steel plants, pig/sponge iron plants
- Currently, ore movement has reduced drastically (12 rakes of railway per day)





4.2. Traffic assessment

As the iron ore movement through major national highway and state highway roads is discussed in the above section, the next stage is to identify the capacity of the existing roads (in terms of Passenger Car Units) and the future traffic flow on these roads are studied. The traffic assessment details of the National Highway NH 63 and the State highway SH40 are depicted below.

- NH 63

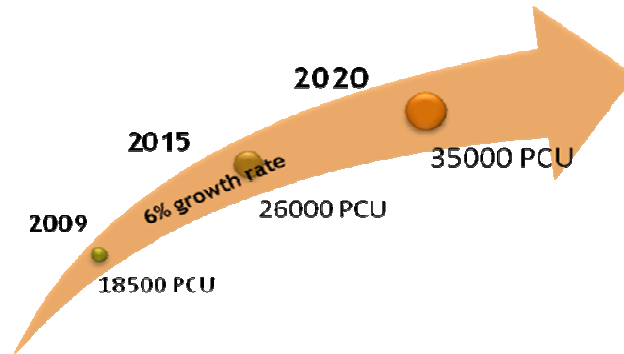
The homogenous section of NH 63 lying between Hospet and Bellary is the major route taken by the trucks for the iron ore transport from Bellary to the nearby ports. The length of this section of the road is about 76 km.

The current traffic density on this section was found to be about 18500 PCU (2009). The existing lane width of the NH63 on this section is 7.0 m. The current lane is a two lane road with bad surface & Sub Grade condition.



The traffic on this section of road is projected at a growth rate of 6% till year 2020. It is found that the traffic on this section of road would reach nearly 35000 Passenger Car Units (PCU) by 2020, which demands the widening of

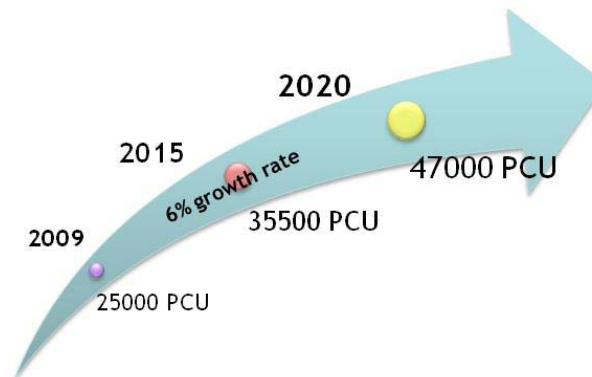
the road into four or six lane by 2010 as the capacity of the two lane road is only 20000 PCUs (Source: Industry Standard).



- SH 40

The homogenous section of SH 40 running through Torangallu-Sandur-Kudligi is another major route taken by the trucks for the iron ore transport from Bellary. The length of this section of the road is about 50 km.

The current traffic density on this section was found to be about 25000 PCU (2009). The existing lane of the SH40 on this section is an intermediate lane. The road in this section is found to be with bad surface & Sub Grade condition.



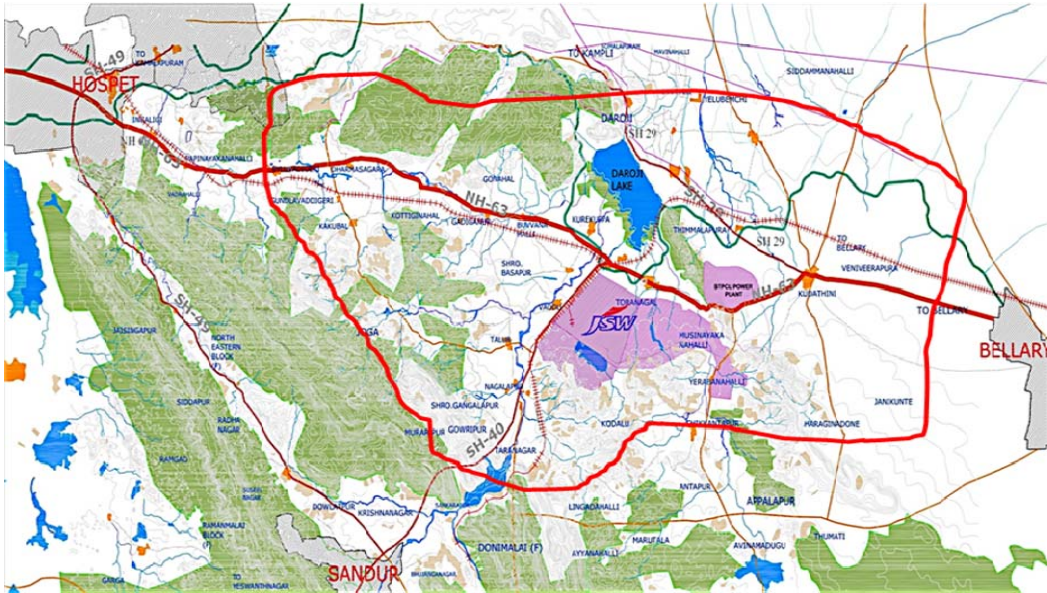
The traffic on this section of road is projected at a growth rate of 6% till year 2020. It is found that the traffic on this section of road would reach nearly 47000 Passenger Car Units (PCU) by 2020, which demands the widening of the road into four lane by 2010 as the capacity of the two lane road is only 20000 PCUs (Source: Industry Standard).

4.3. Existing Infrastructure in VADA

The section covers the infrastructure facilities of the VADA region like roads, rail, truck terminus, power, water and solid waste management. The details on the existing infrastructure facilities are listed as below:

- Connectivity
 - Roads include NH63, SH 40, SH 49 and other Major District Roads (MDR). The conditions and the traffic characteristics of the roads are discussed in the above section, which demands for the strengthening and widening of the existing infrastructure.
 - The Rail line is present parallel to NH-63.
 - The truck terminus with the capacity of holding 500 trucks is already present at Jindal Steel Works (JSW), which wouldn't be sufficient as the fleet is expected to be more than 5000 trucks per day transporting the iron ores and other materials like coke etc.
- The region also houses the power generating plant of BTPCL (Bellary Thermal Power Corporation Limited) with the current generation of about 500MW power. There is a plan of expansion of the plant to 1000 MW.
- Water
 - The major source of water supply for the region is Tungabhadra Dam. TungaBhadra dam is constructed across river Tungabhadra, a tributary of River Krishna. The total Krishna River Industrial quota being 5.0 TMC (Thousand Million Cubic ft), Jindal alone gets 2.6 TMC.
 - The other source of water supply in the region is Daroji lake, which is not sufficient to cater to the needs of the upcoming industrial units in the region.
 - The alternative source under consideration is the Almatti Dam in Bijapur District. The dam is allowed to store 42.19 TMC of water while at the height of 52.25 meters.
- The integrated solid waste management system is absent in the region.
- The common effluent treatment plant for industrial waste is also absent in this region.

The existing infrastructure facilities in the VADA region are depicted in the following maps:



 VADA Area

4.4. Gap in existing infrastructure



The gap in the core infrastructure facilities is identified through demand assessment and mapping this demand onto the existing infrastructure. In the demand assessment phase, the industrial and residential needs are projected, keeping in mind, the future plans of industrial capacity building and township creation.

It is anticipated that the material transport through the existing roads would rise to 40000 Tonnes per Day (TPD) in future with the proposed industrial development in this region. The gap on roads sector is identified from the earlier section on the traffic assessment and existing infrastructure facilities, which accentuated the need for the improvement on the existing infrastructure.

Even in case of water supply, the current average water supply level to the households across three taluks – Bellary, Hospet and Sandur, is 69 lpcd (litres per capita per day), whereas the CEEPHO norms for the water supply is 60 - 90 lpcd for a township. Hence it is suggested that the present water supply level needs to be augmented for the future population of about 1 million in 2020. Along with the supply level, the source of the water also need to be taken into consideration as the anticipated population is much higher than the present population of approximately 1 lakh.

The railway lines are also need to be increased as the transport of the iron ores and the other raw materials for the steel and other ancillary industrial units would be faster in bulk, thereby reducing the traffic congestion on the roadways.

Assuming that the power required for the industrial activity (majorly steel & other iron-ore based plants), would be met through captive power generation by the respective units, the power requirement for the households and other non-industrial activities are taken into consideration. Power supply to the remote areas is currently found to be not meeting the demand. Hence the gap is identified in this sector to increase the power generation and supply in the VADA region.

The promotion of industrial development also brings in the pollution problem. Hence to tackle the industrial pollution, the common industrial effluent treatment plants need to be developed.

