

EXECUTIVE SUMMARY

Draft Comprehensive Development Plan (CDP) for the area under the jurisdiction of Sambalpur Development Authority (SDA)

As per Section 9 of the Orissa Development Authority Act 1982, it is the statutory duty of the development authority to prepare the Comprehensive Development Plan (CDP). The Comprehensive Development Plan (CDP) shall, define the various zones into which the land covered by the Comprehensive Development Plan may be divided for the purpose of development and indicate the manner in which the land in each zone is proposed to be used and the stages by which any such development shall be carried out. It shall serve as a basic pattern of frame work within which the Zonal Development Plan of the various zones are prepared.

As part of scope of work to prepare Comprehensive Development Plan (CDP) (Vision 2030) for the area of Sambalpur Development Authority (SDA), following tasks have been accomplished.

List of Tasks Accomplished for CDP

1	Concept Report Submitted	January 2009
2	MOU Signed	January 2009
3	Inception Report submitted	March 2009
4	Status Survey Report Part-I submitted	July 2009
5	Status Survey Report Part-II submitted	May 2010
6	Status Survey Report Part-III submitted	June 2010
7	Existing Landuse Map from satellite imageries submitted	March 2011
8	Existing Land use map print from the GIS data (cadastral maps showing existing land use) in (1:2000 scale) submitted	January 2012

Conceptualization of CDP

Sambalpur, Burla and Hiraikud urban centers, along with their hinterlands (67 villages), have grown over the time having separate identities and distinct growth potentials. Being contiguous and, to some extent, inter dependent to each other, growth prospects of the three urban centers deserve to be studied simultaneously and analyzed for exploring integrated development of the concerned urban region. For considering all physical and socioeconomic aspects of the urban region and exploring its meaningful role in balanced regional development preparation of Comprehensive Development Plan for Sambalpur, Burla, Hiraikud and 67 Villages Development Area has become necessary. The Development Plan would guide the physical development and channelize harmonious growth of the urban centers, on exploring individual growth potentials of each of the urban centre. The regional setting of the SDA area with strong linkages and communication with the city of Bilaspur, Raipur, Cuttack-Bhubaneswar-Puri, Rourkela-

Howrah, Sundergarh etc. provides a vast potential for the development of Sambalpur-Burla-Hirakud area as commercial cum educational cum recreational cum small scale industrial hub.

Significance of study area

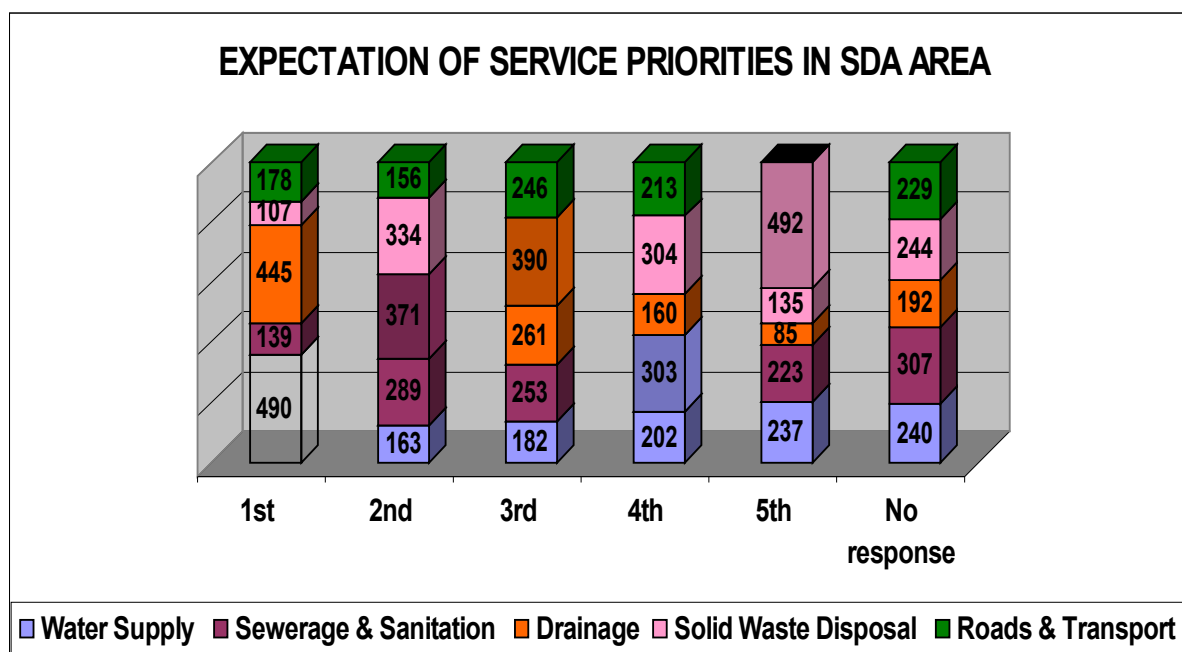
Hub of Administrative – Socio-Cultural – Business - Education – Tourism Potential :

SAMBALPUR	BURLA	HIRAKUD
<ul style="list-style-type: none"> • Influence over surrounding villages • NH, SH, Major roads provide linkages in 5 directions • Pilgrimage and Site Seeing Spot, Leaning Temple of HUMA • Badasadak and Sansadak from Kunjelpada chowk to Municipal Building has proud Heritage • Industries 	<ul style="list-style-type: none"> • University • Schools • Sports Activities 	<ul style="list-style-type: none"> • Dam • Power House • Reservoir • Industries

STATUS SURVEY REPORTS OF THE SDA AREA

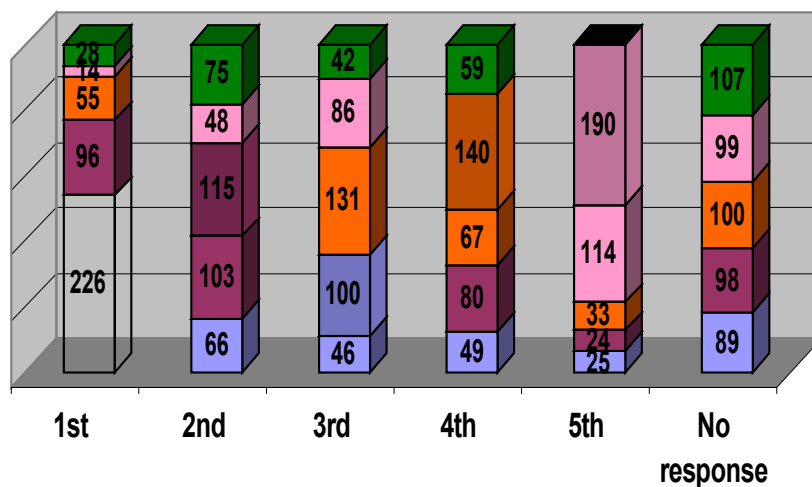
The status survey report of the SDA area was prepared and submitted in three Parts.

