

8. Transport and Communication

Tamil Nadu's development effort has been made possible by a variety of factors such as pro-active Government policy, entrepreneurship, human capital endowment and above all a fairly sound transport and communication network. The benefits of this in terms of improved market access, connectivity, mobility of factors of productions are evident in Tamil Nadu's growth over the various plan periods.

Plan Investment for Development of Transport Infrastructure:

Tamil Nadu accords the highest priority for the development of infrastructure. The State has set a vision for providing all weather roads to all habitations even as efforts are underway to develop trunk-roads and express highways to meet the growing needs of industry. In

Table - 1 : Plan Outlay for Transport and Communication

Plan Period	Total Plan Outlay (Rs. Crores)	Outlay for Transport (Rs. Crores)	Percentage share to Total
VII Five Year Plan	6317.44	342.00	5.41
VIII Five Year Plan	14016.80	1465.55	10.46
IX Five Year Plan	24916.71	2959.40	11.88
X Five Year Plan	40000(Outlay)	6730.00 (Outlay)	16.83

Source: State Planning Commission, Chennai-5.

consonance with these efforts, Plan investment in transport and communication has been stepped up during the successive plan periods. The public investment on transport and communication which was Rs. 342 crores during the Seventh Five Year Plan period accounted for 5.41 per cent of the total expenditure has been increased to Rs. 6730 crores (16.83%) during the Tenth Plan period.

Road Net Work: Tamil Nadu and Review of Major Road Projects:

The State has a sound net-work of roads. It connects industrial, agricultural production and market centres, important cities, railways, ports, airports and rural areas. During 2004-05, the provisional data shows that the total length of road in the State was 179783 kms. consisting of 3850 kms. of National Highways (2.14%), 7230 kms. of State Highways (4.02%), 7383 kms. of Major District Roads (4.10%), 41191 kms. of other District Roads (22.90%) and 1635 kms. (0.91%) of roads laid utilising sugarcane cess.

Table - 2 : Length of Roads

Sl. No.	Type of Roads	2002-03	2003-04	2004-05(P)	Share to Total
1.	National Highways	3850	3850	3850	2.14
2.	State Highways	7222	7230	7230	4.02
3.	District Roads	48533	48574	48574	27.00
4.	Panchayat Union Village Roads	82859	82859	82859	46.06
5.	Others	37319	37391	37391	20.78
	Total	179783	179904	179904	100.00

Note: P -- Provisional.

Source: Concerned Departments.

Lane-wise Length of Roads:

The ever-increasing traffic hindering free movement of vehicles with speed demands widening and high quality of roads. To meet the long-felt requirements in the road sector, now the roads are strengthened and single lane is upgraded to intermediate lane, double lane or multilane etc. The lane-wise length of road in the State as follows:

Table - 3 : Lane-wise Length of Road - 2004-05 (kms.)

	Single lane	Intermed i-ate lane	Double lane	Multi lane	Total
National Highways	40	11	3510	289	3850
State Highways	1802	1042	4114	272	7230
Major District Roads	4595	898	1790	100	7383
Other District Roads	39248	1178	720	45	41191
Sugarcane Roads (Project Roads)	1600	-	35	-	1635
Total	47285 (77.15)	3129 (5.11)	10169 (16.59)	706 (1.15)	61289 (100.00)

Note: Figures in brackets indicate the percentage share to total.

Source: Performance Budget 2004-05, Highways Department, Tamil Nadu.

From the above table, it is seen that a major portion of the roads in the State remains single lane road (77.15%). For the year 2004-05, the government have decided to widen and strengthen 2945 kms. of single lane and intermediate lane of State Highways to double lane and to strengthen 4278 kms. length of double and multilane with improvement to geometric wherever necessary. In the major district roads category, it was proposed to widen and strengthen 5539 kms. length of single and intermediate lane to double lane and to strengthen the 1837 kms. of double and multilane. Since other district roads and sugarcane roads are intended to improve the economic activities of rural areas, the Government have decided to widen and strengthen these roads also in future. It will give a boost to road haulage industry.

Box-1

Norms for Reclassification of Roads by Intensity

The traffic intensity on roads demands the reclassification of roads to accommodate the ever-increasing vehicle population. The roads having traffic intensity of more than 30,000 Passenger Car Units (PCUs) and important roads are classified as National Highways and where the traffic intensity is more than 10,000 PCUs but less than 30,000 PCUs is classified as State Highways. Major District Roads are categorised if traffic intensity is less than 10,000 PCUs but more than 5,000 PCUs. All other roads are classified as Other District Roads if the traffic intensity is less than 5,000 PCUs. Whenever the traffic intensity increases more than the specified norms in a particular category, necessary steps are taken to upgrade such categories of roads to respective higher categories.

Source: Policy Notes on Highways Department, 2004-05.

