



Confederation of Indian Industry

Thoothukudi

Vision 2025



A report prepared for CII by
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Thoothukudi

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1. Thoothukudi

The etymology of the word “Thoothukudi” can be traced back to the period when the locals used to tap drinking water by digging small ponds (oothu in Tamil). Oothukudi, meaning to dig and drink, later came to be known as Thoothukudi. The district has a long and an illustrious history dating back to the Pandyan era. In the tenth century A.D. the region was conquered by the Cholas and re-conquered by the Pandyan kings. Subsequently, Thoothukudi was ruled by Madurai Nayaks, the Portuguese, the Dutch and finally the English. The English ruled Thoothukudi, which was a part of Tirunelveli district, till India’s independence¹.

Thoothukudi district was carved out of the erstwhile Tirunelveli district on October 20, 1986. Thoothukudi was a major natural pearl fishing center till last century. It has one of the oldest ports in the world. The lighthouse built in 1842 marked the beginning of Thoothukudi’s harbour development. India’ independence struggle has strong links with Thoothukudi. Notable freedom fighters like Subramaniya Bharathi, V.O. Chidambaram Pillai, Vanchinathan and Veerapandia Kattabomman hailed from Thoothukudi. The district has also been the headquarters of prominent missionaries like G.U. Pope, Veeramamunivar and Caldwell, who besides their missionary work, also contributed to the development of Tamil language and literature². Thoothukudi was established as a Municipality in 1866 and on August 5, 2008 attained the status of Corporation after 142 years³.



This is the “Vision 2025” document for Thoothukudi city as articulated by the various stakeholders in Thoothukudi city – tiny, small, medium and large industry, government officials, business executives, workers, students, educationists, health administrators, non governmental organizations, etc. It is an attempt at visualizing what can be achieved by 2025, if resources can be mobilized and the development of the city is brought into focus so that Thoothukudi’s potential can be converted into reality.

The Confederation of Indian Industry (CII) has helped articulate the “Vision 2025” of Tamil Nadu in April 2008 and has presented it to the higher echelons of the Government of Tamil Nadu. The economic and social vision articulated therein would require substantial progress in industrialization, urbanization and infrastructure building, and bringing health, education and well-being to the population of Tamil Nadu.

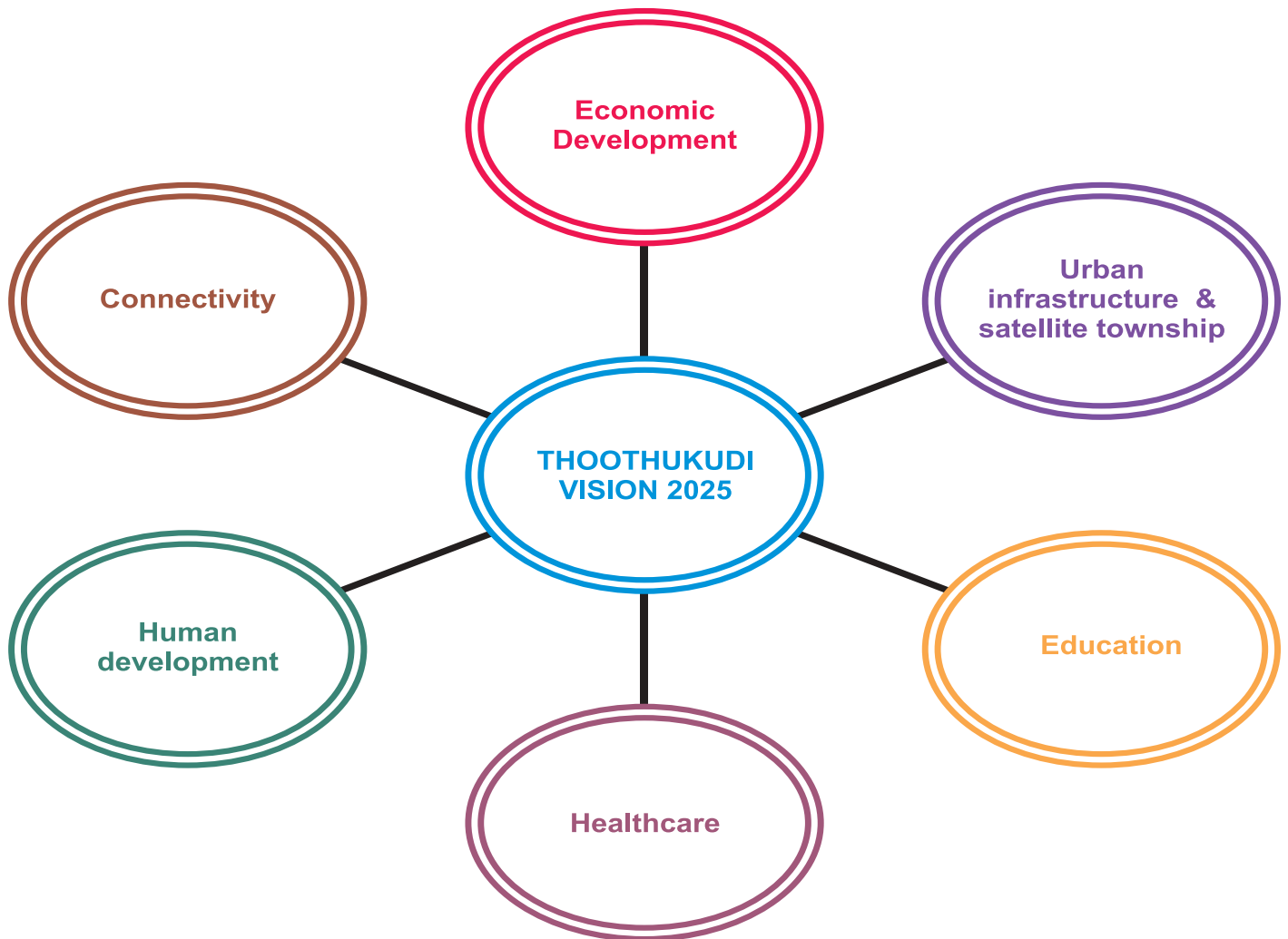
Confederation of Indian Industry’s vision 2025 for Tamil Nadu recognizes the importance of urbanization and envisions Thoothukudi as one of the four mega cities of Tamil Nadu that would drive the industrialization, economic and social advancement of Tamil Nadu. The importance of regional balance in development and that of development of southern districts of Tamil Nadu to achieve this regional balance cannot be overstated.