As per the household survey the expectation of service priorities of the people in the SDA area and of the slum population are shown in the charts below.



Note: Figures state the response of persons interviewed

EXPECTATION OF SERVICE PRIORITIES IN SLUMS OF SDA AREA



■ Water Supply ■ Sewerage & Sanitation ■ Drainage ■ Solid Waste Disposal ■ Roads & Transport

Note: Figures state the response of persons interviewed.

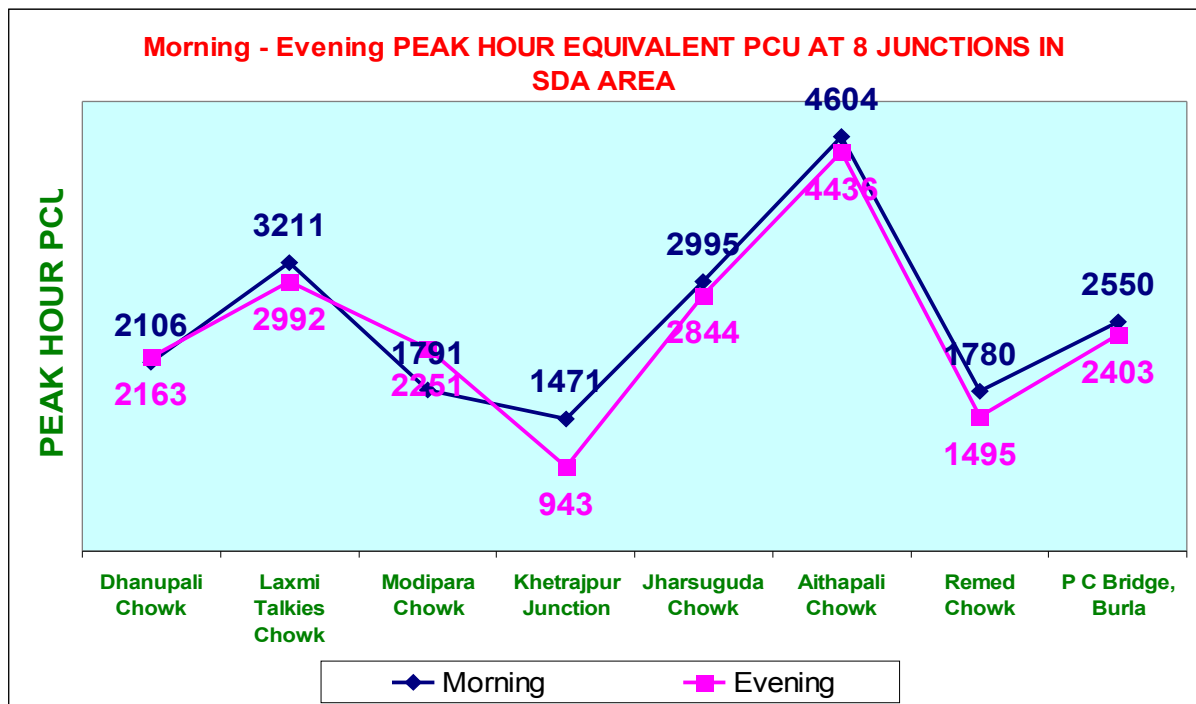
Traffic and transportation survey was also done.

At Sambalpur, the traffic volume count survey at 8 intersections / locations were carried out on normal working days for the time interval between morning 9-00 a.m. to 1.00 p.m. and evening 3-00 p.m. to 7-00 p.m. for one day as shown in the Table below.

Table: Location of Traffic Survey

	Location Name	Date & Day of Survey	
1	Dhanupali Chowk	31.12.2009	Thursday
2	Laxmi Talkies Chowk	30.12.2009	Wednesday
3	Modipara Chowk	29.12.2009	Tuesday
4	Khetrajpur	01.01.2010	Friday
5	Jharsuguda Chowk	02.01.2010	Saturday
6	Aithapali Chowk	04.01.2010	Monday
7	Remed Chowk	04.01.2010	Tuesday
8	P C Bridge Junction, Burla	06.01.2010	Wednesday

Morning and evening peak hour volume count at 8 junctions of Sambalpur in equivalent PCU (Passenger Car Unit) is depicted in chart below.



Development Potentiality of the SDA Area

Sambalpur-Burla-Hirakud region being the hub of administrative – socio cultural-educational - tourism activities of Orissa have a rich potential for development.

- Sambalpur city is an administrative cum commercial & business hub of the western region of the Orissa state. It has the influence on the surrounding villages of the region.
- Two national highways, state highway and the major road provide the appropriate linkages in different five directions towards the major towns. Sambalpur also boasts of a pilgrimage-cum-sightseeing spot.
- Over a period of time, the town of Burla across the Mahanadi River has developed as an educational hub. It hosts the Sambalpur University, the VSS Medical College and the University College of Engineering (UCE Burla), besides numerous schools and colleges. There is a vast potentiality for the development of this town as an education and sports center.
- Similarly, Hirakud town is an industrial town famous for the Hirakud Dam and the HINDALCO factory. Due to the operation of the multi-purpose Hirakud Dam Project the importance of Sambalpur increased manifold. This town has a vast untapped potential for the development of water resources and tourism. This can be developed as a center for water management, irrigation, power generation, recreational areas, tourism etc.
- The regional setting of Sambalpur and Jharsuguda provides a perfect setting for the development of this corridor on the basis of twin city concept.
- Sambalpur town has developed in a unplanned manner. Its existing infrastructure status does not provide amenities for modern living.. A well planned strategically located SATELLITE TOWNSHIP in the Sambalpur Development Authority area in the vicinity of the Sambalpur – Jharsuguda corridor has a potential to develop which

is proposed in the CDP.

With such background and potentialities for development, this SDA area stands at a major crossroad. At present the central area of Sambalpur is the only developed area in the SDA having not much integration with the towns of Burla and Hirakud. Separate master plans were prepared for Sambalpur, Burla NAC and Hirakud NAC. The CDP will thus be an attempt to analyze such vital issues and frame realistic guidelines and action plans for achieving a balanced and planned development.