Passenger Car Unit

Passenger Car Unit (PCU) is a measure of the equivalent of space occupied by a vehicle while on road. The equivalences are: Car = 1 PCU; bus = 3 PCU, two wheeler = 0.5 PCU; three wheeler = 0.75 PCU.

Source: India Development Report, 1999-2000.

Roads are now utilised to carry 85 per cent of passenger traffic and 70 per cent of freight traffic. Though, the highways constitute only 2 per cent of the overall road network

by length, they accounted for around 40 per cent of the total traffic. In recent years, a series of initiatives had been undertaken to improve the entire road network in the State. These initiatives consist of new institutional arrangements, highway engineering of international standards with self-financing revenue model comprising tolls and a cess on fuel.

Three major interventions of Government of India in the road sectors which have the potential for strengthening and deepening the transport infrastructure in the State.

- National Highway Development Project (NHDP) deals with building High Quality of Highways;
- Pradhan Mantri Bharat Jodo Pari Yojana (PMBJP) deals with linking major cities to NHDP and
- Pradhan Mantri Gram Sadak Yojana (PMGSY) addresses to Rural Roads.

National Highways Development Project:

The National Highways Authority of India (NHAI) has proposed to upgrade the National Highways to four lane / six lane under the scheme of Golden Quadrilateral, North - South Corridor Scheme, Port connectivity and other projects in the State.

Progress in the Golden Quadrilateral Road:

Out of 341 kms. of length of Golden Quadrilateral road running through the State in NH-4; NH-5, NH-7 and NH-46, 97.60 kms. length of roads had been completed upto 2004-05, balance is under progress and is expected to be completed by March 2006.

Progress in North South Corridor Road:

In the North-South Corridor Road in NH-7 and NH-47 of the State, 52.40 kms. length of roads have been completed out of 787 kms. as at the end of March 2005 and work is under progress in 49.60 kms. length and works are in formative stages in the remaining length.

Port Connectivity Scheme:

In order to address the requirements of Tuticorin port which apart from being the district headquarter, the growing goods traffic in the NH-7A to the length of 51 kms. has been taken up improvement between Palayamkottai and Tuticorin.

In non-NHDP roads, a length of 92.48 kms. in Tamil Nadu is to be widened into four lanes namely Kerala border - Kanyakumari section 56 kms. and 36.48 kms. in Pondicherry - Krishnagiri road upto Tindivanam. Further 450 kms. length of NHs have been proposed to be undertaken in the State under other projects.

Honorable Chief Minister's Comprehensive Road Infrastructure Development Programme:

Under the Honourable Chief Minister's Comprehensive Road Infrastructure Development Programme with an total outlay of Rs. 1050 crores, it has been proposed to take up improvements in 2064 kms. of State Highways Roads (Rs.300 crores), 214 kms. of Major District Roads (Rs.300 crores), 5018 kms. of Other District Roads (Rs.220 crores) and

reconstruction of 52 distressed bridges all along these roads with a cost of Rs.30 crores during the year 2005-06. The spill over works of improvement of these roads at the cost of Rs. 200 crores will also be taken up during 2005-06.

Tamil Nadu Road Infrastructure Development Corporation:

The newly established special purpose vehicle viz. Tamil Nadu Road Infrastructure Development Corporation will mobilise Rs. 100 crores in the first stage to formulate, undertake, implement, improve and maintain the road infrastructure in the State during 2005-06. The Corporation will also be the nodal agency for the implementation of PMGSY programme and other Rural Roads Development Programmes through Highways Department.

Pradhan Mantri Gram Sadak Yojana (PMGSY):

With a view to strengthening the rural road network the implementation of the Centrally sponsored scheme viz. the Pradhan Mantri Gram Sadak Yojana (PMGSY) has made significant progress. Implementation procedures have been streamlined and TNRIDC have been assigned specific roles. This scheme is in implementation in the State since 2000-01 with the objective of giving connectivity with all weather roads to all unconnected rural habitations with population above 1000 by 2003 and habitations with population above 500 by 2007. Between 2000-01 and 2004-05 as many as 2340 number of road works were undertaken in the State to the total length of 4197 kms. at the cost of Rs.552 crores and out of which 1395 road works were completed and remaining works were under progress.

Rural Road Scheme:

The road connectivity programme to villages having population between 500-1000 is progressing well in the State. As of March 2005, out of 4986 villages identified with population of 500-1000, 999 villages had been provided with all-weather road connectivity at an estimated cost of Rs.354.13 crores.

Special Component Plan:

Under this head roads are being formed and improved to connect villages where Adi-Dravidar population is more than 50 per cent of total population. Approval for new project to improve 66.03kms. at a cost of Rs.10.52 crores for providing connectivity to 58 villages has been obtained from NABARD. As at the end of March 2005, as many as 342 villages had been benefited by covering 907.91kms. of roads at a cost of Rs. 120.96 crores.