The Thoothukudi Vision 2025 document articulates the aspirations and the scale of transformation that is required in the various parameters of development in the city and its environs to achieve these aspirations. The report also discusses the unique advantages that Thoothukudi has that would be instrumental in achieving this transformation as well as the way forward.

Madras Consultancy Group (MCG) has prepared this report on behalf of the **Confederation of Indian Industry, Thoothukudi**. The study methodology included extensive interaction with various stakeholders in Thoothukudi and Chennai as well as in-depth secondary research. The study was conducted between May and July 2008.



Components of Thoothukudi Vision 2025



II. Executive Summary

Economic potential of Thoothukudi

Thoothukudi is not just any small town tucked away in a corner of India but a town with a unique combination of several advantages, a combination that is not found elsewhere in India in such abundant measure. The uniqueness of Thoothukudi stems from the following:

- Thoothukudi has Tuticorin Port, a fast growing and efficient major port in calm waters that makes it operational throughout the year
- The Port is located at the southern tip of India just 20 hours from the East-West trade route
- Large tracts of dry non-agricultural lands are available around the town's periphery that would enable development of industries and the geographical spread of the city
- There is already a presence of large, medium and small industries in and around the town as well as in the district
- The surrounding hinterland possesses significant eco, heritage and leisure tourism potential
- It is in Tamil Nadu, a state that is in the forefront of economic development in India
- The population is industrious, skilled and aware



- In terms of human development and gender development⁴, Thoothukudi with a HDI of 0.791 and GDI of 0.799 ranks second only to Chennai (HDI 0.842 and GDI 0.832) and in terms of per capita district gross domestic product in purchasing power parity terms, it ranks 7th in Tamil Nadu. This indicates that the quality of human resources available in the district is very good.

The details of the resources available and the economic potential are given in Annexure 1 and Annexure 2 respectively. A summary of the aspirations and vision gathered from interactions with the stakeholders in Thoothukudi is given in Annexure 3.