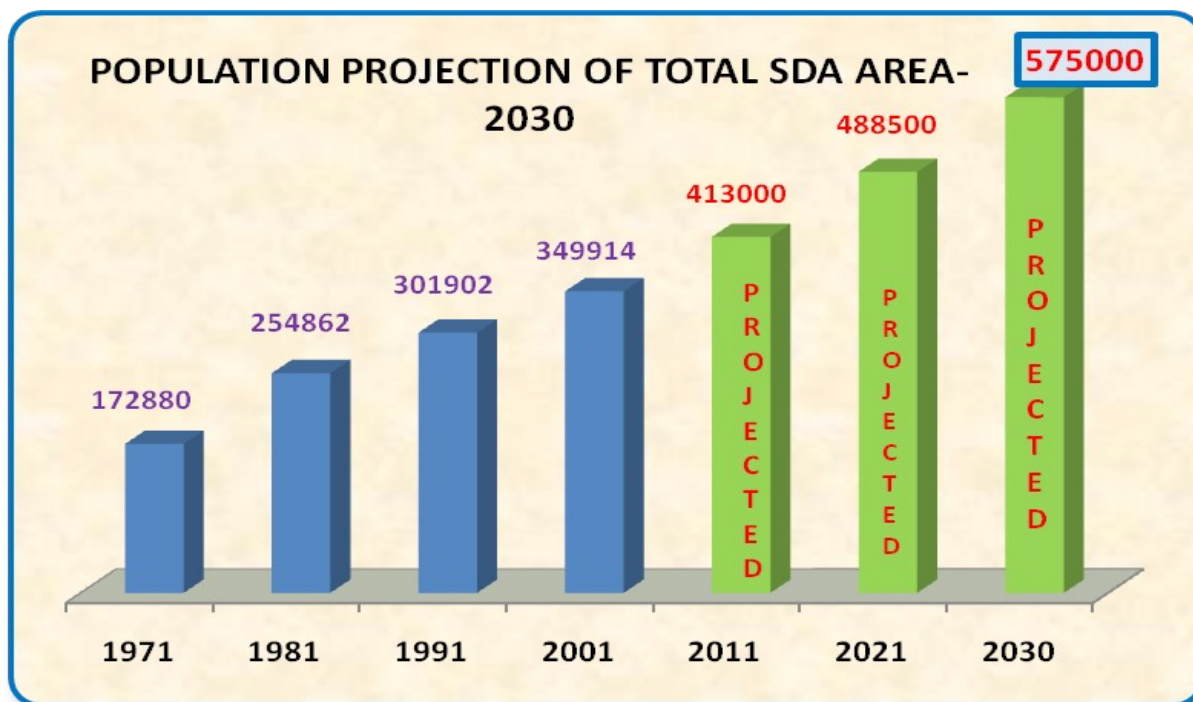
At the city level the CDP is conceptualized to transform the area within the SDA from single nucleus (core area of Sambalpur) to multi nuclei, i.e.

Sambalpur as	Administrative and Business hub
Burla as	Education and Sports Center
Hirakud as	Tourism and Recreational area
67 Villages	Prosperous agricultural activity area

Following proposals need consideration.

- Upgradation of local roads and roads having regional linkages.
- Upgradation of Urban and rural links.
- Various zones for modern recreation facilities and theme parks for outdoor recreation.
- Development of Commercial nodes
- Major organized open spaces like, urban squares, ceremonial / recreational grounds.
- Health complex, educational complex, community buildings and utility services.
- Development of places around Hirakud reservoir for the state level recreational use.
- Development of forest based and agriculture based activity nodes.
- New Satellite Township.
- Flyovers and Parking Lots
- Preservation & Development of Water Bodies and Water Retaining Structures

All these activities will be integrated in the planned and coordinated manner to have multi nuclei in the SDA area instead of single nucleus in the Sambalpur city. Expected population in 2030 for the SDA area is stated in the Bar Chart and Table below.



Population projections for the Urban and Rural Components of SDA area:

			1971	1981	1991	2001	2011	2021	2030
			As per Census data				Projected		
Urban	Sambalpur	Municipality	*64675	110282	131138	153643	183383	220000	261500
	Burla	NAC	15587	24694	31087	39204	48217	58000	69000
	Hirakud	NAC	15040	21701	23833	26394	30000	34000	38000
	Total	3	95302	156677	186058	219241	261600	312000	368500
Rural	Sambalpur	21 Villages	@17803	21457	26689	27305	30700	34500	39000
	Burla	1 Village	2393	3188	3553	3618	4000	4500	5000
	Hirakud	6 Villages	3172	5532	6426	7313	8700	10000	12000
	Newly added	67 Villages	54210	68008	79176	92437	108000	127500	150500
	Total	95 Villages	77578	98185	115844	130673	151400	176500	206500
SDA	Total		172880	254862	301902	349914	413000	488500	575000
	Sambalpur	Development area	*+@ 82478	131739	157827	180948	214083	254500	300500
	Burla		17980	27882	34640	42822	52217	62500	74000
	Hirakud		18212	27233	30259	33707	38700	44000	50000

Zonal Action Plans

The planning area of the SDA divided into various Zones and has been demarcated on the basis of ease in implementation of the CDP proposals. The plan for each Zone is

prepared containing detailed information regarding provision of social infrastructure, parks and open spaces, circulation system, etc.

Provision of Community Facilities

The requirement for the **educational facilities** and Health Facilities in the SDA area by 2030 for the projected population is made.

A big hospital on 11.18 hectares of land is proposed in the Bhaktpali area adjacent to the SH-10 for catering to the need of the proposed satellite township as well as the population of 67 villages.

Community / sector level parks of about 1 hectare each have been provided in the SDA area. Twelve such parks have been proposed in the Sambalpur municipality, 3 parks in Burla and 2 in Hirakud. Moreover, three City level parks have also been proposed in the Sambalpur municipality area of 2 hectares each. Many local parks and open spaces with or without ponds have been proposed in the Burla and Hirakud towns also.

The prototype of **Zonal commercial center** for 20 shops and offices 220' X 160' is suggested. These commercial centers can be provided in the commercial zone as well as in the residential zone. SDA can either develop them or guide the development as per the proposed design.

The prototype of **Local / street shopping center** with 10 shops in linear fashion on the ground floor and offices on the second and third floor are also proposed in the area of 200' X 50'. These Local shopping centers can be provided or permission may be granted as per the design in the residential zone to cater to the daily need of the citizens.

It is found that most people in the urban area of SDA either defecate in the open along the nallas or use whatever **public toilets** are available. Community Toilets, latrines, bath places for males and females in awful conditions exist. These facilities are required to be renovated and supplemented by additional units. Additional facilities should be built to serve the requirements of the population which is more in demand due to the absence of such facilities at home. The prototype of such Toilet Block with 20 WC (ten each for gents and ladies) combined with 20 bath/washing places (ten each for gents and ladies) along with the septic tank and cesspool is proposed in the area of 75' X 45' has been suggested.

It is also proposed to have a big scale **Cultural center** on the south of the Hirakud having wider approach from the 24 m road to attract tourists and other residents of the SDA area. The location is just near the proposed Burla Hirakud Bridge over Mahanadi River and adjacent to the proposed Town Center. This 24 m road will connect the Burla with Hirakud through a proposed bridge over the Mahanadi River.