Bus Route Improvements Scheme:

The Panchayat and Panchayat Union roads on which buses have been plying for more than three years are taken up for improvement. During 2004-05 an amount of Rs.27.20 crores was allotted for improving 225 kms. of roads and constructing 10 bridges. Of these, 199 kms. of roads and 7 bridge works were completed. So far 1478.96 kms. of roads have been completed in this scheme.

Tamil Nadu Road Sector Project:

The State has established Tamil Nadu Road Sector Project to improve and maintain State Roads of 742 kms. and 2000 kms. respectively at the cost of Rs.2160 crores. Out of which, the World Bank assistance is at Rs.1670 crores. The land acquisition, resettlement and rehabilitation works are being carried out. The contractors and consultations are under finalisation.

Improvements to Public Roads under NABARD Loan Assistance:

With loan assistances from NABARD, under Rural Infrastructure Development Fund (RIDF) II to IX, so far 6417.37 kms. of roads had been taken up for improvements at a cost of Rs.497.12 crores and for either constructing or reconstructing of 503 bridges at a cost of Rs.302.55 crores.

IT Expressway :

The widening and improvement of road from Madhya Kailash in Adayar to Siruseri in Old Mahabalipuram road for 20 kms. along with East Coast Road link road for 2 kms. has been entrusted to the IT Expressway Limited (ITEL) with 100 per cent subsidiary of TNRDC under public-private participation. This Express Highway will serve as connectivity to all IT companies situated in this area and will also promote industrial sector and generate employment opportunities. This road is designed with world class standards with six lane, two Non-Motorised lane and two service lane.

Road Transport:

The road transport system in the State occupies an important position. Faster industrialisation, urbanisation and ever-growing State economy have triggered an unprecedented increase of vehicle population in the State.

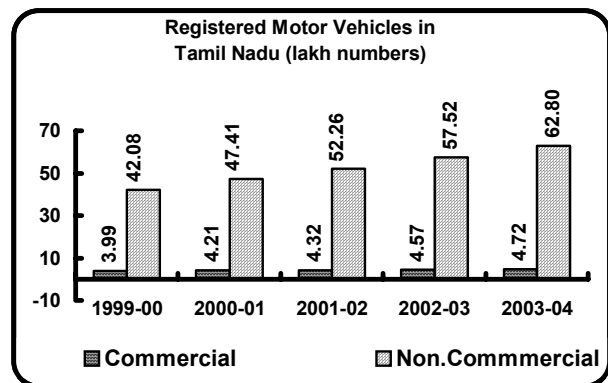
The registered motor vehicles in the State increased by 5.43 lakh numbers from 62.09 lakhs in 2002-03 to 67.52 lakhs in 2003-04 recording a growth rate of 8.75 per cent. Out of 67.52 lakh vehicles, commercial vehicles formed 4.72 lakh numbers and the remaining 62.80 lakhs were non-commercial vehicles is sharing 93.01 per cent of the total. During the review year, the density of motor vehicles per sq.km. was 52 and 10592 number of vehicles for per lakh population.

There is a close linkage between urbanisation and vehicular growth. Urbanisation has increased the number of cars and has led to tremendous growth in the number of two and

Box-2
IT Express Way

It is proposed to improve IT Expressway on the existing old Mahabalipuram road in coincidence with many number of IT Centres coming up there. The road from Madya Kailash in Adayar to Siruseri is being developed with World class facilities of 6 lanes at an estimated cost of Rs.101 crores on private - public participation to serve as a connectivity to all IT companies. The features of these roads are:

- Two metres central median;
- Drainage;
- Rain harvesting facilities;
- Special provision for service roads and
- Paved shoulders.



three wheeler vehicles as the cities expand. Two and three wheeler vehicles constituted 83.94 per cent of vehicle population in the State during 2003-04 which increased to 56.68 lakhs during 2003-04 from the previous year level of 51.93 lakhs. The burgeoning vehicle population tends to put the road infrastructure under pressure. This points to the need for imaginative traffic solutions which have to be factored into urban planning.

Table - 4 : Registered Motor Vehicle Population

(Numbers)			
Type	2001-02	2002-03	2003-04
Commercial Vehicles:	432106	457448	472172
Stage Carriages, Mini Buses, and Omni Buses	27497	27138	27802
Auto Rickshaws	111942	119719	119937
Ordinary Taxi, Motor Cab and Maxi Cab	64036	69804	67647
Lorry & Light Commercial Vehicles	178231	185009	193204
Miscellaneous: Private Sector Vehicles, School Bus, Ambulance etc.	50400	55778	63582
Non-commercial Vehicles:	5225991	5751589	6280301
	(10.24)	(10.06)	(9.19)
Motor Cycles, Scooters and Mopeds	4600565 (10.51)	5073643 (10.28)	5547755 (9.34)
Motor Cars, Station Wagons and Jeeps	522822 (7.92)	564570 (7.99)	606695 (7.46)
Miscellaneous: Tri-Cycle Auto, Tractors, Three Wheelers, Four Wheelers, Road Roller and others	102604 (10.02)	113376 (10.50)	125851 (11.01)
Grand Total	5658097	6209037	6752473
	(9.61)	(9.74)	(8.75)
Density of Motor Vehicle per sq. km.	44	48	52
Motor Vehicles per lakh Population	9065	9833	10592

(Figures in brackets indicate percentage change over the preceding year).