By 2025 Thoothukudi would become:

- A sustainable industrial and commercial city that drives the economic advancement of the hinterland and plays a significant role in the economic well being of Tamil Nadu and India
- A city that provides the right environment and infrastructure for industrial investment, and vast employment opportunities, all in a sustainable manner without damaging the environment
- A lively livable city that provides its inhabitants quality and affordable housing, access to adequate power and water supply, good city infrastructure, entertainment, green spaces, and in general, a great ambience
- A healthcare conscious learning city that provides its inhabitants affordable high quality health care services, educational institutions par excellence and a place to nurture and grow talent
- A well managed city with the involvement of all stakeholders

Economic Vision 2025

- By 2025, the net domestic product of the city is forecast to reach Rs. 13,890 crores and the per capita income of the city will have tripled growing at a CAGR of 6% per annum.

- **NDP: Rs.13,890 crores**
- **Per capita income: Rs.113,000 per annum**

- The dry non agricultural lands in and around the city would be utilized in a planned and sustainable manner for the development of the city – housing, major manufacturing and service industries, including tourism, which would in turn drive the economic growth of Tamil Nadu, more particularly, its southern districts

- **10,000 acres of exclusive industrial area**
- **Establishment of industries such as chemical, minerals, fertilizers, copper, shipbuilding, auto components, engineering ancillary units and an automobile major; a food processing SEZ**

- Tuticorin Port would be a major transshipment hub, such as Singapore, or Jebel Ali, for India with post-Panamax mother ships



- This transformation will improve revenue generation in the State as well as in the country

The port will handle about 130-150 million tonnes, including 5 million Twenty-foot Equivalent Units (TEUs) containers.

- The port facilities and the dry lands would be put to optimum use to enable major thermal power plants to be set up in the district, within the environmental carrying capacity of the area

- **7,000 MW of power generating capacity**
- **Natural gas supply for industries and households.**

- A mature tourist centre; several star category hotels, resorts and restaurants, and places of entertainment

Fascinating tourism potential

Urban city vision 2025



The city would be home to more than a million people providing them quality urban infrastructural facilities:

- The expanded city would have developed in a planned manner with proper zoning regulations that would enhance the quality of life of its residents
- There would be no slums in the city and all urban poor would be housed in proper buildings with basic services for civilized living

Area	206.31 sq km
Population	1,230,000
Population density	60 per ha

Clearly demarcated residential, commercial and industrial zones.

- Treated water in sufficient quantity would be supplied to the residents and all households would get tapped water at their dwelling units

- **135 litres per capita daily (lpcd)**
- **100% dwelling units, including low income groups to have water connection, BPL families not more than 15 per tap**
- **216 million litres daily (mld)**

- The public and recreational spaces available in the city would equal, if not better, those available in the major cities of India.

- **Per capita green space 25 square meters of parks.**
- **Sports and recreation available within 2 km radius for every citizen**
- **1 major mall theatre complex in every suburb**

- The city would have congestion-free, tree-lined black topped roads, with cycle tracks in all major thoroughfares with modern energy efficient street lighting and underground ducting that allows traffic to flow fast and safe.
- The quality of public transportation within the city would be such that people need not depend on private transport to commute within the city

- **1,000 km of BT/ concrete roads, with arterial roads and major thoroughfares 4 lanes**
- **Truck terminals & parking bays for handling over 20,000 trucks at any time.**

- The city would have under ground drainage in all its areas with the entire sewage segregated at source, collected efficiently and treated in an ecologically sound manner

- **Sewage treatment- 160 mld**
- **Sewage disposal- 1,200 tonnes a day**



Connectivity vision 2025



- The city would be connected by well maintained 8 lane highways to Madurai and Tirunelveli; east coast highway to Chennai.

- **High speed double-line rail link to Chennai, Coimbatore, Bangalore and Madurai**
- **8 lane highway to Madurai; connect to NH4; east coast link to Chennai**
- **Backbone high speed Dedicated Freight Corridor to Nagpur**

- The railway connectivity would be greatly enhanced such that there would be fast trains to all major urban centres relevant to Thoothukudi
- The port cargo traffic would be increasingly handled by railways and the railways would be able to move containers and cargo to the Port within 36 hours from hinterland, as far away, as Nagpur.
- Tuticorin port - A hub for international sea tourism.
- The airport would be a major domestic airport and an international airport with flights to the Far East, Europe, etc.

International and domestic terminal



Social sector vision 2025



Education

- All children will be in good quality schools
- Technical education relevant for industry would be available in sufficient measure
- Employment oriented higher education in science, technology and humanities would be available
- Several institutions of higher learning in science, technology and humanities would be set up in and around Thoothukudi.
- Educational and research institutions of excellence, like IIMs and IITs, would be established in Thoothukudi that would attract academics and intelligentsia to Thoothukudi
- The possibility of starting a Marine university in Thoothukudi to be examined.