A 5 hectares plot for **Cultural Centre and Art Gallery (CCAG)** in Sambalpur has been proposed in the Putibandh village just outside the municipal area having approach from the 18 m road and convenient access to both the national Highways having the display space for tribal/ethnic items prepared by then local artisans, space for the folk dance and cultural activity and also a cultural library can be built. Marriage hall with a party plot can also be accommodated on this land. Tribal culture can be displayed here. Exhibition on temple architecture and ancient city development techniques can be permanently displayed. Prototype of houses in Patnaikpura, Nandpura, samsadak, Badasadak etc. can be displayed here in the exhibition hall or in the campus itself. Auditorium for performing arts like theater, folk dances, musical performances, classical dances etc. can be part of

this complex. Sambalpuri textiles and art work can be displayed and sold to the tourists and locals as well. A tourist guest house can also be constructed here.

A **Festival / Mela Ground** with about 10 hectares of area and a hall to hold religious-spiritual activities and couple of rooms to display religious monuments and art pieces is proposed near the railway crossing on NH 6/53 in Ainthapali area of Sambalpur. The open ground will be equipped with the facilities where celebrations of various strings of religious festivities are held throughout the year.

A land has been reserved for the well designed world class **Aquarium** on about 0.4 hectares of land to attract the tourist in the Sambalpur town, which will add to the economic development of the town as well.

It is proposed to have a big **Botanical Garden** of about 14 hectares near the junction of NH-6 and SH-10 in Ainthapali area. Ayurvedic plants can be grown in this garden. This will attract not only the tourist but the students of the educational institutes also.

Regional Park on about 10 hectares of land is proposed in the Tumbesingha area of Sambalpur having access from NH-6/53. Vrundavan type garden (at Mysore) with musical fountains can be developed in this park.

A huge **Environment Complex** on about 17 hectares of land have been proposed in the Khetrampur area of the Sambalpur town on the south of the railway line having approach from the proposed 18 m and 24 m roads. A flyover is proposed so as to cater to the other surrounding areas. The complex comprises of land specifically designated for **Urban Forestry (UF)**, **Environment Education Park (EEP)**, **Zoo** and **Spiritual Hall (SH)**. Medical herbs, flora and fauna can be on display on permanent basis. The complex shall be developed as lush green with aesthetically appealing landscape and waterfalls. Colorful wild life can be an added attraction. Vehicular Parking Space (VPS) has also been proposed in this complex. This complex will serve as regional recreation center and will be the main attraction of the SDA.

Sambalpur lacks any signature structure which can identify the town. It is proposed to have a **City Symbolic Spot** on about 0.7 hectares of land near Police Line on 18 mts road at the Laxmi Talkies Chowk. Here statue can be erected and decorated with the works of local artisans using traditional design and building materials. History of Sambalpur can be written on a stone or rock and can be placed here. Small Park can be developed around the structure.

Similarly, a spot for **City Emblem** is proposed in Botanical garden at a place when one enters the town from the Jharsuguda SH so that they feel that now they are entering the Sambalpur Urban Centre. This can be developed by public participation and can be sponsored by giving advertising rights to the person or company maintaining this structure.

Stadium for rural/urban sports has also been proposed on around 10.5 hectares of area just outside the municipality limit of Sambalpur on the east side near Sankarma. The stadium will provide space and facilitate the tribal sports.

Tourist Offices with ample parking spaces on about 1.65 hectares of land have also been proposed in the CDP so that tourism activities can be streamlined and developed in a well planned manner with sufficient facilities for the tourists. The parking spaces can be used exclusively for the parking of the tourist vehicles. The bus trips to the tourist places can depart from here.

A town hall / auditorium, shopping center, local parks and other open spaces and extension of Ainthapali bus stand are also proposed in the CDP to be built on the designated spots for the convenience of the so city and the tourists as well.

In Burla it is proposed to have a big scale **Central Business District (CBD)** in the north Burla having wider approach from the 24 m road on the south of the Mahanadi. This 24 m road will connect the Burla with Hirakud through a proposed bridge over the Mahanadi River. On the north of Mahandi in Hirakud town it is proposed to have a big **Cultural Center** on the south of the Hirakud having wider approach from this 24 m road. This pocket will attract lot of tourists and local residents of the SDA area. The location of these two Centers is just near the proposed Burla Hirakud Bridge over Mahanadi River. **Water Park** on the bank of Mahanadi and adjoining this Cultural Center of Hirakud is also going to be a major tourist attraction in the SDA area. One big Commercial Center is also proposed in the Hirakud adjoining the Water Park and the Cultural Center. Once these pockets are developed on both sides of the river Mahanadi and a communication is provided by means of new river bridge, Burla – Hirakud is going to become a **Tourist Hub** with facilities for cultural activities, educational campuses, place for traditional folk dances, recreational facilities and lot of commercial activities. This tourist hub is going to attract the tourists not from the region but also from the other part of the nation also. SDA can develop this project on priority. Proposed activities can be developed on both sides in the initial stage and later on when the finance is available with the SDA, the construction of bridge can be taken.

A twenty-one Kilometre **drive on the dyke** along the Hirakud dam offers a unique experience of calm serenity and majesty of nature. The Government Tourism Department should organize a bus trip on this dyke and a visit to Gandhi Minar.

A peculiar way the houses in the older parts of town are arranged is the gulli system, literally, mazeway. Houses in Patnaikpara, Nandpara, and along the parallel streets of Sansadak and Badsadak are examples of the above. The streets of Badasadak and Sansadak extending from Kunjelpada chowk to the office of the Sambalpur municipality have a proud heritage and have contributed immensely to make Sambalpur world famous and enriched the cultural heritage of the country. Heritage walks can be arranged along these paths as part of tourist attraction. The area of the old city including Gol Bazar is proposed to be reserved for pedestrians only.

There are many tourist spots in and around SDA area like Rock paintings at Ullapgarh, The Dumri (Hillock), Pujharipalli, Dadhivamana temple, Tilting Temple of Huma, Government Library, Samlai Mandir, Bells Galore- Ghanteshwari, Gopalji Math, Wildlife Sanctuary at Ushakothi, Wild life sanctuary known as Badrama sanctuary, Budharaja Temple, Gudguda waterfall, Hanuman Batika, Mandira Dam, Khandadhar (Rourkela),

Nursingnath Temple, Harishankar, etc. The Tourism Department of the State Government must take initiative and organize the following existing private 7 Tour and Travel offices who can undertake the touring trips to the above mentioned places. The Government Tourism Department can also build and organize a tourist Guest House and run it through participation of private entrepreneurs.