Source: Commissioner of Transport, Chennai 5.

Performance of State Transport Undertakings:

The fleet strength as on 31st March 2005 was 16861. The total revenue earned by the STCs increased by Rs.265.18 crores from Rs.3362.70 crores in 2003-04 to Rs.3627.88 crores in 2004-05. The higher revenue was able to cover over and above the expenditure of Rs.3613.43 crores by 100.4 per cent in 2004-05.

The efficiency of public transport system measured in terms of per day kilometre operation had increased to 63.90 lakh kilometres in 2003-04 from 61.25 lakh kilometres in 2002-03. For the corresponding period despite heavy competition from the private vehicles, the number of passengers carried by the State Transport Corporations had increased to 160.33 lakh per day from 156.28 lakhs.

Realisation of the operating profit of Rs.45.5 lakhs during 2003-04 earned by the STCs was mainly due to the diesel supply at concessional rate by Indian Oil Corporation to STCs. As such, STCs could save Rs.36 crores during the period not only wiping out the estimated annual loss of Rs.32.12 crores, but also earn some operating profit.

Fares charged by STCs had not increased in tune with hike in prices of diesel and other spares. The expenditure on diesel had increased from Rs.1060.27 crores in 2002-03 to Rs.1186.20 crores in 2003-04. The prevailing bus fares in the State is relatively low when compared with other southern states as shown below.

Table - 5 : Comparative Bus Fare in Southern States

(Paise per km.)

State	Fare effective from	Mofussil (ordinary)	Mofussil (LSS)	Mofussil express	Deluxe	Super Deluxe
Tamil Nadu	6.12.01	28	-	-	32	38
Andhra	4.02.03	35	-	40	45	52
Kerala	1.10.01	35	43	46	54	63
Karnataka	1.05.03	28.5	-	37.25	42.50	50.75

*Source: Transport Department Policy Note 2004-05.***Railways:**

Railways have been discharging a unique role both as a commercial undertaking as well as a provider of public utility services. This mode of transport is environmentally friendly. The National Transport Policy Committee in the early 1980's had envisaged a *modal split* in which Railways was expected to carry 72 per cent of the long distance freight traffic and the balance 28 per cent going to road. But the actual trends of modal shares by rail and road have moved in opposite directions.

The importance of railways in the process of economic development can hardly be over-emphasised. Railroads are efficient form of transport for carrying passenger and freight. The energy consumption for freight movement on railroads is 440 joules / kg.km. as against 1836 joules / kg.km. required for trucks on roads in addition to pollution free operation. During 2003-04, the length of railway lines in the State was at 4015.86 kms. and broad gauge accounted for 51.33 per cent.

Table – 6 : Length of Railway Route in Tamil Nadu By Category

(Kms)

Sl.No.	Type of Gauge	2001-02	2002-03	2003-04
1.	Broad Gauge	2043.72 (48.88)	2071.02 (49.59)	2061.19 (51.33)
2.	Metre Gauge	2137.16 (51.12)	2105.61 (50.41)	1954.67 (48.67)
	Total	4180.88 (100.00)	4176.63 (100.00)	4015.86 (100.00)

*(Figures in brackets indicate percentage share to total).**Source: Southern Railway, Chennai 3.***Route Length:**

The route length of railways refers to the distance between two points on a railway treating all lines on the section as a single line. During 2003-04, the State is sharing 6.36 per cent of total route length of 63122 kms. of the country. The density of route (in terms of 1000 sq.kms. of geographical area) hovering around less than 7 per cent remains for years whereas route length served per lakh population has declined both in Tamil Nadu and at all India.

Table - 7 : Railway Route Length - Tamil Nadu and All India

Year	Total Route Length (Kms.)		% share of Tamil Nadu	Route Length (Kms.) per '000' Sq.Km. of Area		Route Length per 100,000 population (Kms.)	
	Tamil Nadu	All India		Tamil Nadu	All India	Tamil Nadu	All India
2001-02	4180.88	63140	6.62	32.18	19.21	6.70	6.09
2002-03	4176.63	63140	6.61	32.15	19.21	6.64	5.98
2003-04	4015.86	63122	6.36	30.91	19.20	6.30	5.88

Source: 1. Southern Railways, Chennai - 3.
2. Economic Survey, 2003-04, CSO, New Delhi.