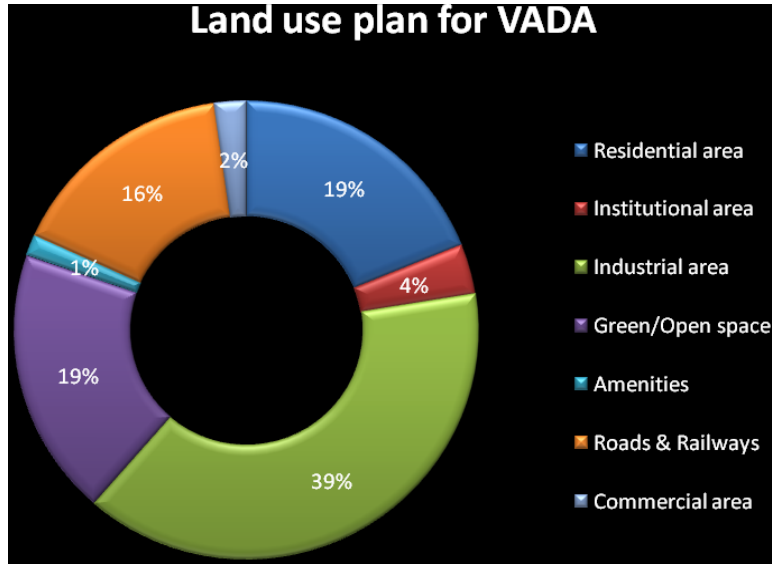
4.5. Proposed Infrastructure in VADA

4.5.1. Proposed Land use plan

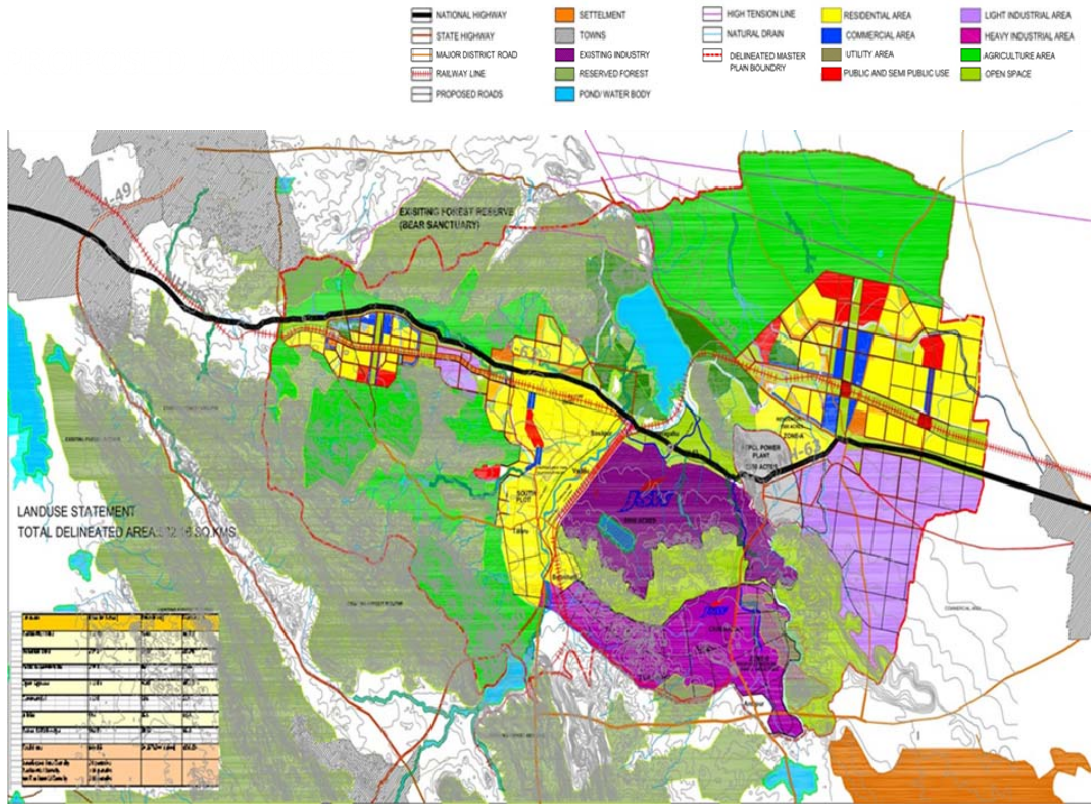
The land use plan proposed by the earlier reports on the Vijayanagar Area development is as follows:

Area Allocation	VADA	
	Area	%
	sq km	
Residential area	46.09	19%
Institutional area	8.69	3%
Industrial area	95.11	39%
Green/Open space	46.14	19%
Amenities	3.66	2%
Roads & Railways	39.04	16%
Commercial area	5.37	2%
Total	244	100%

Out of about 559.61 sqkm area of VADA, the land use plan was proposed for about 244 sq km apportioning major area to the industrial area (39%) followed by residential and green areas (16% each). The pie chart depicting the proportion of land use category wise is as follows:

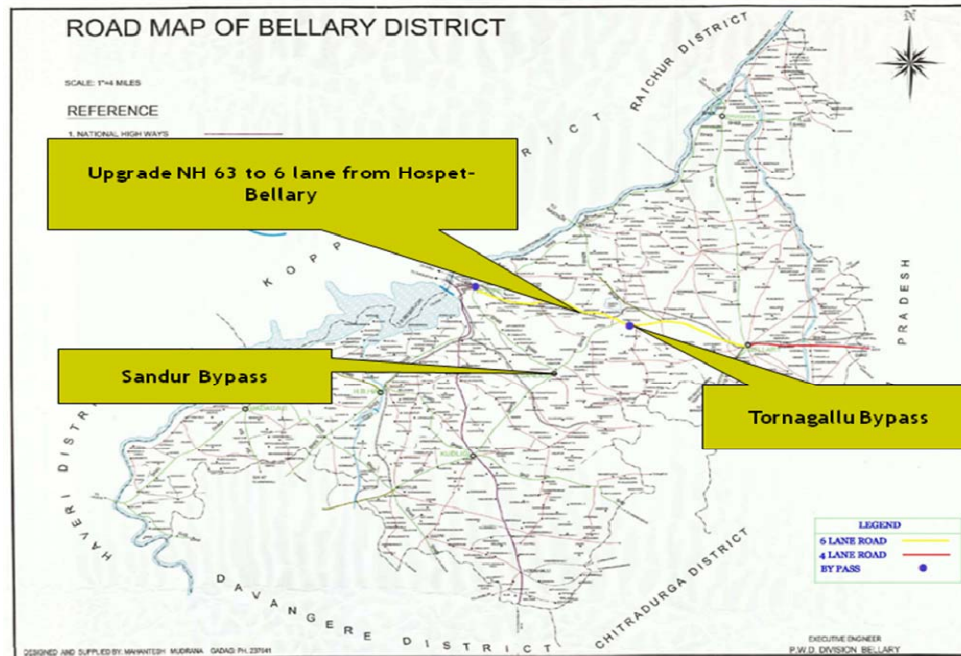


The proposed land use plan for the VADA region is also depicted in the map as shown below:



4.5.2. Proposed Projects (Roads)

As the gaps in the existing infrastructure are identified in the earlier section, the solutions are devised by identifying the projects that could help improve the existing infrastructure and develop additional infrastructure facilities required. Some of such identified projects are shown in the following maps.



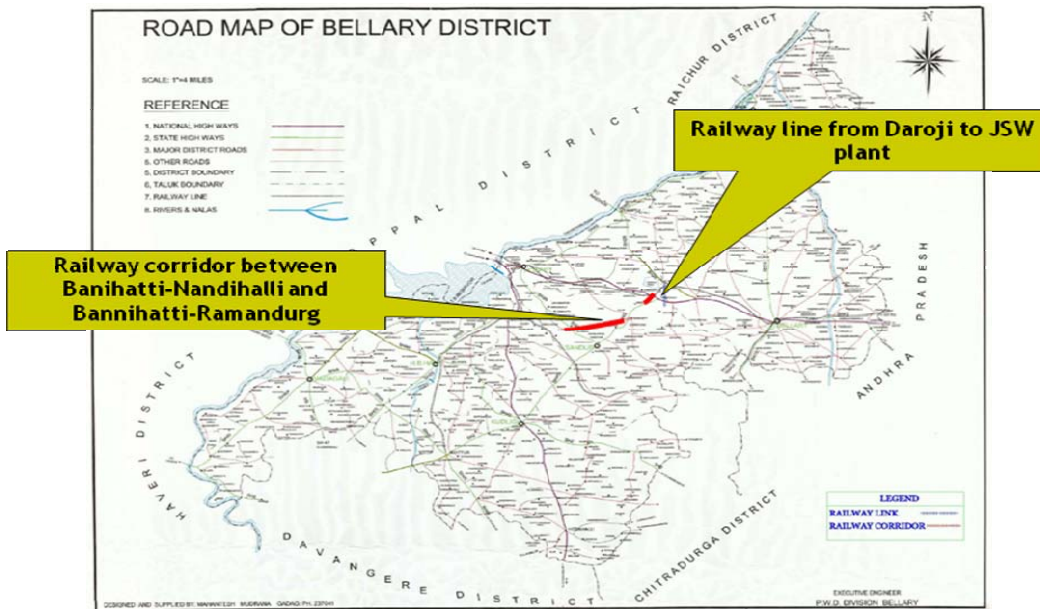
The above map picturizes the projects in road sector suggested along with the location on the map. The suggested projects are,

- Up-gradation of existing NH63 to four or six lane from Hospet – Bellary
- Development of Sandur Bypass reducing the traffic on highways
- Development of Toranagallu bypass

4.5.3. Proposed Projects (Rail)

The railway projects identified are:

- Railway corridor development between Banihatti-Nandihalli and Banihatti-Ramandurg to ease the transport of iron ores from the mining area to the processing industrial units.
- Railway line from Daroji to JSW plant

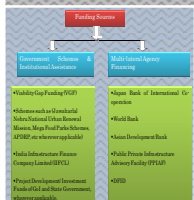


4.5.4. Proposed Projects (Others)

The other projects proposed are as follows:

- Water
 - The bulk water supply project from Tungabhadra and Almatti dam to the VADA region is required to cater to the needs of the future 1 million population (by the year 2020) and other purposes.
 - It is expected that about 45-60 MGD (Million Gallons per Day) would be required for BTPCL power plant in Kudligi.
 - The distribution of water to the remote areas is needed to be taken care by laying the water distribution lines to these areas.
 - The reservoir of 2 TMC capacity would be required to effectively utilize the rainwater.
- SWM
 - Integrated Solid Waste Management System is needed for the region
- Common Effluent Treatment Plant for industrial waste
- Power

- Power generation unit of JSW – 1000 MW
- Power generation unit of BTPCL & others – 2000 MW
- Logistic Parks
 - Near Torangallu adjacent to NH 63(between JSW plant and BTPCL)
 - Adjacent to SH 40 (near Sandur)



Infrastructure	Road			Water		
	2011	2012	2013	2011	2012	2013
Government	Green	Green	Green	Green	Green	Green
PPP	Green	Green	Green	Green	Green	Green
Other	Green	Green	Green	Green	Green	Green
Other sources	Green	Green	Green	Green	Green	Green
Other	Green	Green	Green	Green	Green	Green
Other	Green	Green	Green	Green	Green	Green
Other	Green	Green	Green	Green	Green	Green
Other	Green	Green	Green	Green	Green	Green
Other	Green	Green	Green	Green	Green	Green



ASSESSMENT OF FUNDING REQUIREMENTS

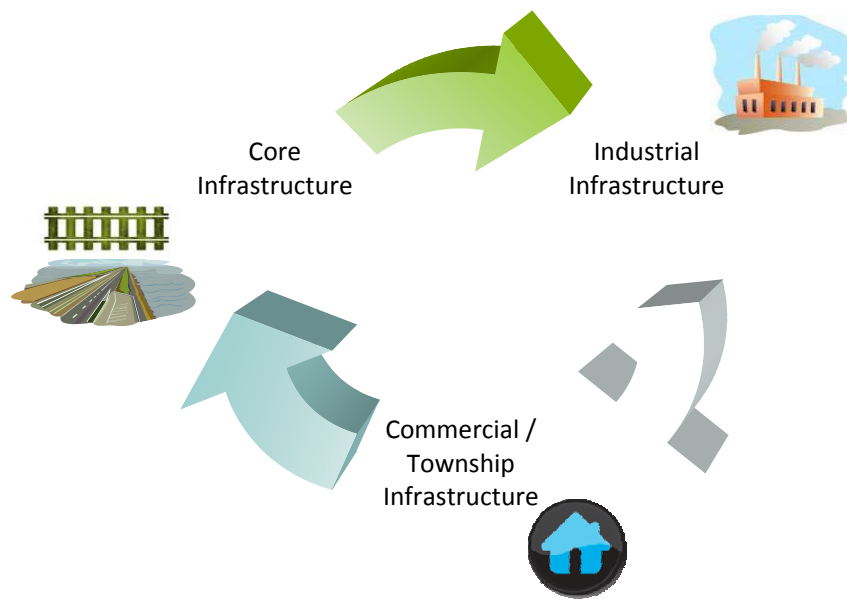
Investment Requirements – Basis for estimation – Funding options – Funding Sources - Revenue

5. ASSESSMENT OF FUNDING REQUIREMENTS

5.1. Investment Requirements for VADA

The collective investment for the development of VADA region has been arrived upon the estimation of investments required in the three major components of the infrastructure namely,

- Core Infrastructure
- Industrial Infrastructure
- Commercial / Township Infrastructure



However, the present study concentrates on the development of core infrastructure as this component address the needs of the industry and the residents.

Core Infrastructure comprises the following:

- Roads – Internal & NH widening
- Railways
- Water supply & sewerage
- Telecom
- Power distribution
- Power generation
- SWM
- Logistic Parks
- Fuel - Gas line

5.2. Basis for Estimation of Investment

The basis for the investment details proposed in this chapter are sketched below in the table:

Core Infrastructure	Assumption
Roads	NH widening & strengthening bypasses of length about 104 km Development of internal roads with Rs. 35-40 Crore per sq km investment
Railways	Total track length of 41 km with total investment of Rs. 400 Crores
Power	3000 MW generation capacity required with unit investment of Rs. 4 crores per MW generation (thermal power)
Logistic park	4 logistic park are proposed with per unit investment of Rs. 100-125 crores
Water, Telecom & Power distribution	Rs. 25 crore investment needed for service coverage of 1 sq km
SWM	Computed for the population of 10 lakh with per capita cost of Rs. 500
Fuel- gas line	Rs. 35-40 lakh per sq km

The investment details for the core infrastructure development are estimated as below:

Core Infrastructure Components	Total Investment
Internal Roads	9,000.00
NH-SH Widening &	200.00

Core Infrastructure Components	Total Investment
Bypasses	
Railway	400.00
Water supply & sewerage	1,500.00
Telecom	4,500.00
Power distribution	
Power generation	12,000.00
SWM & Industrial Effluent Treatment	500.00
Logistic Parks	500.00
Fuel - Gas line	200.00
Total	28,800.00

The total investment estimated for the infrastructure development in VADA region is as follows:

Category	Total investment (in Rs. Crores)
Internal Roads	9,000.00
NH-SH Widening & Bypasses	200.00
Railway	400.00
Water supply & sewerage	1,500.00
Telecom	4,500.00
Power distribution	
Power generation	12,000.00
SWM & Industrial Effluent treatment	500.00
Logistic Parks	500.00
Fuel - Gas line	200.00
Sub - Total	28,900.00
Environmental Management system	100.00
Rehabilitation & Resettlement charges (5% of total cost)	1,445.00
Grand Total	30,345.00

5.3. Funding Options for Core Infrastructure Development:

The funding option for the core infrastructure development is denoted in the following table with the phasing,

Infrastructure	PHASE I					PHASE II				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Internal Roads										
NH-SH Widening & Bypasses										
Railway										
Water supply & sewerage										
Telecom										
Power distribution										
Power generation										
SWM										
Logistic Parks										
Fuel - Gas line										

5.4. Funding Sources for Government Agencies

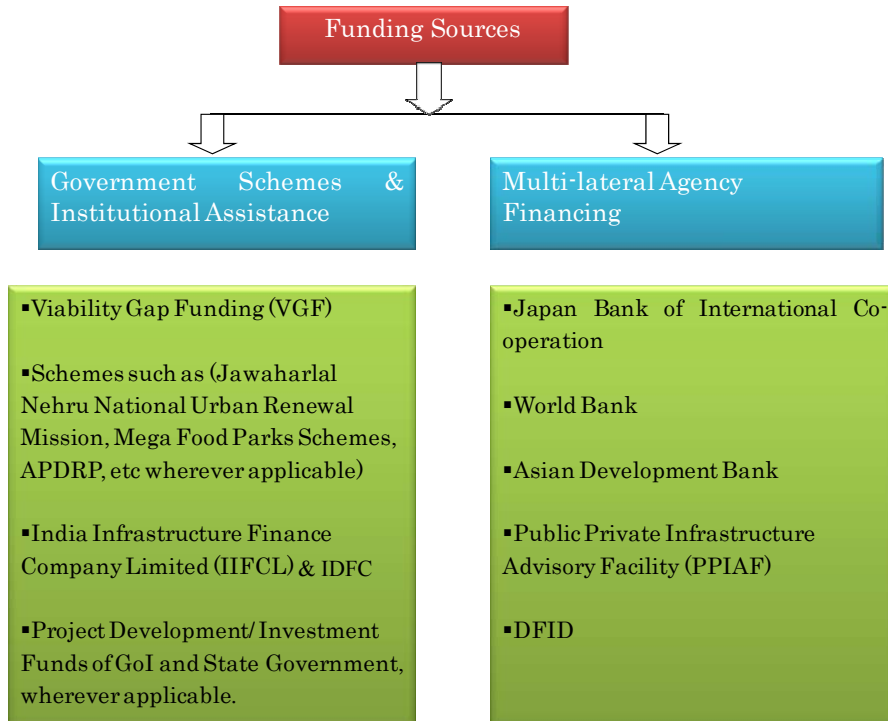
The financing by the government stakeholders for the components of the VADA industrial park development project could be undertaken through either the nodal agencies (budgetary/ extra-budgetary), Government of India schemes applicable at the point of time, as long-term finances made available by multi-lateral agencies.

Implementing projects through a public private partnership arrangement is increasingly becoming a preferred mode for infrastructure development in the country. Last few years have witnessed a significant increase in projects being promoted under PPP modes. In order to suitably structure a project for equitable risk allocation, most State Governments and Central Government agencies invest in project preparatory (project development) activities. The project development funds (PDFs) (most of them revolving in nature) set up by the Central Government and State Government, meet these requirements. These PDFs are usually funded by a combination of budgetary allocation, success fees from the project and loans/grants by multi-lateral/bi-lateral agencies. In addition, some developers/ financial institutions are also actively

setting up their own funds and assisting various government agencies in project development and recoup their costs/ profits through success fees.