- **100% literacy**
- **Teacher-student ratio – 1:20**
- **1 in 2 higher secondary student in college**
- **6 Engineering colleges within city**

Healthcare

- The doctor population ratio would be 1:450 and hospital beds to population ratio will be 1: 250 and all specialities would be available within the city
- Hygiene and sanitation levels would be high and people would be health and hygiene conscious
- Medical colleges and hospitals would be of high standards

- **Doctor-population ratio 1:450**
- **Hospital beds-population ratio 1:250**
- **Life expectancy – 90 years**

Human development

- Thoothukudi would continue to maintain high levels and be one of the top districts in Tamil Nadu in terms of human development.



Investments

For Thoothukudi to develop as envisioned by the stakeholders, considerable investments would need to be made in infrastructure. Some of these investments would relate directly to the improvement of infrastructure of the town and are essential to attract private sector investments into the town. There is also a need for substantial other infrastructure investments, which will be of immense benefit to the town and are indeed a prerequisite for the envisioned growth to be realized, are actually investments that would benefit the larger economy of the State and the country as a whole.

While certain social sector investments will need to be made by the government, a large part of the infrastructure investments could be public private partnerships or wholly private sector investments. Infrastructure investments in city connectivity,



housing, power and water supply, etc. could be encouraged from the private sector with appropriate regulatory controls and oversight from the Government. Even in social sector, investments would be mainly needed from the government for providing essential social services for health and education. With the growth of the city and its economy, non governmental organizations and private entrepreneurs would also find it attractive to invest in health and education in the city.

An investment of Rs. 42,257 crores would be needed over the next 17 years to improve the connectivity of Thoothukudi and in the Power sector. Further, in city infrastructure an investment of about Rs. 8,885 crores would be needed to realize the Vision 2025 of Thoothukudi as a vibrant industrial city serving the southern part of Tamil Nadu. In all, an investment of Rs. 51,142 crores is essential till 2025.

E.1 Thoothukudi: Summary of investments

Rs. in crore			
	2008- 2015	2016 - 2025	Total
Infrastructure	21,126	21,131	42,257
Civil (Urban) infrastructure	2,540	2,705	5,245
Social infrastructure	1,700	1,940	3,640
Total	25,366	25,776	51,142

**An 'order of magnitude indication' of investments; not a precise estimate*

Table E.2 Investments required in infrastructure sector

Rs in Crore

Infrastructure	2008- 2015	2016 - 2025	Total
Tuticorin Port	4,572	3,500	8,072
Roadways	1,474	1,051	2,525
Railways	480	420	900
Airport	200	410	610
Power plants	14,400	15,750	30,150
Total	21,126	21,131	42,257

**An 'order of magnitude indication' of investments; not a precise estimate*

Table E.3 Investments required in Civic & Social infrastructure

Rs. in crore

Civic (Urban) infrastructure	2008- 2015	2016 – 2025	Total
City roads including street lights	1,200	1,250	2,450
Truck terminus	80	70	150
Water supply and drainage	500	575	1,075
Desalination plant	500	500	1,000
Sewage	215	245	460
Solid waste management	45	65	110
Total civic(urban) sector investments for expansion	2,540	2,705	5,245
Social sector investments for expansion			
Slum improvement	400	600	1,000
Schools & colleges	725	725	1,450
Hospitals	575	615	1,190
Total social sector investments for expansion	1,700	1,940	3,640
Total Thoothukudi city improvements and expansions	4,240	4,645	8,885

**An 'order of magnitude indication' of investments; not a precise estimate*

Way forward

For realizing the Vision 2025 of Thoothukudi, concerted action would be needed from all the stakeholders involved, especially the Government.