Electrification of Route:

The economic viability of route electrification is measured by the rate of returns and tariffs for the power supplied by the Electricity Board. Out of total railway route length of 4015.86 kms., only 1077.46 kms. (26.83%) of length had been electrified in the State as of March 2004. Electrification in broad gauge accounted for a larger share of 22.85 per cent compared to 3.98 per cent in the metre gauge.

Gauge Conversion:

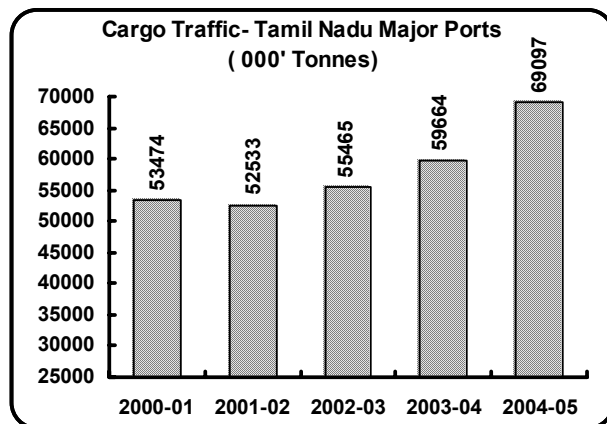
Gauge conversion has been imperative to cater to growing demand from both passengers and freight. However, the gauge conversion in the State has been constrained due to inadequate allocation of funds in successive railway budgets. As against the total requirement of Rs.2655.59 crores, the allotment was only Rs.527 crores during 2003-04. Meager allotment not only delays railway projects in the State but also leads to cost escalation.

Gauge conversion of Salem - Cuddalore, Rameswaram - Madurai, Tiruchi - Manamadurai, Tiruchi - Nagore and Villupuram - Katpadi sectors and a new line between Salem and Karur and an additional line between Attipattu and Korukkupet are some of the major projects under execution in the State. Investments for railway projects has tended to lag requirements.

Sea Ports:

Major Ports:

The State is having 1000 kms. length of coastal line. There are three major ports and 15 minor ports in the State. Three major ports in the State viz. Chennai, Tuticorin and Ennore play a crucial role in the provision of infrastructure support in the State. Transportation by ship, highly energy-efficient, can be used for trade wherever feasible.



The volume of traffics handled by the three major ports had ever been increasing over time. During 2004-05, the volume of traffics by these ports of Tamil Nadu was 690.97 lakh tonnes over and above the previous year's level of 596.64 lakh tonnes registering a growth rate of 15.81 per cent. Out of the total volume of traffics handled by the 13 major ports in the country, the three major ports of Tamil Nadu accounted for 18.01 per cent and Chennai Port alone formed 11.42 per cent. It was 4.12 per cent by Tuticorin Port and 2.47 per cent by the first privatised Ennore Port in India.

Table -8 :Commodity-wise Traffic at Tamil Nadu Ports ('000' tonnes)

Commodity	Traffics Handled		
	2002-03	2003-04	2004-05
POL	9410	10037	12546
Foodgrains	704	356	157
Other liquid cargo	425	694	601
Iron and steel	114	107	191
Fertiliser (finished)	566	565	846
Iron Ore	8019	8919	10160
Fertiliser (Raw)	1300	932	984
Edible oil	537	651	571
Coal	19806	17741	17545
Container	9520	11315	13069
Other cargo	5064	8347	12427
Total	55465	59664	69097

Source: 1. CMIE, Monthly Economic Review of Tamil Nadu Economy, May 2005. 2. Concerned ports.

Commodity-wise Traffic of Major Ports:

Out of 690.97 lakh tonnes of traffics handled in the major ports of Tamil Nadu in 2004-05, Chennai Port alone had handled 438.06 lakh tonnes (63.40%) followed by 158.11 lakh tonnes by Tuticorin Port (22.88%) and 94.80 lakh tonnes by Ennore Port (13.72%). Dry and liquid bulk constituted about 81 per cent of the total cargo handled in all the ports put together whereas container cargo was about 19 per cent. Among the major ports in the country, the container cargo of Tamil Nadu ports constituted 23.88 per cent during the review year.

Table - 9 : Commodity-wise Traffic at Tamil Nadu Ports - 2004-05

(000 tonnes)

Commodity	Chennai		Tuticorin		Ennore		Tamil Nadu		% share to all India major ports
	Quantity	% Change	Quantity	% Change	Quantity	% Change	Quantity	% Change	
POL	11699	27.1	743	32.9	104		12546	28.5	9.91
Food-grains	27	35.0	130	-61.4			157	-56.0	4.15
Other liquid cargo	164	-62.0	437	2.1			601	-30.1	5.96
Iron and steel	191	10.4					191	10.4	2.87
Fertiliser - finished	549	33.3	297	63.2			846	42.4	22.13
Iron ore	9598	6.5	42		520		10160	12.8	13.33
Fertiliser (Raw)	320	-1.8	664	9.0			984	5.2	16.93
Edible oil	455	-20.3	116	1.8			571	-16.6	15.50
Coal	3315	17.2	5374	2.1	8856	-4.5	17545	1.0	33.21
Container	9864	14.3	3205	19.3			13069	15.5	23.88
Other goods	7624	49.3	4803	37.4			12427	44.4	31.52
Total	43806 (63.40)	19.3	15811 (22.88)	15.6	9480 (13.72)	2.2	69097 (100.0)	15.8	18.01

Figures in bracket indicate port-wise share to total of Tamil Nadu ports. Source: CMIE - Tamil Nadu Economy, May 2005.