5.5. Funding Sources for the Project

Schemes such as VGF aim to support projects which are marginally not viable through capital grants. More than 15 projects have obtained in-principal



approval for the same and most states are preparing projects to avail assistance under the same. In addition, there are a range of sector specific schemes such as JNNURM, Mega Foods Parks Scheme, etc to avail of development and investment funds. The eligibility terms and guidelines, and procedures for availing assistance from each of the schemes are widely published, by the respective agencies. The configuration of the components of the VADA Industrial park development Project, during the development phase, could be structured in such a manner to avail assistance from the various schemes available at that point in time.

IIFCL has been set up to provide a stimulus to long-term infrastructure financing in the country. GoI is also looking at providing part of the fiscal stimulus to revive the economy and augment infrastructure spending through IIFCL. In addition to rendering financial assistance to infrastructure projects, IIFCL would play a significant role in refinancing to banks and financial institutions for their loans given.

IDFC provides advisory services for government/ governmental agencies and corporate clients as part of its mandate. The lack of clear understanding of the conditions that a project could face in the emerging policy environment is a major constraint to project development and financing. IDFC has often been engaged in the development of framework conditions necessary for the flow of private capital into infrastructure projects through identification of best practices and by promoting policy dialogue between key stakeholders.

IDFC has recently set up three trusts:

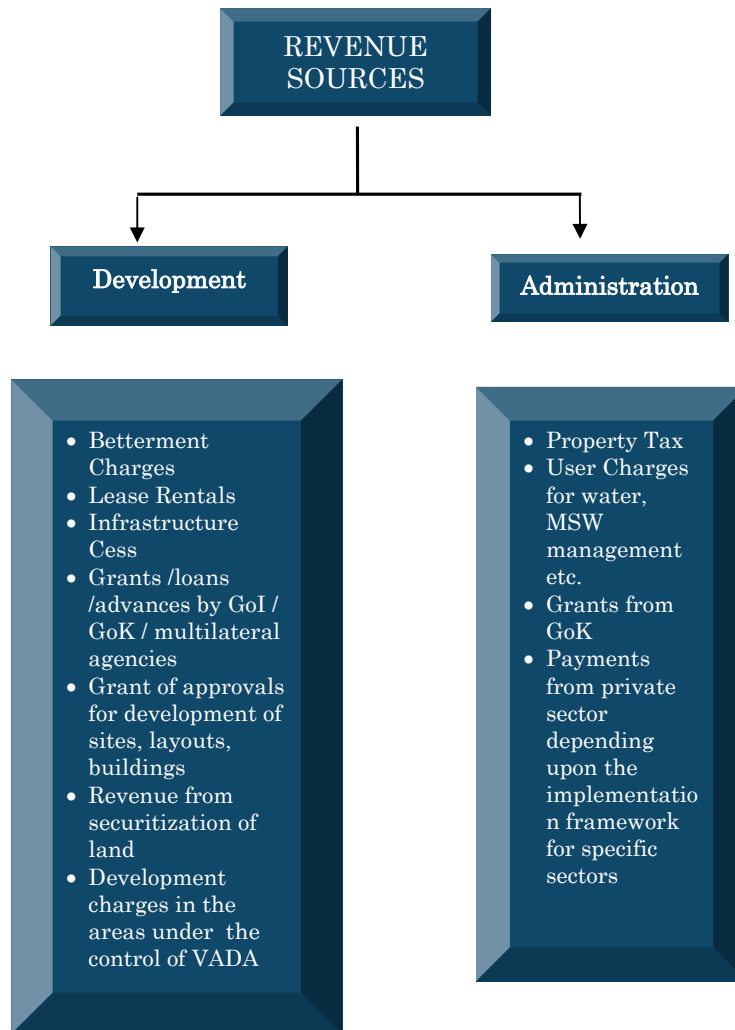
- India Infrastructure Initiative (Triple I) in partnership with Feedback Ventures Limited, a leading provider of engineering and infrastructure advisory services, in order to undertake project development activities on behalf of state (provincial) governments across the country. Several projects are under development – some under active bidding.
- India Urban and Transport Initiative (IUTI) – to develop and advise governments in urban and urban transport solutions in the wake of rapid urbanization in the country.
- India PPP Capacity Building Trust (I-Cap) – to undertake advisory, training and capacity building activities for governments and governmental agencies for developing infrastructure through PPPs.

Multilateral/Bi-lateral financing route is opted by the Central Government and State Government agencies on a sector/project specific basis. The financing mechanism usually involves standard loan covenants, and in some cases linked to sector reforms. Country specific agencies such as (JBIC, SIDA etc) primarily lend to promote their (country's) exports, imports and economic activities. In addition, World Bank & ADB are assisting various state governments in upgradation of state highways, urban infrastructure services (water & sanitation) etc. The development plans, which the states prepare, to take the Project forward could synchronise with the respective state progress/ for example connecting the corridor with state highways/ district roads, provision of water to the industrial nodes etc.

5.6. Source of Revenue:

The sources of revenue could be classified into two broad categories

- Sources during development of VADA
- Administration of the City



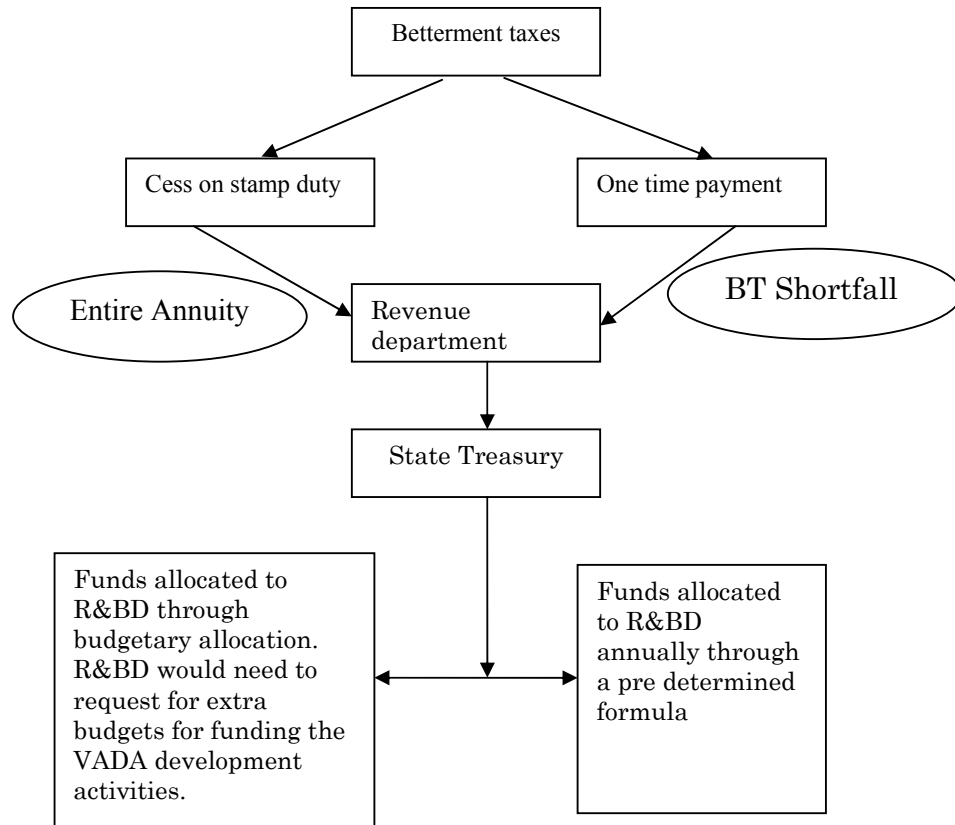
Sources during development of VADA

- Betterment Charges

The possible mode for levying betterment taxes could be the following:

- Along with Property tax: Property taxes are levied by the local authority, which is an elected body. So we foresee issues in using this mode of levying betterment taxes. Therefore, this mode could be ruled out.
- As an one-time payment: Betterment taxes could also be levied as one time charges, which could be levied through a Authority suitably enabled to do so by way of KUDA Act. The said Authority would be paid a certain fee as serve charges towards collections of taxes. The flow of funds in this transaction is explained by way of a flow chart.

- As a Cess along with Stamp duty (transaction based): Betterment taxes levied as Cess along with Stamp duty would flow to the Revenue Department. The revenues accruing so could be diverted to the R&B department after providing suitable provisions. The flow of funds in this transaction is explained by way of a flow chart.



- VADA could consider raising development charges from the land and properties in the wedge between VADA area.
- Levy of infrastructure cess
- Revenue from securitization of land
 - Securitization of Assets could be another source of revenue for VADA, wherein, the agency could securitize the land bank in its ownership through issue of bonds/securities with land as the collateral. Under this structure, VADA could securitize the land that is proposed to be developed in the later phases of development of Vijayanagar area. Subsequently, after the development of this land, it could be employed for commercial means to generate revenues, which could be used to redeem the issued securities.