The pitching of **water channels and Ponds** up to 3 feet from the ground level and providing hard surface of 15 feet width with tree plantation and street lights at the distance of 50 feet center to center around ponds and on either bank of Dhobijor Nalah, Tangra Nalah, Durgapali Nalah and Hardijore Nalah are proposed. The local knowhow of the experts for developing landscaping of above mentioned ponds, parks and botanical garden will help enhancing the environment status of the built environment.

It is proposed to **streamline the Dhobijore nala and the Tangra Nala** to avoid overflow of the Nalas and to free the land for development. Drainage Master Plan of Sambalpur has been formulated by Hirakud Dam Circle office.

The Flora, Fauna and Animal species are required to be given the required environment. As such an overall preservation of forests and hills namely Motijharan, Lamdungri (RF) and Budharaja at Sambalpur; small hillock Dehri Hill inside the Sambalpur University campus and Chandli Dungri (RF) on east of the Burla NAC, laxmi Dungri (RF), and Reserved Forest Hill (RF) on north at Hirakud and Reserved Forest on north of Kankhinda mouza within 67 mozas by providing **100 metre wide open land of landscaped strip towards** developing area / all around the reserved forest will provide excellent environment.

Considering the tree density of atleast one tree per person living in the urban areas for the better living environment of the people residing there, the area of Sambalpur, Burla, Hirakud complex must have 2,19,241 trees in 183.02 square kilometers of area in 2001 without considering the trees in hills and reserved forest. By 2030, at the same rate of one tree per person, considering the projected population, the development areas of Sambalpur, Burla and Hirakud should have 369500 trees. It is proposed that the trees can be planted around hills and forests, in parks and open spaces, in parking areas, on road sides and on private properties. **Tree plantation** shall be made compulsory at the time of issuing development permission and deposit may be taken which can be refunded after 3 years if the tree survives.

There is no satisfactory **management of solid waste** in the Sambalpur Burla HiraKud urban complex. Residents are also not aware and concerned for the hygienic manner in which the solid waste could be collected and disposed of scientifically. The waste of all sorts is thrown on roads, open spaces, within and outside public buildings. There is total absence of collecting bags within residence and the collected waste within the residence is dumped outside the dwelling unit. There are not enough dustbins to collect the refuse on the road and the provisions of such collection points are inadequate. Households, Hotels, Restaurants, Hospitals and Nursing homes, Offices, Schools, Education and other Institutions, Markets, Cinema Halls, Railway Stations, Religious places, Bus Stands, Truck Terminals, Slum pockets, Way side Hawkers etc. throw solid waste everywhere on the urban land. Waste dump sites are not managed well by the local authorities. Rag pickers, children or adults pick up plastic items, papers, cardboard and metal scrap. The

municipal sweepers collect the refuse and clear the drains of waste and get the dry and wet sludge carried away through handcart or tractor. The lifting of defected waste by the slum population and low income group residents is carried away through fleet of vehicles by the municipal employees. The defected waste creates serious hygienic problem and when the slum population is high, non availability of public latrines and bathing places create alarming environmental problems. It seems the fleet of sweepers and availability of hand carts and tractors or trucks are not sufficient to manage the collection and disposal of the solid waste by the local authorities. The bus stands, truck terminals, railways and public places are not responsible to manage the collection and disposal of the solid waste. The collected waste is disposed of at Lakshmidungri and thrown in to land fill sites.

It is recommended that an expert should examine whether the equipments mentioned above are adequate for efficient management of the generated Solid Waste in the urban areas of the SDA. Adequacy of the above mentioned equipments must be examined periodically and additional facilities must be added from time to time. All the three local authorities have Garbage dumping yards away from the developed area. SDA may go for incineration plant for disposal of waste from the dumping site. Available technology for production of Bio gas from the garbage dumping site shall be explored for power generation and earning money from the waste.

Community Dust Bins should be provided at regular intervals at the road side, marginal open spaces in the urban area and at the places where the demand is acute. In case of Hospitals, Hotels, Restaurants, Gardens, Cinema Halls, Community Halls, Multiplexes, Malls and Shopping streets etc. Solid Waste collection Bins should be provided in abundance. Garbage collection system needs to be improved. Special study by municipality may be taken.

The **incineration plants** may be constructed to burn away the solid waste. SDA should implement vermi-composting technology for disposal of organic solid waste. Technology is now available to get the bio gas from the solid waste which can be used to get the power to run the streetlights and other equipments. SDA can explore such possibilities.

Slum Rehabilitation

Most of the slums in the SDA area are found in the Sambalpur municipality. About 20 percent of the population of the Sambalpur municipality are living in slums as per the 2001 census data. The slum population has increased over a period of time since then. Slums have developed along the natural drainage channels popularly known as Dhobijore Nala and Tangra Nala. These slum dwellers pollute this natural drainage by open defection and throwing garbage in the nalla destroying the environment and are the main source of water and air pollution. There is an urgent need to rehabilitate these slum dwellers to some other place with all necessary basic amenities so that the natural drainage channel can be made pollution free and help in channelizing the storm water drainage. As part of CDP, the location for slum rehabilitation has been proposed on about 16 hectares of area on the west side of the Sambalpur municipality area. The slums shall be shifted in the phase manner and once successful other area may also be earmarked in future to rehabilitate all the slum dwellers. Care should be taken by the SDA to control the development and growth of slums in the town. The natural drainage is also realigned so as to avoid flooding and reduce the influence area of the natural drainage. These nala shall be paved and walk way is proposed with line of trees 50 feet centre to centre to improve the surrounding environment.

Satellite Town

Madhupur - Jogipali Community Satellite Town is proposed over 426.59 Hectares of land on the north side of the Lamdungri reserve Forest in the Madhupur and Jogipali village near Sambalpur. The site is made accessible by the proposed 30 mt road passing through the reserve forest and connecting the NH-6 /53. The township is accessible from the SH-10 by a proposed 30 m road running east west. Another 24 m road is also proposed to connect the Baramunda area with the site. Satellite town is proposed to attract entrepreneurs to the town of Sambalpur. This site can be well planned and developed in an environment friendly manner by taking the help of experts and professionals so that land can be used optimally and overcrowding in the Sambalpur town can be avoided. Planned development of the satellite town will help reduce the consumption of water and power and proper underground drainage system will help protect the environment. Open space, parks and play ground with lot of trees will certainly improve the overall environment of the SDA area. Rain water harvesting system will help conserve the water and also in recharging of ground water.

Mahanadi River Front Development

The river front is totally neglected. There is a great scope and opportunity to undertake river front development which will be self financing development in the long run. Such a scheme will provide water front to the new development that can be undertaken on both the banks of the river by rebuilding part of the river bed land for construction and recreation use. Government will have to undertake hydraulic survey and constitute Mahanadi Riverfront Development Corporation for formulating the river front development to improve the overall environment of the SDA area. Suitable regulations can be framed for this development by the Mahanadi Riverfront Development Corporation.