As per commodity-wise traffic, coal was handled significantly in the State with a share of 25.39 per cent in the total traffic in the State and a share of 33.21 per cent in the total traffic of all the major ports in the country. The share of iron ore also stood at significant 14.70 per cent in the total traffic in the State and at 13.33 per cent in the total iron ore traffic in the major ports of the nation.

Performance of Chennai Port:

During the review year, the Chennai Port had handled 438 lakh tonnes in the year 2004-05 compared to 367 lakh tonnes in the previous year. The tonnage increased in terms of exports over imports during 2003-04. Out of 367 lakh tonnes in 2003-04, imports increased by 3.52 per cent, whereas exports recorded a jump of 16.55 per cent in 2003-04. The port is looking to growth opportunities by incremental growth in cargo traffic and reduced turnaround times. Its growth strategy is to emerge as a hub. Handling of iron ore and car boosted the exports in this port in 2003-04. It had achieved a whopping 319 per cent increase in car traffic movement due to exports from Hyundai Motors manufactured in the State. The port exported 35559 cars in 2003-04 through its dedicated car carriers against 8432 cars in 2002-03. After completion of car parking terminal spread over 47700 sq.metres at a cost of Rs.3 crores, the Chennai Port will be able to stock 3000 cars in the yard and would be able to handle parcel size of 4000 to 12000 cars.

Tuticorin Port:

Because of its close proximity to the international shipping lane, the Tuticorin Port could be developed as a hub in South Asia. This port has natural advantages like its strategic location, all weather operationality, availability of vast hinterlands of agriculture and industrial importance and well connected by rail and roads.

The Tuticorin Port got a major boost when a Shipping Ministry included it in the Western Circuit of crucial service along with Mumbai, Goa, New Mangalore and Kochi Ports for growth of tourism. Since Tuticorin is closet Indian Port to the port of Colombo, it is expected that cruise vessels calling at Colombo would consider calling at Tuticorin too.

Ennore Port:

The first corporatised port in the country commenced in 2001 is a third major port in the State is helping to decongest the Chennai Port. This port imported 88.56 lakh tonnes of coal and 5.20 lakh tonnes of iron ore during 2004-05.

5.6.Minor Ports:

There are 15 minor ports in the State spread over the coastal length of her 1000 kms. They are called anchorage ports, where cargo is transhipped from the vessels at mid-stream to shore and vice versa through lighters / barges. Crude oil, cement, edible oil, liquid ammonia, naphtha, proplene gas, machineries etc. are being handled in these ports. In 2004-05, these ports handled 8.54 lakh tonnes as compared to 6.90 lakh tonnes of commodities in the year 2003-04 registering a growth of 23.77 per cent.

Box - 3

Minor Port Policy of Tamil Nadu

- *to facilitate establishment of port based thermal power plants by providing exclusive port facilities to import coal, naphtha, oil, natural gas;*
- *to provide port facilities to promote export oriented industries and port based industries along the coastal districts of Tamil Nadu;*
- *to decongest Highways and Railways by providing facilities for coastal traffic along the East Coast and to promote tourism;*
- *to provide facilities to encourage ship repairing, ship breaking and construction of floating crafts.*

Source: Policy Note on 'Transport' 2004-05.

Sethusamudram Ship Canal Project (SSCP):

The SSCP with a capital cost of Rs.2427 crores aims at creating a navigation channel from the Indian Ocean to the Bay of Bengal through Gulf of Mannar, Adam's Bridge, Palk Bay and Palk Strait within Indian waters. The first proposal of this project dates back to 1860. The project which is of strategic importance is a bridge with neighbours. This project will act as a catalyst of industrial development, spur trade and commerce, advance coastal shipping and general employment. The project authorities are expected to be alive and sensitive to environmental issues. It primarily avoids circum-navigation of ships sailing from the west to the east coast of India, around Sri Lanka with additional distance of 254 to 424 nautical miles and 21 to 36 hours of sailing time. To have a continuous navigable route around the penninsular running India's territorial waters due to the presence of a shallow patch called 'Adam's Bridge' at Pamban where the navigable depth is only about 3 metres. Hence the SSCP is under implementation.