- Grants or loans or advances made by the Government of India or any institution
- Grants or loans or advances made by the multilateral agencies
- Grants or loans or advances made by GoK

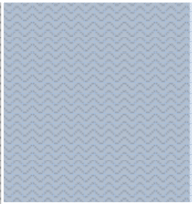
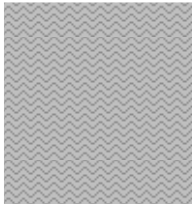
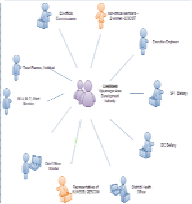
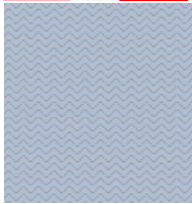
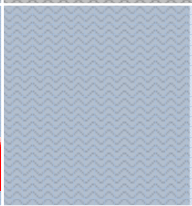
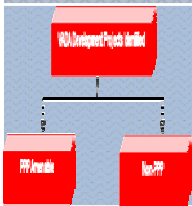
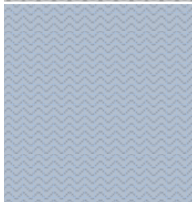
Sources during Administration of the City

- Property tax from the residents
- User charges for the basic infrastructure services
- Grants from GoK
- Payments from private sector depending upon the implementation framework for specific sectors

5.7. Expenditure Heads:

The possible expenditure could be,

- Salary expenses of the employees of VADA
- Administrative expenses
- Operation and maintenance of the basic infrastructure facilities depending upon the implementation framework for specific sectors
- Payouts to private developers depending upon the implementation framework for specific sectors

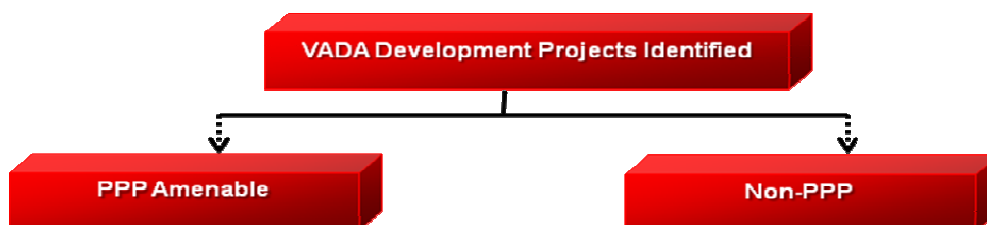


IMPLEMENTATION FRAMEWORK

*Approach to Project Implementation
Institutional Framework*

6. IMPLEMENTATION FRAMEWORK

6.1. Approach to Project Implementation

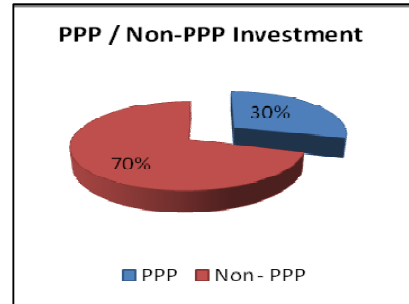


- PPP and Non-PPP projects are identified based on the scope of economic and financial viability of the project
- The funding for the Non-PPP projects would be basically provided by the government.
- The PPP projects would also have the government's contribution either as equity or quasi-equity or grant depending upon the risk appetite of government and the private developer.

Category	PPP	Non - PPP	Total investment (Rs Crore)
Internal Roads	0.00	9000.00	9000.00
NH-SH Widening & Bypasses	50.00	150.00	200.00
Railway	140.00	260.00	400.00
Water supply & sewerage	375.00	1125.00	1500.00
Telecom	1125.00	3375.00	4500.00
Power distribution			
Power generation	6000.00	6000.00	12000.00
SWM & Industrial Effluent Treatment Systems	250.00	250.00	500.00
Logistic Parks	500.00	0.00	500.00
Fuel - Gas line	200.00	0.00	200.00
Total (Rs. Cr)	8640.00	20160.00	28800.00

The above table shows the investment in core infrastructure with the PPP and Non-PPP breakup. The projects are categorized as PPP or Non-PPP or the

combination of both sector-wise. The funding for the non-PPP projects would be basically provided by the government. The PPP projects would also have the government's contribution either as equity or quasi-equity depending upon the risk appetite of government and the private developer.



Out of the total investment of Rs. 28,800 crore, about 70% would be Non-PPP funding i.e. governmental investment and 30% would be invested through PPP structure of funding.

6.2. Options for Development under PPP framework

A range of possible PPP options are set out below:

6.2.1. Service Contract:

The government procures a specific service (discrete and clearly defined) from a private operator. Payment is usually on fee per task basis. Service contracts are subject to frequent competition and usually of short term duration. It is also common to give out separate contracts for different parts of the same city to more than one operator, thereby enabling comparative competition.

6.2.2. Management Contracts

Under this arrangement, the private sector assumes the responsibility for management of core functions such as operations and maintenance to specified standards but using the staff, equipment, vehicles and buildings of the government. In such a situation the private sector brings in its management expertise, however is unlikely to make major capital expenditure and the assets remains the ownership of the government.

6.2.3. BOT/ Concession Contracts

The private operator is responsible for financing new investment over the life of the contract. The assets are nominally owned by the public entity; however, the private operator takes over responsibility of managing assets, creating new assets where required, raising finance for the new investments, providing the service, operations and maintenance, billing and collection of charges, if applicable.

The choice of a type of contract would depend on the objectives and constraints of the contracting agency.

Object Option	Technical Expertise	Managing Expertise	Operating Efficiency	Investment
Service Contract	Yes	No	No	No
Management Contract	Yes	Yes	Some	No
BOT Concession	Yes	Some	Some	Yes

6.2.4. Performance Parameters & Monitoring Mechanisms

Development of projects under PPP frameworks necessitates that need for performance based contracting that is payment only for achieved performance and quality targets. Indicators could be identified based on needs, desired levels of service delivery and ease of modification of performance levels, monitoring and feedback.

6.3. Choosing a PPP framework

Private finance represents a significant change to the status quo of public procurement, and challenges a number of interests. In developing countries, PPP programmes often trigger overseas private investment into sectors previously the exclusive domain of the state.

There is no one method for deciding which type of PPP approach will best serve the needs of a project as this depends on the project characteristics and public perception of the need for PPP. Each PPP structure has strengths and weaknesses, which must be recognized and integrated and applied only where suitable and when clear benefits and advantages can be demonstrated.

Financially free standing PPP projects have been/are being implemented in the roads (toll road concessions), ports, power, water and tourism (under ROMT Concessions) sectors. This is also extending to other areas such as railways, airports and urban services. While many of these projects require no financial support of any kind from the government, some of them may require some capital support - which then could become the bidding parameter on the basis of which projects get awarded. One example of such project used in the area of urban services - disposal of solid waste in engineered landfills against payment of tipping fees by the local authority.

The following table elaborates upon the kind of expertise is a must requirement for that specific contract. For e.g for a service contract it is must to have a technical expertise and for a management contract both technical as well as managing expertise are mandatory. Similarly for lease it is important to have technical, managing and operating efficiency whereas investment is not criteria while in BOT technical expertise, managing expertise and investment in bulk all are equally important.

Each framework has its own level of requirements in terms of political commitment, cost-covering tariffs, regulatory framework and information. The following table elaborates upon the level of each requirement for that particular framework.

6.4. Merits and Demerits of various Options

The merits and demerits of the possible PPP options discussed above are as follows:

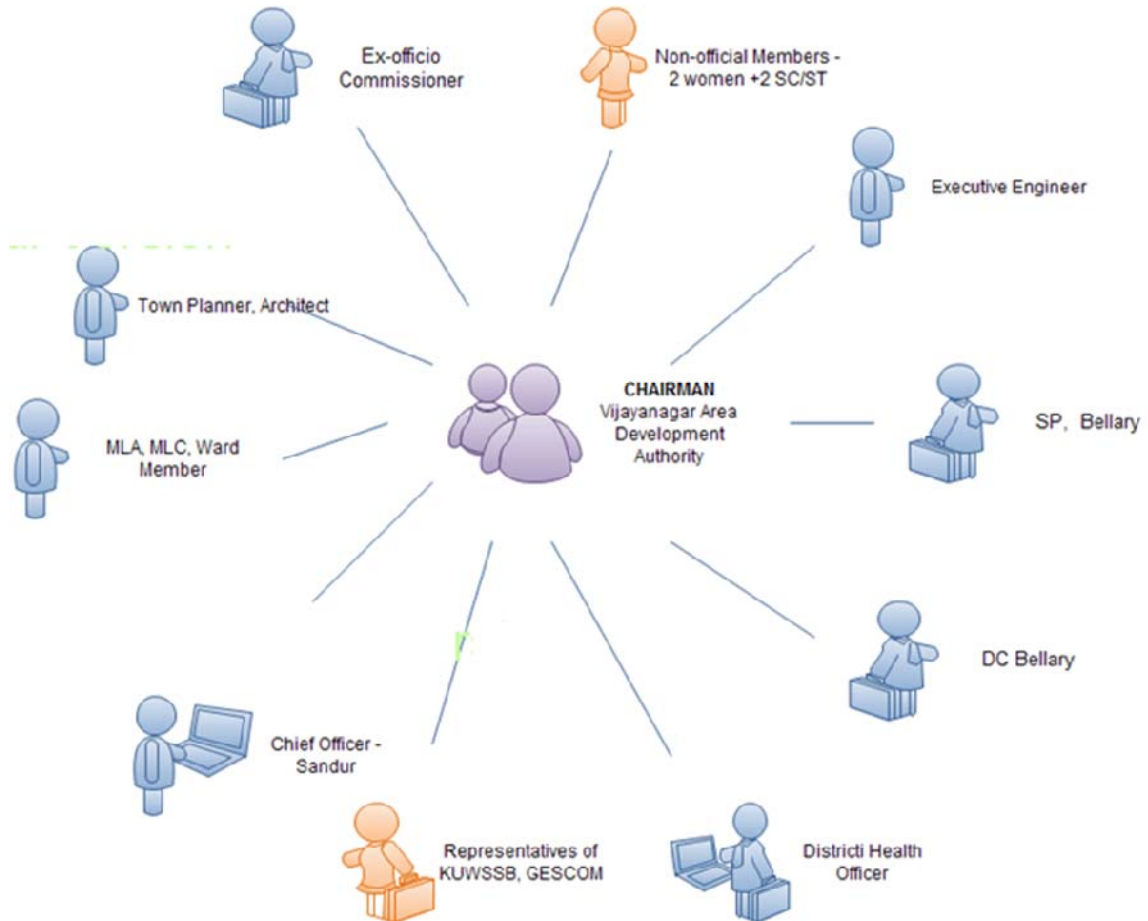
No.	Project structuring option	Merits	Demerits
1.	Outright sale of land	Immediate realisation in cash, and the same could be used for alternate works / projects	Government agency (GA) will forego the rights on land and would also lose all regulatory control on the property. This structure could result in sub-optimal utilisation of the land. Past experience indicates that bidders discount the cash flows at much more than the weighted average cost of capital (WACC)
2.	Sale of developed property	Assured revenue form sale of developed property	GA will forego the rights on land GA would not be able to capture the buoyancy of market Past experience indicates that bidders discount the cash flows at much more than the WACC
3.	JV structure	GA could realise a portion of the revenues upfront.	GA loses ownership over part of the site area. Some portion of O&M responsibility and marketing responsibility transferred to GA. Bidders tend to discount at a higher rate than WACC. Allocation of space a major issue. Possibility