Transportation

The cross sections of 80 meters (250 ft.) wide (Right of Way i.e. ROW) National Highways and 45 meters (150ft.) wide ROW State Highway are suggested respectively. It is suggested to have on the NH, 20 feet wide central divider, 3 lane road in each direction, 6 feet of shoulder and 25 feet service road on both sides to be separated by 20 feet parking space at strategic places. 20 feet space at the end of both the sides has been proposed for vehicular parking in the linear fashion. Once the whole ROW is developed it is expected to smoothen the traffic movement and chaotic parking problem shall be solved.

Similarly, it is suggested to have in the SH at strategic locations only, 10 feet wide central divider, 3 lane road in each direction, 20 feet service road on both sides and 17 feet space at the end of both the sides for vehicular parking in the linear fashion. Once the whole ROW is developed it is expected to smoothen the traffic movement and chaotic parking problem shall be solved.

SDA with the help of NHA and R & B department of the state Govt. shall implement the development of roads as suggested above.

Golbazaar road, Patnaikpara, Nandpara, San sandak and Bada sadak are required to be pedestrianized with hard surface pavement on the streets. The main Bazaar Street in Gangtok is fully pedestrianized with flower beds and seating arrangements. The vehicles to supply the area with commodities will be allowed between 10 PM to 8 AM only in

Golbazaar. The vehicles of the residents will only be allowed to ply on the streets. The auto and man pulled Rickshaws for the movement of residents will also be permitted within the street areas.

At least 5 feet to 7 feet wide foot paths shall be provided on either sides of the roads in the above mentioned two Business Corridors.

Anthiapali Bus Terminus has been functioning over an area of about 1.28 hectares only after obtaining possession from Orissa State Road Transport Corporation. The area of the Terminus is inadequate to accommodate various facilities for the efficient functioning of the intra and inter bus plying management. There is total absence of well planned bus bays, vehicle parking space, public telephone and ATM service, office and waiting facilities, toilets, small necessity shopping center etc. too. Thus to develop a modern bus terminus, additional land of 4.53 Hectares is proposed so that the total area available for bus station increase to 5.81 hectares. The location of the present Bus Terminus near the cross junction of two high ways namely NH6 and SH 20 demands further modernization of the Bus Terminus at the same spot. Orissa State Road Transport Corporation will be moved by the Sambalpur Development Authority to do the needful for the purpose.

A vehicular flyover bridge at the junction of SH 10 and NH 6 will have to be provided on NH 6/53 by the NHAI for the smooth flow of traffic. The issue will be taken up by the Sambalpur Development Authority and P.W.D. with the National High Way Authority (NHAI).

Designated vehicular parking spaces have been suggested as shown on Underground vehicular parking space on Police Station plot near Laxmi Talkies Chowk has also been suggested to save the urban land. Front yard of the police station can be used for parking of rickshaws.

Traffic signals, zebra crossing, street lights, improved rotary and traffic islands at Laxmi Talkies junction is proposed for installation through Police department / Municipality. The geometrics of the road alignments are also required to be corrected.

Truck Terminus

By the road sides of National High Way No 6 /53, heavy trucks are parked from Ainthapali to Remed Chowk. Other vehicles also get haphazardly parked alongside these trucks. In addition to these unruly parking of vehicles and trucks, temporary sheds selling beverages, fast food items and providing emergency truck and vehicle repair facilities invite pedestrians. Thus a complete chaos results along this part of the National High Way No 6/53. To get rid of the problem, Sambalpur Development Authority has rightly considered the idea to develop a Truck Terminus having Truck parking Bays, small vehicle parking area, public toilet block, refreshment centers, dormitory facility, truck repair workshops, petrol / diesel pumps, small offices etc. It is proposed in the CDP to have a truck terminus on 10.22 hectares of land near Remed chowk on the north side of National Highway no. 6/ 53 besides the proposed industrial zone. Having a designated space for truck parking, the haphazard parking on the roadside will be avoided and more space shall be available for the movement of traffic thereby reducing the pollution also and improving the environment within the SDA area.

Two **new flyovers** have been proposed on the railway track on the west of the Sambalpur Junction railway station so as to connect freely the Khetrajpur with the proposed

Environment Complex and the various localities on the north of the town. This will decrease the distance for the people coming from Hirakud and Burla to the Sambalpur town for trade, business and shopping, recreation etc. The proposed flyover will have width of 9m.

Lot of vehicular parking spaces at strategic locations have been proposed in the CDP to take care of off-street parking. Such parking spaces have been proposed at Sambalpur Junction, adjacent to NH near Ainthapali chowk, in the proposed Environment complex, near government buildings etc. Within the core area of the town where not enough space for parking is available, underground parking space has also been proposed near the Laxmi talkies chowk.

A bridge over Mahanadi River is proposed to provide the connectivity of Sambalpur town from Bhatra to Basantpur village. This will also reduce the distance for the traffic coming from the Cuttack, Deogargh and Dhama side and going towards Bargargh. The bridge can be accessed through 24 mts wide road which connects the NH 6 / 53 and NH 42 / 55 with the proposed bridge. Though construction of this bridge may not be taken on a priority as it is a capital intensive project but as and when finance is available it should be constructed to boost the development of the town.

A new **road over bridge** has been proposed on the river Mahanadi on the north of the town so as to connect freely the Burla and Hirakud without taking the detour and using the NH. This bridge will boost the development along the region and shall attract lot of tourist.

The Air strip at Sangulpali north of Lamdungri Reserve Forest is directly accessible from SH-10 is partially functional for small planes. There is no Helicopter service to Jharsuguda or Sambalpur. Since there is no air connectivity with major cities of India, it is important that for increasing the economic activities of the SDA, air connectivity in this region of the State should be developed. **Thus, airport is proposed in the SDA area for which the SDA should approach the Airport Authority of India through the State Government.**

In the 67 Villages surrounding the Sambalpur, Burla and Hirakud towns, the **Central Villages** have been identified having the population of more than 1000 for the balanced development of the SDA area by providing work centers and linking the whole area by means of strong networking. Ten such selected villages with minimum population of 1000 will act as Central Villages to support surrounding village population engaged in agricultural activities. These villages are Balbaspur, Salad, Derba, Tilaimal, Pondoloi, Katarbaga and Nuaramplela in the linear corridor of 67 villages on north and Kalamati, Garmunda and Chiplima located on south of Burla and west of Mahanadi. These selected Central Villages will provide agricultural seed and grain storage depots, Tractor and agricultural production service facility, marketing of grains and vegetables facility and rural community buildings for the surrounding villages.