Airports:

The trends in the domestic and international air traffics in the State are very much encouraging. The total passengers in all the airports of Tamil Nadu rose to 63.31 lakhs during 2004-05 from 50.71 lakhs in the preceding year registering a growth of 24.85 per cent. Out of total passenger arrivals, the domestic passengers constituted 37.94 lakh or 59.93 per cent. The cargo handled in both the airports estimated at 192 thousand tonnes registered a growth of 20.75 per cent during the year.

Table - 10 : Civil Aviation : Aircraft, Passenger, Cargo traffic at Domestic International Airports of Tamil Nadu

Year	Aircraft movements (Nos.)	Passenger handled (Lakh Nos.)	Cargo Handled ('000' tonnes)
Domestic			
2002-03	36680 (12.73)	25.85 (8.70)	33 (17.86)
2003-04	44476 (21.25)	29.04 (12.34)	38 (15.15)
2004-05	52564 (18.19)	37.94 (30.65)	44(15.79)
International			
2002-03	15785 (19.83)	20.29 (12.72)	108 (13.68)
2003-04	16295 (3.23)	21.67 (6.80)	121 (12.04)
2004-05	20605 (26.45)	25.37 (17.07)	148 (22.31)
Total			
2002-03	52465 (14.78)	46.14 (10.44)	141 (14.63)
2003-04	60771 (15.17)	50.71 (9.90)	159 (12.77)
2004-05	73169 (20.40)	63.31 (24.85)	192 (20.75)

Note: Figures in brackets indicate the percentage change over the previous year.

Source: CMIE - Monthly Review of Tamil Nadu Economy, June 2004 & July 2005.

In 2004-05, Coimbatore Airport had witnessed a hefty growth of 42.4 per cent in the domestic passengers and posted a negative growth of 4.7 per cent in the international passenger movements.

Table - 11 : Air Port Performance - 2004-05

Airports	Passengers (000 nos.)	% change	Cargo (Tonnes)	% change
Domestic				
Chennai	3233.3	29.2	39427	14.1
Coimbatore	378.0	42.4	3753	36.4
Madurai	158.5	28.7	429	5.9
Tiruchirapalli	24.3	76.4	31	(-)20.5
International				
Chennai	2394.9	16.6	146443	22.5
Coimbatore	13.1	(-)4.7	1109	(-)40.5
Tiruchirapalli	129.5	30.1	301	110.5
Total	6331.6	24.8	191493	20.2

Source: CMIE, Monthly Review of Tamil Nadu Economy, July 2005.

Rise in Chennai Air Traffic:

There was a moderate rise in international passenger traffic in Chennai Airport. During 2004-05 Anna International Terminal (AIT) recorded a growth of 16.6 per cent and Kamarajar Domestic Terminal registered a growth of 29.2 per cent. Moreover, the strident growth witnessed in the service, auto & IT sectors besides increased connectivity and growth in traffic highlight the need for augmenting the infrastructure at Chennai International Airport.

Communication:

Postal Net work in Tamil Nadu:

There were 12189 post offices functioning in the State during 2002-03 sharing 7.85 per cent of the nation's total of 1.56 lakh post offices. On an average, a post office in the State serves 10.66 sq.km. of total geographical area and a population of 5177 as against the of 21.13 sq.kms. of geographical area and a population of 6602 at the national level.

Box - 4			
Postal Net Work - International Comparisons			
Country	Permanent Post Office	Average Population served by a Post Office	Average area served sq.km. by a Post Office.
China	76358	168851	125.68
India	155618	6602	21.13
Indonesia	19881	10806	95.80
Malaysia	1207	19085	273.20
Sri Lanka	4638	4158	14.15
United Kingdom	17243	3460	14.16
U. S. A.	37683	7657	248.72
<i>Source: Economic Survey, 2003-04, GOI.</i>			

Tele Communication:

Tamil Nadu is one of the major States in terms of Telecom. Telecom growth has causal relationship with the IT sector. During the Ninth Five Year Plan period the State has witnessed a boom in the PCOs landline segment is in the order of 132520 numbers including 468 highways public telephone booths. The Telecom sector, along with Information Technology, is witnessing rapid developments.

Table- 12 : Public Telephone Booths-Ninth Five Year Plan

State	Number of PCOs	% Share
Tamil Nadu including Chennai	132520	17.14
Maharashtra including Mumbai	177799	23.00
Andhra Pradesh	79930	10.34
Karnataka	45774	5.92
Madya Pradesh	43258	5.60
Kerala	30188	3.91
Rajasthan	28076	3.63
All- India	772937	100.00

Source: "The Hindu".

The tele-density (number of telephones per 100 persons) in the State in 2002-03 is 6.25 against 7.02 tele-density of nation.

In the Tamil Nadu Circle, in 2002-03, there were 2281 exchanges with 39.84 lakh number of telephones in use and PCOs numbering to 165227 and 1600890 cell phones. Rapid expansion in the telecom sector is accompanied by a simultaneous significant technological changes. There is a continuing mass shift in addition the subscribers base for fixed line to mobile in the recent years. The growth of mobile phones during the review year was accelerated by the introduction of Calling Party Pager (CPP) regime introduced by the Centre from May, 2003.