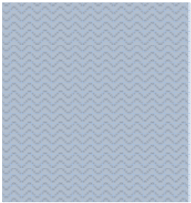
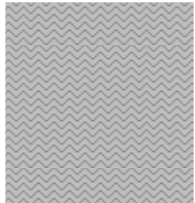
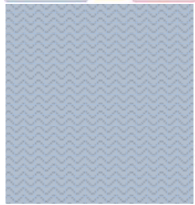
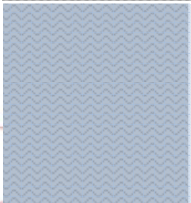
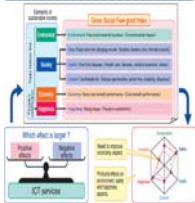
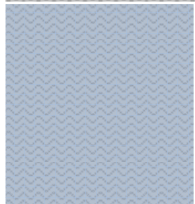
			of GA's share being of inferior quality higher In case of pre-termination, handover could lead to prolonged disputes.
4.	Concession structure	Ownership of the property vests with ga. Bidder is allowed flexibility to develop the area in accordance with GA plans and in adherence to the minimum requirements set by GA. The land and the facilities developed on it would be transferred back to bmp at the end of the concession period Risk of time bound completion and revenue risk is transferred to the bidder	Time for development may increase slightly All risks are borne by bidder and may require higher returns
5.	Build-own-operate-transfer	Bidder is allowed mortgage of the land and the flexibility to develop the area in accordance with plans of GA and in adherence to the minimum requirements set by GA. The land and the facilities developed on it would be transferred back to GA at the end of the concession period Risk of time bound completion and revenue risk is transferred to the bidder	Time for development may increase slightly All risks are borne by bidder and may require higher returns

6.5. Institutional Framework for VADA Industrial Park

The Vijayanagar Area Development Authority thus formed as per the government notification dated 29.06.2009 under the provision of KUDA (Karnataka Urban Development Authority) Act constitutes the following members, illustrated in the figure, as per the same notification.

As per the notification, Deputy Commissioner of Bellary district would hold the office of Chairman till the Ex-officio is nominated by the government. The VADA office would also constitute the representatives of KUWSSB (Karnataka Urban Water Supply & Sewerage Board), GESCOM (Gulbarga Electricity Supply Company). The other members are MLA, MLC, Ward Member, District Health Officer, Superintendent of Police-Bellary, Executive Engineer, Chief officer-Sandur, Town Planner, Architect.





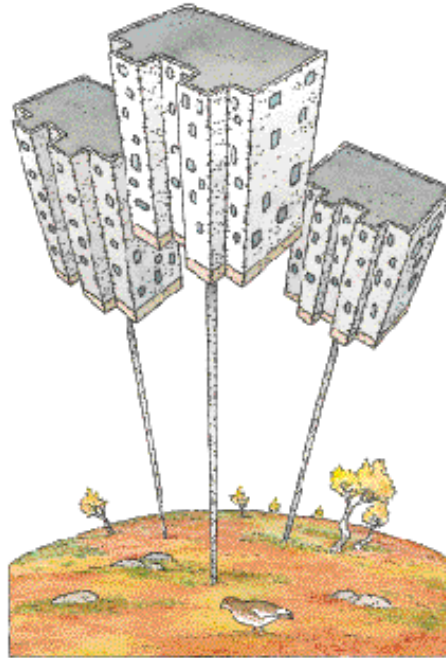
ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT

Manufacturing and processing facilities not only provide the city with the essential commodity inputs but also provide the means of living for the populace.

7. ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT

7.1. Need of the Study

Manufacturing and processing facilities not only provide the city with the essential commodity inputs but also provide the means of living for the populace. Sometimes unplanned decisions for industrial development lead to an adverse impact on the local environment at costs which are much higher than the benefits actually accrued. In view of the deteriorating environmental conditions in and around industrial townships, it is necessary to account for the environment while planning for VADA region. The Environmental Impact Assessment shall have the following objectives:

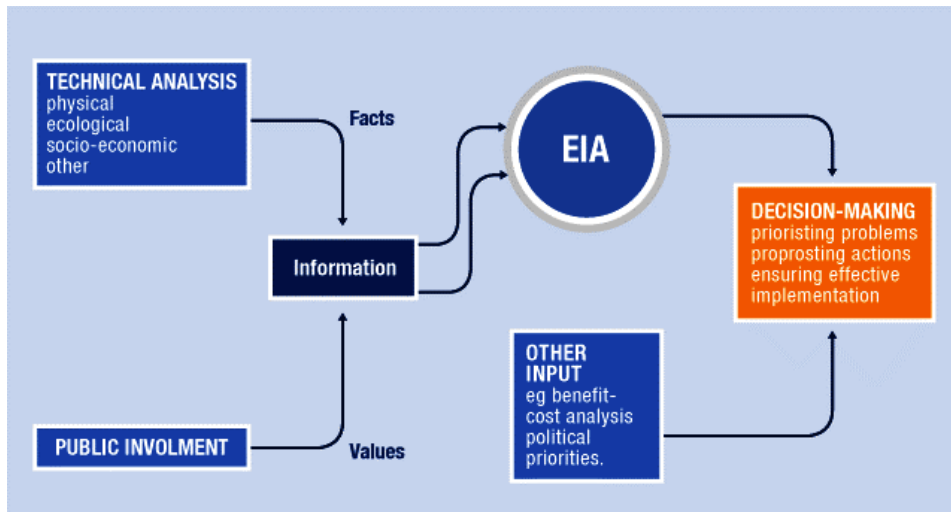


- Predict environmental impact of projects
- Find ways and means to reduce adverse impacts
- Shape project to suit local environment
- Present the predictions and options to the decision-makers

7.2. Methodology for Environmental Impact Assessment (EIA)

The evaluation of environmental impacts would be carried out, as per the guidelines issued by Ministry of Environment and Forest (MOEF), through detailed Environment Impact Assessment (EIA) covering following aspects:

- Establishing environmental baseline condition for the project influence Area through primary and secondary data collection (terrain, physical features and geology, biodiversity, ecology/terrestrial and aquatic flora and fauna, climatic conditions/meteorology, quality of ground/surface water sources, air quality ambience, noise, surface erosion/ siltation/vegetation, tree cutting/ reserved forest/ natural habitat, coastal regulation zone/flood line, mangrove ecosystem etc);