Central Government

- Develop Tuticorin port into a major deep water port and transform it into a major container transshipment hub for India by 2025
- [Develop the logistics and warehousing potential to serve the hinterland by encouraging public private partnership](#)
- Improve the rail connectivity of Thoothukudi – double line and electric traction to Madurai and onward to Chennai; introduce high speed trains and connectivity to Coimbatore, Kochi and Bangalore
- [Develop a backbone dedicated freight corridor through to Hyderabad and Nagpur](#)
- Connect to Madurai through a 8-lane highway, to nearby urban centers through 4-lane highways and to Chennai through the East Coast Road
- [Extend the runway to receive wide bodied jets and upgrade the domestic terminal; in the next phase add an international terminal capable of handling direct flights to Europe and the Far East](#)
- Permit and encourage private investment in ferry services to Tiruchedur, Rameswaram, Kanniyakumari and later on to Colombo
- [Enhance of the power generation capacities in Thoothukudi district without jeopardizing the environment and coastal ecology of the district, through public and private investments](#)
- Develop Thoothukudi into a natural gas node by utilising natural gas reserves from Krishna-Godavari basin and from the eastern side of Ramanathapuram
- [Set up one central institution of higher learning, such as an IIT or an IIM, at Thoothukudi](#)



State Government

- Policy focus from the Government of Tamil Nadu that Thoothukudi would be developed as a major industrial and commercial centre in Tamil Nadu
- [Ensure at least two big ticket investments, possibly an automobile plant and a ship building unit](#)
- Set up the Thoothukudi Development Authority to oversee the planned and integrated development of the industrial and commercial areas in Thoothukudi corporation
- [Develop 10,000 acres of land for industrial purposes](#)
- Improve and promote the tourism assets around Thoothukudi
- [Seek funding from multi-lateral agencies for urban renewal of Thoothukudi especially in the areas of water supply, drainage, sewage and waste disposal, solid waste management, etc.](#)
- Encourage and permit the setting up of medical and engineering colleges and vocational training institutions, close to the city
- [Encourage the setting up of large general and super speciality hospitals](#)
- Develop Thoothukudi as a “model” district with special status



Local Administration

- Improve the urban and social infrastructure of the present Thoothukudi urban area by addressing the shortcomings
- Develop the newly added corporation areas especially towards Palayamkottai, in a planned manner; an appropriate master plan for development to be drawn up
- Existing zoning laws are to be strictly enforced
- Draw up an action plan to rejuvenate the water bodies in and around Thoothukudi
- Upgrade the 24 slums in the city such that requisite amenities are made available; new low cost housing schemes to be undertaken at suitable locations
- Upgrade the Government schools and ensure the modern methods of primary education such as Activity Based Learning and the Montessori System are introduced at the earliest; encourage the development of neighbourhood schools
- Accord the highest priority to the health and hygiene of the local populace particularly the economically disadvantaged; upgrade the primary health care centres through public private partnership
- Get specialist advice on reducing pollution in the city and making a quantum leap in improving the ambience of the city and its environs



Corporate Citizens

- Industry to assist in spreading the awareness of objectives and the intent of the Vision 2025, amongst the various stakeholders
- Industry to leverage their own network to promote Thoothukudi as a destination for setting up industries, services, educational and healthcare institutions through conducting road shows in other cities and holding conferences and exhibitions in Thoothukudi
- Industry to assist in specific areas such as skills development and enhancement, promoting tourism, building and enhancing the social infrastructure and so on
- Industry to actively participate in preparing the development plan of the city



III. Vision 2025 Thoothukudi

Advantage Thoothukudi

- **Tuticorin Port**

Efficient all weather port

The importance of a Port in driving economic development is self evident from the history of economic development world over. Closer home, Singapore, Hong Kong, Mumbai, and Chennai are what they are because of ports that enabled them to be the gateways for trade and commerce for their hinterland.

Tuticorin Port is an efficient port that has been registering substantial growth over the years. During the 10 years, 1997-98 to 2007-08, the Port has grown by a compounded annual growth rate of about 8% p.a. Its growth during 2007-08 was a whopping 19.3%. It is an all weather port which is not disturbed by the monsoon and the presence of Sri Lanka to the east renders the sea off Thoothukudi calm.

Expansion plans

The capacity additions now envisaged by Tuticorin Port through the National Maritime Projects Phases I and II would enable the Port to increase the tonnages handled at the Port to about 85 million tonnes by about 2012 and 130 million tonnes by 2025.

Located ideally for becoming a hub port

Tuticorin Port's location at the southern tip of India near the East-West trade route makes it ideally suited to become a major container hub port for Indian container cargo that is presently being transshipped in foreign ports. The fast growing Indian economy and increased containerization of Indian cargo would give tremendous boost to the Port's tonnages handled if it were to become a hub port. A study commissioned by the Tuticorin Hub Port Development Council in 2005 indicates that if the infrastructure at the Port is developed so that it can handle post-Panamax vessels, container traffic can increase from the current 450,000 TEUs in 2007-08 to 2.31 million TEUs. by 2015 and 3.72 million TEUs by 2020. This can be forecasted at 5 million TEUs per annum by 2025.