Following economic nodal villages are selected for the purpose.

- (i) Madhupur, Jogipali, Talaba, Padripali and Bhualpali villages are contemplated to be developed as Community Satellite Town on an area admeasuring 438.27 Hectares.
- (ii) Rengali as socio-economic Node where small factories processing forest based goods, pharmaceuticals, herbs, fauna, flora, water and fish life production activities with lodging and boarding houses, hotels and restaurants will provide the setting for thriving business on an area admeasuring 73.46 Hectares.

- (iii) Lapanga is proposed to be developed as an Industrial Manufacturing Marketing Centre with small scale iron and steel manufacturing industries, sambalpuri textile, handloom, cottage industries and supporting infrastructure on an area admeasuring 76.97 Hectares.

Sambalpur Development Authority (SDA) will find it difficult to get finance for land acquisition, development and management of the land for the proposed township. More over land acquisition is time consuming.

It is not easy to obtain exorbitant financial help of rupees from the Government or /national/international agency. It is imperative for the SDA to work on the self financing land acquisition and land development mechanism without depending on financial help from other sources. This goal can be achieved through the self-sustaining land readjustment scheme which is known as **Town Planning Scheme** as provided for under sections 26 to 49 of chapter VI of Orissa Development Authorities Act, 1982. SDA will not have to get funds for the development of the township area under the Town Planning Scheme preparation mechanism as the funds will be created through self financing technique. The responsibility to develop the satellite town can be undertaken by business establishment and /or corporate houses.

The planning area of the SDA is divided into various Zones on the basis of homogeneity in the character of development and its location. Sambalpur development area is divided into 10 Zones, Burla into 3 Zones, Hirakud into 3 Zones and 67 villages into 7 Zones. Thus the whole of SDA area is divided into 23 Zones.

The Zonal Plan for three Zones of Sambalpur, two Zones of Burla and one Zone of Hirakud is prepared containing detailed information regarding provision of social infrastructure, parks and open spaces, vehicular parking, circulation system, etc. These Zonal plans shall act as a link between the CDP and the layout plan to create a sustainable environment for better quality of life. The Zonal plans are in the form of structural plan. Road geometrics are given details. Traffic signals, street lights, street furniture, design of traffic islands, traffic junctions, footpath, walkways, location of bus stands, parking lots, parking spaces, etc. have all been shown for the micro level planning in the zonal maps. The planning details of the Zonal Plans area discussed in the following paragraphs.

At the rate of 125 liters per capita per day (lpcd), the requirement of potable water in 2030 will be about 53 MLD for the development area of Sambalpur, Burla and Hirakud (population 424500 x 125 liters of water per capita per day = 53 MLD). Since the availability of treated water in the area is 52 to 55 MLD at present, the present area under Sambalpur Development Authority will get required amount of water up to the year 2030. However, the additional water supply pipe line net work will have to be under taken for the growing population from time to time.

A Japanese Consultancy firm JICA – CCI based at Bhubaneswar is working on financing the water supply scheme in the Sambalpur municipality area. TTI, Bangalore has also been roped by the state Govt. to prepare the report on the water supply scheme in the Sambalpur area. The recommendations of these consultancy firms will be of great help to SDA in planning and implementing the water supply schemes in the area. PHED will be providing the water supply in the area which are declared as urban area by the SDA.

Underground sewerage system as formulated by the office of the Executive Engineer , Public health Division, Sambalpur is required to be implemented on priority basis under the supervision and with the participation of,

- (i) Public Health Engineering Organization and
- (ii) Orissa Water Supply and Sewerage Board.

It was estimated that the underground sewerage system as formulated by the office of the Executive Engineer, Public health Division, Sambalpur would have cost Rupees 2980 million in 2009. They have proposed integrated sewerage system for collection, transportation, treatment and hygienic disposal of domestic waste water generated in Sambalpur, Burla and Hiraikud towns to meet the present and projected requirement by the end of year 2039. The project cost includes, laying down of sewers, construction of sewage pumping station, sewage treatment plant, replacement and rehabilitation of sewers, low cost sanitation units, renovation of Dhobijore Nala, renovation of open type waste water collection drains, sewer cleaning equipments and other administrative expenditures. Thus it requires huge amount of finance which will have to be obtained in future when the underground sewerage is laid. SDA can refer to this document while finalizing the construction of sewage disposal system in the area. For the time being Sludge and Sewage treatment facility in Sambalpur near Dhobijore and Tangra Nalahs is proposed to save the area from air and water pollution at the bank of the river Mahanadi.

Drainage System

After the flood of 1982, a detailed master plan for the proper drainage system in Sambalpur town was prepared by the Superintending Engineer, Hiraikud Dam Circle, Burla in June 1995. The project cost was estimated to be Rs. 2564.81 lakhs/- as per 1994 rates. The works proposed in this report “DRAINAGE MASTER PLAN OF SAMBALPUR TOWN (REVISED)” may be taken up by the SDA with water supply and sewage disposal board for implementation of the identified works. This will go in long way to solve the drainage problem of the Sambalpur town in the SDA area including taking care of flooding.

It is proposed to realign and straighten the natural drainage channel namely, Dhobijor and Tangra Nalas to avoid flooding and to pitch these nala by 3 feet stones on both the internal side and to construct 15 feet wide stone walkway with trees planted at 50 feet center to center within the built up area in Sambalpur. Sewage treatment facility should be worked out immediately and shall be implemented as proposed in the CDP.

Enough power is generated by the Hiraikud Hydro Power project and will cater to the need of 5.75 lac population of SDA projected for 2030.

Street lights along the road side and at public places consist of mercury bar light and halogen light which provide satisfactory service to the road users. In all within the Sambalpur Municipal Area there are about 4000 number of light points. With the expansion of built up area in SDA, additional 2300 street lights will have to be provided on roads and in public areas.

Sambalpur is equipped with Fire Services. As per the UDPFI guidelines, 1 fire station is required for 2 lakh population. At this rate, by 2030, 3 such fire stations shall be required in the SDA area. The Sambalpur municipality and the big industrial units in the SDA area can have the fire tenders for the emergency.

The development activities in the SDA shall be regulated as per the proposals of CDP and the said planning and building including zoning regulations. Development control

regulations for overall planning of the SDA area and individual building has been prescribed in the Sambalpur Development Authority (Planning And Building) Regulations 2012 submitted to the State Government for sanction by the SDA in 2012. Once these regulations are sanctioned, this will become part of the CDP and will be in force for the whole SDA areas.

A Comprehensive Development Plan (CDP) preparation requires institutional management at two levels:

- i) While preparing the CDP, and
- ii) While implementing the CDP

For success of the CDP, it is necessary that the Sambalpur Development Authority (SDA) is geared up to manage the institutional issues.