Steps involved in Environmental Impact Assessment

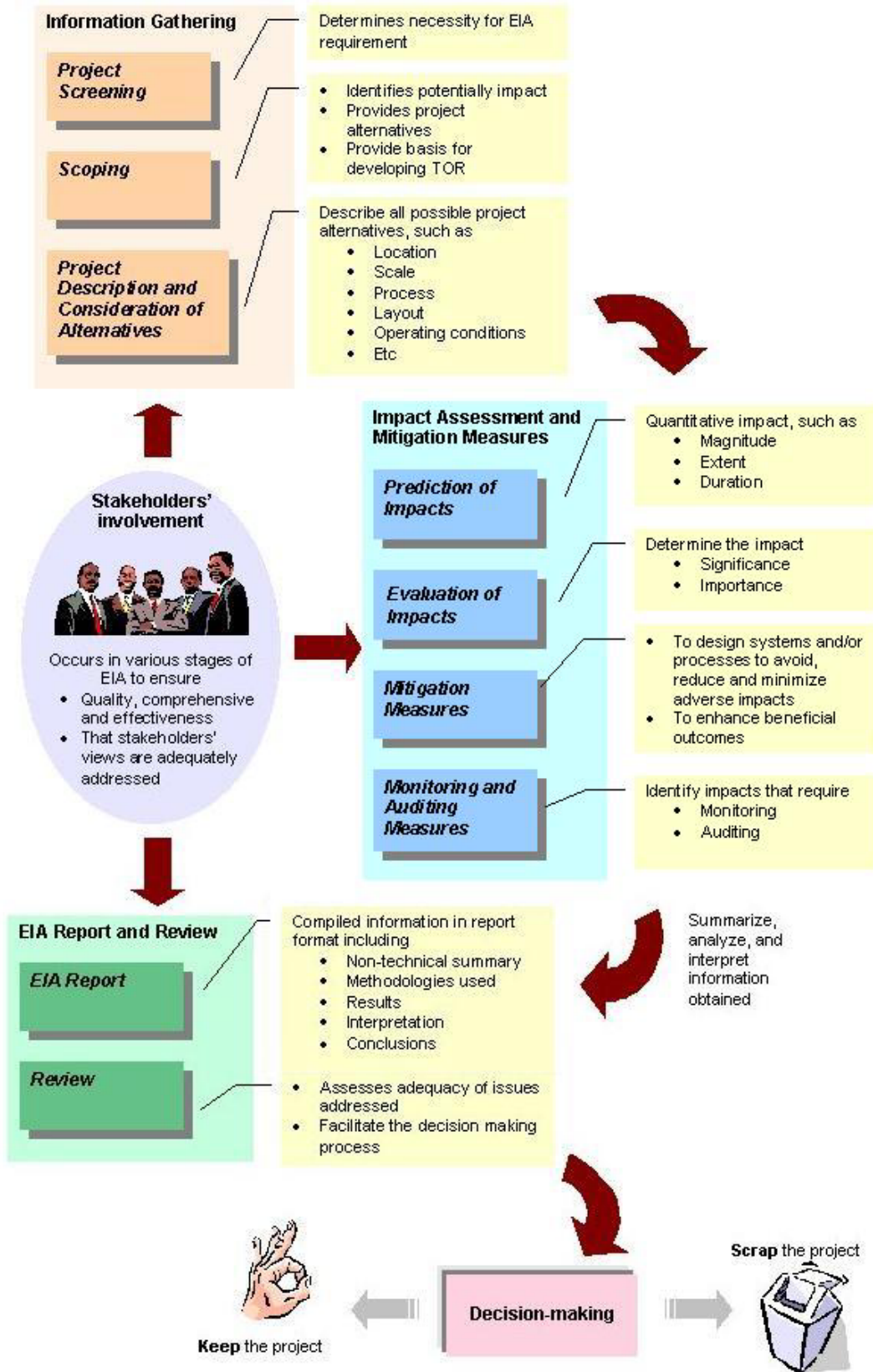
- Identifying and assessment of potential impacts that would be associated with various stages of construction, operation and management of industry and infrastructure projects (viz. impact on air quality, noise level, effect on natural drainage of rivers/streams/ surface run-off, water conservation/contamination of surface and ground water with effluent discharge, storage and transportation of generated industrial/hazardous waste, threats to biodiversity, ecological balance, terrestrial and aquatic flora and fauna, human health and safety etc);
- Evolving suitable mitigation measures for various environmental attributes identified during construction, operation and management phase to ensure effective environment protection mechanism in the project influence region;
- Preparation of Environmental Management Plan with detailed technical specifications for implementing required mitigation measures institutional framework for monitoring the program of implementation and for reporting to the designated agencies to establish accountability.

7.3. Proposed Approach

Development of VADA envisages following approach to ensure environment protection while developing high intensive economic activities:

- Adherence to formal environmental management systems such as ISO 14000;
- Adherence to National environment policy, environment protection guidelines, rules & acts;
- Environmental Planning and Management;

- Emphasis on ecological designs, cleaner production technologies and resource recovery (Green Building Designs, optimal energy usage, use of renewable energy, recycling/ re-using techniques and others);
- By-product exchange (industrial ecology);
- Public communication and participation;
- Ensure provision of requisite environmental infrastructure with appropriate design and integration with industrial infrastructure:
- Water treatment & distribution, sewage collection, treatment & disposal, industrial waste collection and treatment, solid waste collection, transportation and treatment, hazardous waste collection and disposal, environmental monitoring, analytical services (testing labs), environmental audit, multi-material resource recovery, training and education, information centre, emergency preparedness & response.



EIA Process

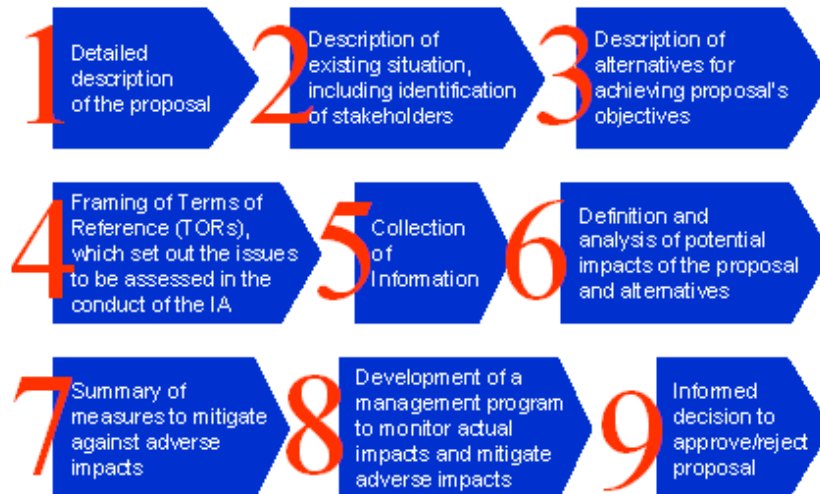
7.4. Resettlement and Rehabilitation Aspects for VADA Region

It is envisaged that new initiatives would be identified in the available land parcels with respective state/central government agencies, vacant land, waste land, mono-crop zones and away from reserve forests/heritage sites/sanctuaries etc so that the impacts related to social aspects would be minimized.

Consultants, being appointed for preparation of development plans for various investment nodes in VADA Region, would undertake comprehensive assessment of requirements and estimate impacts of land acquisition, as detailed in following sections, to suggest suitable measures in confirmation with the provisions envisaged in National Resettlement and Rehabilitation Policy-2007 (or) other best practices that are being followed across the country for smooth implementation of various industry/infrastructure initiatives in VADA Region.

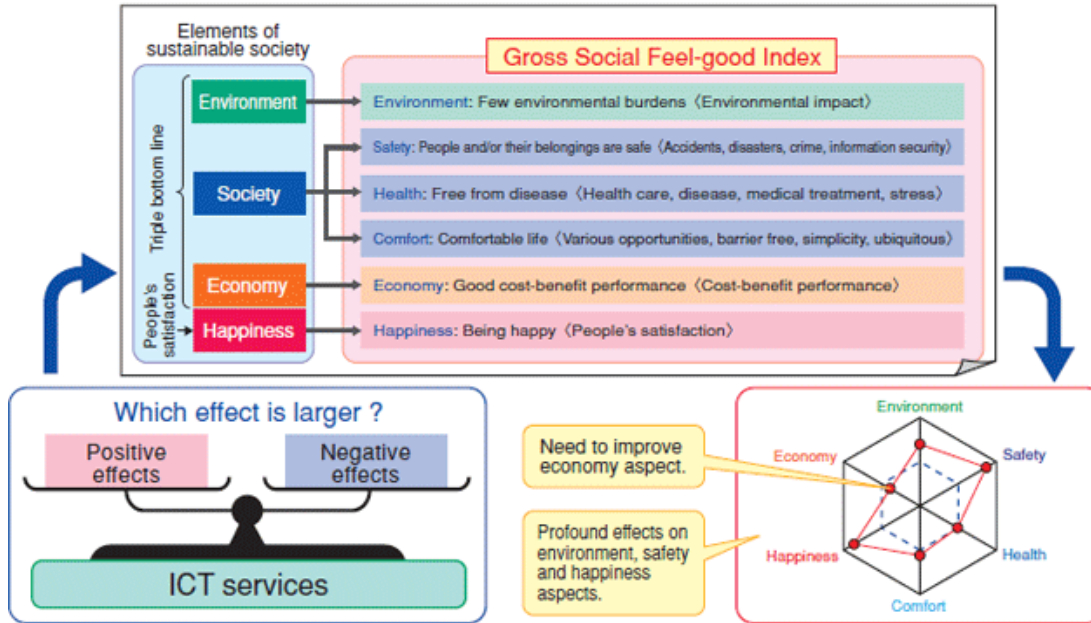
7.5. Social Impact Assessment (SIA)

Social Impact Assessment (SIA) is a methodology used for examining social change due to external sources, especially specific development projects, but also government policies, technological change, and social processes - anything that has a social impact.