Potential for a ship building yard

Thoothukudi is in a good position to house a ship building yard because of its strategic location, availability of suitable land mass and human resources, topographical and geographical condition, rocky sea bed requiring no maintenance dredging, sheltered shoreline, easy accessibility by road, rail and air, and suitable weather condition. Realizing this potential, the Port Trust had, in 2006, carried out a pre-feasibility study. A ship building yard would provide considerable scope for jobs and economic activity, not only at the yard, but also at the various ancillary units that would come up to support this facility.⁵

- **Availability of dry non agricultural land**

Thoothukudi is situated in a rain shadow region and hence, there is no significant agricultural activity around the town. The land is flat and stretches dry and arid for kilometers, especially towards the west and the north.

- **Power projects**

The presence of Tuticorin Port, and availability of land have already given rise to plans for location of large coal based power projects in the vicinity of Thoothukudi, in addition to the existing coal based 1,050 MW thermal power plant of TNEB. Based on announcements, it looks possible that about 3,000 – 4,000 MW of power generating capacity may get added near Thoothukudi in the next 5-6 years or so. These additions to power generation would give a further fillip to the growth of Tuticorin Port/ other ports near Thoothukudi, as coal handling capacity would have to be created near the power plants. Availability of power in such abundance would attract industries to locate near Thoothukudi.

Major projects are in the pipeline for bringing natural gas to Thoothukudi. Reliance industries aims to produce 80 million metric standard cubic metres of gas a day (mmscmd) by mid-2008 from its two fields in the prolific Krishna Godavari basin⁶. The Kakinada-Vijayawada-Nellore-Chennai pipeline will be extended to Thoothukudi. This will supply gas to SPIC's fertiliser complex and other customers in Thoothukudi⁷. Reliance Gas Transportation Infrastructure Ltd., a group firm, had submitted the proposal to lay the 670 km pipeline from Chennai to Thoothukudi⁸.

The abundant natural gas reserves off the eastern coast of Ramanathapuram offer a great potential for the development of industries in and around Thoothukudi. The gas can be supplied through dedicated pipelines to the industries. It is estimated that the industrial demand in Thoothukudi alone is 3 mmscmd⁹

• Presence of industries

Thoothukudi city and surrounding areas have considerable presence of industries in several industrial sectors. The large industries (other than infrastructure providers i.e. the Port and the TNEB power plant) are Sterlite (copper), SPIC (fertilizers and chemicals), Dharangadhara Chemicals (chemicals) and Kilburn Chemicals (titanium dioxide). There are several textile mills also in the district. The presence of these large industries can lead to establishment of industries that have product synergies with these units.

Several medium and small industries, including traditional ones, are situated in Thoothukudi and its neighborhood. The major segments include salt – industrial and domestic, marine products, minerals (Ilmenite, Garnet, etc.), dry flowers exports, edible oil extraction, readymade garments, and senna (medicinal herbs) exports. In the service industry, logistics and port related services industry is a thriving segment whose growth is directly related to the growth of the Port. Even though salt industry in Thoothukudi is now facing certain issues such as higher costs, shortage of labour, small holdings, etc. if these issues are addressed, the industry can continue to sustain itself and provide employment. Industries such as dry flower exports, textile garments, logistics and port related industries are industries with great potential and are employment intensive.

• Tourism assets

Thoothukudi and surrounding districts have many places of tourist interest - heritage and religious tourism, leisure tourism, eco tourism, wildlife tourism, etc. For heritage and religious tourism, Nava Tirupathi temples, of special importance in the Hindu Vaishnavite tradition, are located in the district in close proximity to each other on either side of the river Tamirabarani and the famous Tiruchendur shore temple in the outskirts of Thoothukudi. Visits to famous temples in the nearby southern districts, such as the Rameswaram temple and the Madurai Meenakshi temple, can be combined with these and other temples in the district. There are several places of historical interest associated with the Indian Freedom struggle such as the Kattabomman Fort in Panchalankurichi, etc. Sites of archaeological significance at Adichanallur and of ancient history at Kazhugumalai are also present in the district.