Institutional management shall be important at the following levels:

- Municipality situated in SDA area.
- NACs of Burla and Hirakud
- District and Village Panchayats situated in SDA area
- Authorities having jurisdiction over some other areas of SDA like Forest Department, Defense, Railway, National Highway Authority, Irrigation and so on.
- Coordination among various departments working in SDA area.
- Coordination with higher levels of Government machinery.
- Institutions working on education/ religion / socio economic issues
- Various NGO's.
- Managing opinion of the elected representatives under the democratic system and as per the 74th Constitutional Amendment Act, 1992.

For efficient implementation of the technical works, the planning and enforcement section of the SDA has to be strengthened. Following additional manpower is proposed for the planning and enforcement section of the SDA. The other supporting staff will have to be appointed from time to time so as to achieve the target set for 2030.

In the Planning Branch, One Associate Town Planner (class I) and one Assistant Town Planner (class I) who are Civil Engineer or Architect with post graduation in Urban & Regional planning are required to look after the highly technical jobs.

SDA alone cannot fulfill the objectives of the CDP. For local level implementation and maintenance of the infrastructure and to support the activities of the Sambalpur Development Authority (SDA), the Sambalpur Municipality (SM), Burla NAC (BNAC) and Hirakud NAC (HNAC) will also have to be equipped with sufficient technical manpower. Person having knowledge of town planning, urban & regional planning is must in all the three urban local bodies. Sambalpur Municipality must have atleast one Assistant Town Planner. It is also proposed to create additional posts at SM, BNAC and HNAC

Recommendations:

1. As observed earlier, there is lack of full time technical manpower and staff resulting in the poor management of administration in the SDA which in turn results in non-implementation of many infrastructure projects. It is very necessary not only to fill the vacant post but also to create new posts so that proper implementation of projects identified in the CDP can be undertaken by the SDA.
2. Total lack of coordination has been observed between the SDA and other agencies like, Sambalpur Municipality, Burla NAC, Hirakud NAC, village panchayats, local level offices, central and state government agencies and other infrastructure providing agencies. Functional co-ordination between SDA and other planning and development agencies like local bodies, village panchayats, local level central and state govt. offices, NGOs etc. are required to be improved.
3. Visit to the SDA office gives the gloomy picture so far as basic office administration equipments are concerned. In this modern age of information technology basic communication equipments like, fax machines, enough copier machines, computers etc. are not available in the office building. Lack of proper communication will result in the poor implementation of projects in particular and CDP in general.
4. It is also observed there is inaction by the SDA in mobilizing the financial resources for funding the infrastructure projects. No efforts are made to get the finances from the various funds made available by the WB, ADB and other financial institutions like HUDCO, ILFS (Institution of Leasing and Financings Schemes) etc. This is mainly due to lack of technical manpower and the communication equipments. Moreover, no steps are taken to channelise the financial resources.
5. There is no **City Investment Plan (CIP)** with SDA. CIP will help the SDA in proper planning of infrastructure projects. Which projects are to be given priority, what fund will come from where and how and when it has to be spent is all part of the CIP. It is an important document for infrastructure planning.
6. Absence of **Financial Operation Plan (FOP)** is also one of the hurdles in the SDA towards implementation of projects. This plan is important to know how the projects are financially supported for its final implementation.
7. Effort should be made to introduce land readjustment method which will be a good source of providing planned sites without much cost to the urban institutions.
8. It is suggested that all Government land coming within the jurisdiction of Urban Local Bodies may be vested with the concerned local body to act as a Land Bank for undertaking development works.
9. Community management and execution of self help projects to be encouraged.
10. Trained computer personnel are to be posted in SDA for analyzing the satellite imageries and plans derived from these imageries. Training to the concerned staff of the SDA shall be provided by the Consultants as per the Deed of Agreement to use the GIS software of effective implementation of the CDP and monitoring the development of the SDA area and how to use the software for the future planning and to find the information by the multiple queries. SDA must employ Planning draughtsman with knowledge of CAD, GIS and other analytical software.
11. SDA need substantial funds for capital development work. The scope for institutional finance must be explored earnestly.

- a. New heads for fiscal resource mobilization has been suggested to raise the income of the SDA to meet the implementation requirement of the CDP.

Plan Implementation Strategy

- The lands for various public purposes have been reserved under the provision of section 9 and 10 of the Orissa Development Authority act, 1982 in the CDP of SDA for Botanical garden, cultural center, cultural center, water park, Environmental Complex (consisting of zoo, environment education center, Spiritual center and vehicular parking space), mela ground, town hall, aquarium, other parking space, etc. SDA must take the possession of this land as soon as possible as the price of land keep on rising.
- In case the reserved land is not made available by acquisition, the SDA has the option to get these land through the mechanism of Town Planning Scheme by which these lands will vest with the SDA absolutely free from all encumbrances. The Orissa Development Authority Act contemplates the preparation of TP Schemes.
- SDA has also the option of designating the land for the public purpose instead of reserving it. The designation shall allow the land owner to develop the land for which it is proposed in the CDP.
- Relaxation in FAR may be considered by the SDA in case the landowner surrenders the land going in the Development Plan road.
- The NH-6/53 and SH-10 passing through the SDA area are proposed to be developed as a model highway with proper parking spaces, as suggested in the CDP.
- Lands required for road widening may not be acquired immediately. Phase wise widening can be undertaken by SDA. If the land owner surrenders the land himself which is going in the road widening, the SDA may grant FSI elsewhere.
- Development proposals in the various sectors have been discussed at length which are Socially Beneficial, Regionally Contextual, Environmentally Sustainable, Financially Viable and Institutionally Executable.
- The main agency for implementation shall be the local bodies and the line departments like, R & B, PWD, NHAI, PHEO, WSSB, Parks and Garden Dept., etc. They would make provisions for necessary resources like, financial, technical and managerial for the implementation of these programs. The SDA would however guide and coordinate with the various implementing agency so as to achieve the objective of the development plan by fixing the priorities and reviewing the progress. SDA should declare the area which need planning intervention as urban area so that infrastructure projects can be taken up by the respective agencies.
- There will be a need to create awareness in respect of the need for preparing the CDP, its objectives and likely benefits that would accrue to the area and the people at large residing there. A Cell at the SDA is required to be set up for creating an overall awareness among the people, educating the needy persons as well as to ensure acceptance of the CDP work. The contentious/ tricky issues needed to be resolved through interaction with all concerned by organizing seminars, workshops, etc.

At the end, CDP should become almost like a publicly accepted work pattern for development of the area. A Nodal Officer of the rank of Associate Town planner for

coordination amongst various departments and other institutions would be required who can obtain their concurrence on various issues and emerging plans.