Steps involved in Social Impact Assessment

The evaluation of social impacts for development of special investment nodes in VADA Region would be carried out, as per the guidelines of National Resettlement and Rehabilitation Policy, through detailed Social Impact



Assessment (SIA) covering following aspects briefed in the table given below:

Aspects to be covered under Social Impact Assessment		
1.	Demographic changes	Establishing the number of project affected households/ persons along with their socio-economic profile and occupational distribution, details of land use (agriculture, grazing, plantation, waste land, commercial, residential/ habitation etc) and ownership of such land parcels to be acquired (public/private), details of structures (permanent / temporary structures) to be acquired/demolished, details of assets and infrastructure through requisite primary surveys and secondary sources for the project influence area.
2.	Economic changes	Carrying out detailed analyses for estimating the quantum of associated impacts for project affected households/ persons, loss/ opportunity of employment, income/revenue generating sources, affected land under irrigation and resulting impact on agricultural produce, cost of land acquisition/ demolition of structures etc);
3.	Relocation and Rehabilitation	Identifying strategies for minimizing the impacts with respect to displacement of people and the total area to be acquired for the project by devising alternative project plans, identifying other potential sites, utilizing available technological choices and a combination of the same; ensure adequate rehabilitation

		<p>package, provide a better standard of living; Devising an action plan for resettlement and rehabilitation for the project influence region along with an effective institutional framework for carrying out the requisite tasks in a transparent manner and conducting public hearing.</p>
--	--	---



STATUTORY & LEGAL FRAMEWORK

Vijayanagar Area Development Authority (VADA)– constituted under the provision of Section 3(1) of Karnataka Urban Development Authority (KUDA) Act, 1987 as per notification issued by GoK dated 29.06.09

8. STATUTORY & LEGAL FRAMEWORK

8.1. Karnataka Urban Development Authorities Act, (KUDA Act), 1987

The Karnataka Urban Development Authorities Act, (KUDA Act), 1987 provides for the establishment of Urban Development Authorities (herein after referred to as Authority) for the planned development of major and important urban areas in the State.

8.1.1. Constitution and incorporation of the Authority

As per Section 3 of KUDA Act, Government may by notification constitute an Urban Development Authority for the development of an urban area. The Authority shall be a body corporate having perpetual succession and a common seal and subject to the provisions of this Act. The Authority has the power to enter into contracts and sue and be sued in its own name.

The Authority constituted shall consist of a Chairman, an Assistant Director of Town Planning, an Executive Engineer, Members of Karnataka Legislative Assembly and other representatives including certain Ex-officio members.

Section 9 of the KUDA Act, empowers the Authority to appoint various committees for the purposes of the Act.

The State shall also appoint a Commissioner who shall be the Chief Executive and Administrative officer of the Authority. The commissioner has the power to carry into effect the resolutions of the Authority.

8.1.2. Development Scheme

Power of Authority to undertake works and incur expenditure for development²:

Section 15 of the KUDA Act, empowers the Authority to draw up detailed Schemes for the development of an urban area and undertake any work and expenditure for framing and execution of development scheme, with the previous approval of the State Government.

The Authority may also take up any new or additional development schemes at its own initiative.

Particulars to be provided for in a development scheme³

² Section 15 of KUDA Act

Every development scheme shall with in the area comprised in the scheme, provide for the acquisition of any land, construction and reconstruction of building, drainage , water supply, park and all other facilities, civic amenities as per section 16 of the KUDA Act for the execution of the scheme.

Procedure on completion of scheme⁴.-

The Authority shall draw up a notification for the Development scheme comprising of all the details and particulars of the scheme, a statement specifying the land which is proposed to be acquired and of the land in regard to which a betterment tax may be levied. A copy of the said notification shall be sent to local authority, which shall with in thirty days from the date of receipt thereof, forward to the Authority for transmission to the State Government. The Authority shall publish the said notification in accordance with the procedure set out in section 17 of the KUDA Act.

Sanction of scheme.-

The Authority after the publication of the scheme and service of notice as provided in section 17 of the KUDA Act, shall submit the proposal with any modification if required, full particulars of the scheme, reason for modification, complete plan and estimates of the cost of execution of the scheme, land proposed to acquired and such other particulars provided in section 18 of the KUDA act and as may be prescribed. After considering the proposal submitted to it the Government may, by order, give sanction to the scheme.

Upon sanction, declaration to be published giving particulars of land to be acquired.-

The State Government upon sanction of the scheme shall publish in the official gazette a declaration stating the particulars and details of the land to be acquired for the execution of the development scheme.

The declaration shall state the limits within which the land proposed to be acquired is situate the purpose for which it is needed, its approximate area and the place where a plan of the land may be inspected.

³ Section 16 of KUDA Act

⁴ Section 17 of KUDA Act

The said declaration shall be conclusive evidence that the land is needed for a public purpose and the Authority shall, upon the publication of the said declaration, proceed to execute the scheme.

If at any time it appears to the Authority that an improvement can be made in any part of the scheme, the Authority may alter the scheme for the said purpose and proceed to execute the scheme as altered.

If the altered scheme exceeds by a greater sum than five per cent of the estimated cost of executing the scheme as sanctioned, the Authority cannot execute the altered scheme without the prior approval of the Government,

The Authority shall not denotify or reconvey any land included in the scheme without the specific orders of the Government.

The Authority shall not allot any land to any individual, organization or authority, the civic amenity area earmarked in the scheme without the orders of the Government

8.1.3. Acquisition of Land

Section 35 of the KUDA Act, empowers the Authority to enter into agreement with owner of any land or any interest therein, situated within the urban area for the purchase of such land. Further land may also be acquired under the provision of the Land Acquisition Act, 1894.

Betterment Tax

- Power of the Authority to levy of betterment tax

Where, as a consequence of execution of any development scheme, the market value of any land in the area comprised in the scheme which is not required for the execution thereof has, in the opinion of the Authority, increased or will increase, the Authority shall be entitled to levy on the owner of the land or any person having an interest therein a betterment tax in respect of the increase in value of the land resulting from the execution of such scheme. The Authority is empowered to assess the amount of the betterment tax by serving notice to every person or to the successor in interest of such person in respect of the land to be assessed.

When the assessment proposed by the Authority is accepted by the person concerned within three months such assessment shall be final.

(b) If the person concerned does not accept the assessment made by the Authority or fails to give the Authority the information required by the Authority within three months, the Authority shall make a reference to the District Court having jurisdiction for determining the betterment tax payable by such person inform the Authority in writing whether or not he accepts the assessment

- Manner of payment of betterment tax

The betterment tax determined under section 21 of the KUDA Act shall be paid within such time and in such number of installments not exceeding five or as may be specified by the Government together with interest at such rates as may be prescribed.

- Recovery of betterment tax.-

The Authority is entitled to recover betterment tax due from the person liable to pay betterment tax and has defaulted to do the same, in the manner provided by the Karnataka Municipal Corporation Act, 1976 or the Karnataka Municipalities Act, 1964 for the recovery of taxes and if the said money is not so recovered.

8.1.4. Property and Finance

Development Fund and the items to be credited to such fund⁵

The rents, profits, and sale proceeds of all lands, buildings and other property vested in or acquired by the Authority under this Act shall be credited to a fund to be called "Urban Development Fund".

There shall also be credited to the said Fund,-

- Any amount borrowed by the Authority for development;
- Such sums as may be placed by the Government at the disposal of the Authority from time to time for the purpose of this Act;
- such contributions as a local authority may, be called upon by the Government to make after consideration by the Government of the relief or addition to the resources of the local authority accruing or likely to accrue as the result of development schemes undertaken by the Authority; and
- Any betterment tax and other sums due and paid to or recovered by the Authority under the provisions of this Act.

⁵ Section 41 ibid

Authority shall be entitled to levy on the owner of the land or any person having an interest therein a betterment tax in respect of the increase in value of the land resulting from the execution of such scheme.



KEY ISSUES

Water – Land – Pollution-Funding

9. KEY ISSUES

9.1. Land acquisition

The acquisition of the land is the primary issue for any infrastructure development projects in the country. The land acquisition issue is also intertwined with the ownership of the land, usage of the land and also the terrain. Hence the land acquisition would be the complex exercise for such infrastructure development projects. These factors need to be taken into consideration during land acquisition for the development purpose.

9.2. Availability of Water

The major source of water supply for the region is Tungabhadra Dam. TungaBhadra dam is constructed across river Tungabhadra, a tributary of River Krishna. The total Krishna River Industrial quota being 5.0 TMC (Thousand Million Cubic ft), Jindal alone gets 2.6 TMC.

The other source of water supply in the region is Daroji lake, which is not sufficient to cater to the needs of the upcoming industrial units in the region. The alternative source available is the Almatti Dam. But the major issue is bulk water supply distribution which involves bringing the water from the dam situated in Bijapur district to the VADA region.

9.3. Funding sources

The total investment for the development of infrastructure facilities in VADA being estimated to be approximately Rs.30,000 crores. Out of this, the funding for non-PPP would around 70% of the total investment requirement which is about Rs. 20,000 crores, which would be majorly funded by the Government of Karnataka. Hence the sources of such governmental funding needs to be clearly identified which could be budgetary allocation, tax levies etc.

9.4. Environmental Issues

The Karnataka State of Environment Report has identified the VADA (Bellary-Hospet) regions as one of the hotspots of future mining activities in the State. The report states that the increase of mining activities in Bellary district will lead to further deterioration of water quality of Tungabhadra River and various streams, reservoir and ponds of the region. It is likely to raise the suspended particulate matter leading to adverse health impacts.

The existing infrastructure facilities have been affected due to the mining and other industrial activities in the region. The modern technology with improved transportation of heavy capacity has deteriorated the road infrastructure.

Such environmental deteriorations would increase in future, as more industrial establishments are anticipated in this region. This would add onto the existing environmental problem. Thus Environmental Impact Assessment (EIA) and also the proper mitigating measures has to be carried out before any development project either industrial or non-industrial activities