The Gulf of Mannar Bio Sphere situated along the coast of Thoothukudi has 21 small islands and it abounds in marine life and coral reefs and a vast expanse of shallow waters which may be suitable for boat trips, diving or viewing through glass-bottomed boats. It may be possible to develop the more suitable of the small islands as beautiful resorts that can cater to affluent foreign and Indian tourists, *after a detailed environmental assessment study to determine whether these islands can be developed without affecting the ecology of the Gulf in any manner*. Manapadu, a picturesque beach along the Thoothukudi district coast can also be developed into a tourist resort. There are several scenic places such as Agasthiar Falls, Banatheertham, Ayyanar Sunai, Kutralam, Manimutharu falls, Papanasam falls, Mancholai (hill station), and Thenmalai (in Kerala close to border), along the western ghats in Tirunelveli district which are also accessible from Thoothukudi. Kanniyakumari, a major tourist attraction, is near Thoothukudi.

There are several places for a tourist interested in wildlife - Kundankulam Bird Sanctuary, Kalakkadu sanctuary, Vallanadu hills, Sengaltheri and Mundanthurai reserves, etc. situated in Tirunelveli district which can be accessed from Thoothukudi. *Here again tourism may be developed after assessing the ecological impact of such activity on the sanctuaries*.

The combination of Tuticorin Port and so many places with potential for heritage, leisure, eco and wildlife tourism around Thoothukudi as well as in nearby southern districts, offers a great opportunity for cruise tourism with Tuticorin Port as the gateway. The Port is one of the five ports identified by Government of India for developing cruise tourism. By establishing and being part of a successful cruise tourism circuit, affluent foreign and Indian tourists can be attracted, which would give a great boost to the economy of the area.



The Economic Vision

The development in the various economic spheres above would have spin off and multiplier effect in and around Thoothukudi, especially in service industries – public utilities, banks and commercial establishments, retailing, travels and hospitality industry, entertainment, etc. that would add to the level of economic activity in the city.

The Vision 2025 for Thoothukudi, therefore, envisions the realization of the city's economic potential that would attract investment, for the development and growth of the city and its environs.

The economic vision 2025 for Thoothukudi is that

- **Tuticorin Port would be a major transshipment hub for India with post Panamax mother ships calling at the port, thus, contributing to Tamil Nadu's and the nations' economy**
- **The dry non agricultural lands in and around the city would be utilized in a planned and sustainable manner for the development of the city – housing, major manufacturing and service industries, including tourism, which would in turn drive the economic growth of Tamil Nadu, more particularly, its southern districts**
- **The port facilities and the dry lands would be put to optimum use to enable major thermal power plants to be set up in the district, within the environmental carrying capacity of the area**
- **The per capita income of the city's citizens would more than triple and would be around of Rs. 113,000 per annum.**

The growth envisioned for the economic activities of the city and its environs is given in Table 3.1

Table 3.1: Economic Development of Thoothukudi

Segment	Current	2015	2025
Tuticorin Port			
Container handling	Not a transshipment hub	Transshipment hub	Major transshipment hub for India
Draft	10.7 to 10.8 Meters	14.5 Meters (Handling up to Panamax vessels)	17.5 Meters(Handling Post Panamax vessels)
Tonnage handled (million tonnes)	21.5	80 - 85	130 – 150
Containers included above (TEU) (in millions)	0.45	1.4	5.0
Power generation capacity	1,050 MW	4000 MW	7000 MW
Natural Gas supply	Not Available	Gas-based industries	Gas-based industries and households
Industrial areas housing industries (acres)	About 1,700 ¹⁰	5,000 acres	10,000 acres
Large industries	Chemical, fertilizers and copper	Existing industries, 3 times the present size Ship building and one automobile major A food processing SEZ	Existing industries 6 times the present size Ship building, one automobile major
Medium, small scale and service industries	Salt, marine, dry flower export, minerals, readymade garments, logistics, and port related services etc.	3 times the present size Industrial segments to include engineering, auto and ship building ancillaries	6 times the present size Industries will encompass the current including segments that would come up by 2015.
Tourism			
Industry status	Not on tourist maps; Places of tourist interests not well known and developed; tourists mostly pilgrims and locals – day tourists	Tourism attractions well developed and well known with infrastructure; substantial number of affluent foreign and Indian eco, leisure tourists; cruise tourism popular	Well established mature circuits catering to all types of tourists
Developments in Thoothukudi	Hospitality, tour operators, etc. on small scale	Well developed tourism business with tie ups for promoting and attracting tourists with a few star category hotels	A mature tourist centre; Several star category hotels, resorts and restaurants, and places of entertainment
Per capita Income	Rs.34,500	Rs.63,000	Rs.113,000
NDP Thoothukudi town/ city	Rs.766 crore ¹¹	Rs.4,540 crore	Rs.13,890 crore

The details of the resources available and the economic potential of Thoothukudi and its surrounding areas are given in Annexure -1 and Annexure - 2 respectively.