Box - 5	
International Teledensity Comparison - 2003	
Countries	Tele-density
Australia	126.18
Bangladesh	1.56
Brazil	42.38
China	42.32
India	7.02*
Indonesia	9.17
Nepal	1.70
Pakistan	4.42
Sri Lanka	9.57
United Kingdom	143.13
United States of America	116.43
*As on March 2004.	
Source: Economic Survey 2003-04, GOI.	

During 2004-05, the net addition of cellular subscriptions in the State increased by 16.60 per cent in comparing to a huge rise of 383.85 per cent in the previous year. In all 18.05 lakh subscribers were added to the State during the period, which accounted for 12.14 per cent of all-India net addition of subscriptions. At the national level the net addition of subscriptions grew by 10.43 per cent during the review year.

At the end of March 2005, the State cumulatively had 33.53 lakh number of cellular subscribers from 16.28 lakh numbers at the end of March 2004, registering a growth of 105.96 per cent. The total number of subscribers in the State had accounted for 8.17 per cent of the total subscribers in the country.

Table - 13 : Cellular Subscribers

(Lakh Numbers)

	Net Addition			Cumulative Subscribers		
	Tamil Nadu	All India	% share to All India	Tamil Nadu	All India	% share to All India
2002-03	3.20 (356.59)	62.57 (119.25)	5.11	6.15 (108.27)	126.88 (97.29)	4.85
2003-04	15.48 (383.85)	134.67 (115.23)	11.50	16.28 (164.72)	261.54 (106.14)	6.22
2004-05	18.05 (16.60)	148.72 (10.43)	12.14	33.53 (105.96)	410.26 (56.86)	8.17

Note: Figures in brackets indicate the percentage change over the previous year.

Source: CMIE Monthly Economic Review of Tamil Nadu Economy, May, 2004 & July 2005.

Private Basic Telecom Services:

The Liberalised Policy of the nation has opened the door for entry of private sector. The Private Basic Telecom Services in the State is deeply rooted. The State had 61693 Private Wireline Services sharing 0.17 per cent in all India as on March 2005. The State's share in the fixed wireless services was 4.73 per cent and 4.32 per cent for wireless mobile services. In all, the State had a share of 1.43 per cent in private basic telecom services at 7.6 lakh.

Table - 14 : Private Basic Telecom Services in Tamil Nadu as on March 2005

	Wireline	WLL (F)	WLL (M)	Total
Bharti Infotel Ltd.	59878			59878
Tata Tele Services Ltd.	97	128770	29322	158189
Reliance Infocomm Ltd.	1718	42832	494497	539047
Total for Tamil Nadu	61693	171602	523819	757114
All India	37334000	3622175	12128525	53084700

Figures in bracket indicates the percentage share to all India.
Source: CMIE, Monthly Economic Review of Tamil Nadu, May 2005.

Investment in Infrastructure Sector:

Enhancement of the value of investment in the infrastructural activities tends to positively impact on GDP growth through improved production of additional infrastructure services and its impact on the demand side of the economy. Thus, a huge investment is vital to improve the infrastructural facilities in the State economy. Investment in infrastructure tends to tag the requirement. Solutions ranging from enhanced public, private partnerships, innovative financing strategies, issues like returns and levy of user charges are major challenges.

Table - 15 : Gross Fixed Capital Formation in Infrastructure

(Rs. lakhs)

Year	GSDP (Current Prices)		Total	GFCF (Current Prices)		Total	Ratio of GFCF to GSDP		
	Electri- -city, gas, water supply	Transp- -ort by other means, storage & communi- -cation		Electri- -city, gas, water supply	Transp- -ort by other means, storage & communi- -cation		Electri- -city, gas, water supply	Transp- -ort by other means, storage & communi- -cation	Tot- -al
1993-94	129468	384457	513925	75172	86429	161601	0.58	0.22	0.31
1994-95	180585	473690	654275	143835	61123	204958	0.80	0.13	0.31
1995-96	212982	544794	757776	156882	107694	264576	0.74	0.20	0.35
1996-97	243542	612739	856281	146537	112444	258981	0.60	0.18	0.30
1997-98	270417	718869	989286	136048	121403	257451	0.50	0.17	0.26
1998-99	349369	831467	1180836	118854	137134	255988	0.34	0.16	0.22

Source: Department of Economics & Statistics, Chennai - 6.

The gross fixed capital formation in infrastructure investment at current prices increased from Rs.161601 lakhs in 1993-94 to Rs.255988 lakhs in 1998-99. But as a ratio of GFCF to GDSP, it declined from 0.35 per cent in 1995-96 to 0.22 per cent in 1998-99. However, it is hoped that the accelerated investment during Tenth Plan will have a positive improvement to capital formation in this sector.