Growth Vision 2025 for the urban area of Thoothukudi

Area, population, and density

On August 5, 2008, Thoothukudi became the 10th Corporation in Tamil Nadu¹². Till then, Thoothukudi was a special grade municipality with an area of 13.47 sq. kilometers comprising of 11.2 square kilometers of developed area. Of the developed area, 7.1 square kilometers were put to residential use and 1.02 square kilometers were put to industrial and commercial use. The boundaries for the newly-formed corporation would be drawn by annexing 17 village panchayats in the periphery of Thoothukudi town. The Corporation of Thoothukudi after the annexation of these panchayats would have an area of 206.3 square kilometers.

The population of Thoothukudi corporation area is now 222,000 with a density of 165 persons per hectare. The population of the town together with the 17 village panchayats is at present 464,500 and the combined density is 23 persons per ha.¹³

The industrial and service sector growth envisioned would translate into substantial additional employment and increase in the population of the urban area and consequent expansion of the city. There would also be substantial increase in the floating population on account of the Port and the increase in tourism and business activities. Considering the expansion in population that certain major cities and their outgrowth experienced during their growth phase, and considering that Thoothukudi will be starting from a smaller population base with very substantial potential for growth, it may be reasonable to assume a growth rate of about 7– 8 % per annum in the population of Thoothukudi and its immediately surrounding areas in the next 7 years and, thereafter, about 5 -6% till 2025.¹⁴ Assuming an annual growth rate of 6.5% during the period 2008-2015 and 5.5% during the period 2015-2025, the population for Thoothukudi Corporation would increase to 720,000 in 2015 and 1,230,000 in 2025.

In the Vision for Thoothukudi City, the population and population density would be as given in table 3.2:

Table 3.2: Size of Thoothukudi city

	2008 Thoothukudi Corporation	2015 Thoothukudi Corporation	2025 Thoothukudi Corporation
Area sq.km	13.47	206.31	206.31
Population	222,000	720,000	1,230,000
Population density (persons ha.)	165	35	60

The density of population in 2001 in Chennai Corporation area was 247 persons per hectare. This indicates that the projected population density for Thoothukudi is not only quite sustainable but also provides considerable room for further expansion.

Planning for growth

It is essential that the envisioned accelerated growth is planned and managed such that haphazard growth is avoided. It is, therefore, essential that a proper city expansion plan with proper zoning regulations is drawn up and implemented so that the city would function efficiently and at the same provide good living ambience to its citizens.

The Vision 2025 for Thoothukudi is that the city would grow in a planned and sustainable manner, providing a good living ambience to its citizens

Thoothukudi urban area: Roads and transport

City roads

The total road length in Thoothukudi town managed by the Corporation is 174.43 kilometers. The major arterial roads in Thoothukudi town and its immediate surrounding areas are the Palayamkottai road, Ettayapuram road, Ramanathapuram road, Tiruchendur road, West Great Cotton road, the Victoria Extension Road and the bye pass road from harbour connecting with the Madurai road.

Of the roads within the Corporation area, about 36 kilometers are earthen roads while another 19 kilometers are water bound macadam roads. The surface of the cement concrete roads and bitumen roads need considerable improvement. The roads also need substantial improvement by way of removal of encroachments, provision of paved margins, proper demarcated parking, and avenue trees, etc.

The expansion of the town from the present 13.47 square kilometers to a city of 206.31 square kilometers would mean that the existing roads infrastructure within the town and in the village panchayats would need considerable improvements. In addition, many new roads will need to be laid as new industrial and commercial areas, townships, and housing colonies develop.

Thoothukudi town experiences traffic congestion due to the presence of three level crossings within the town that bring traffic from one side to the other to a halt during train movements. The problem may be solved either by shifting the railway station to Meelavittan, or by building grade separators over the tracks. There have also been suggestions that if the railway station is shifted to Meelavittan, the existing tracks passage area can be converted into a major road thoroughfare which would ease the traffic flow within the town considerably.

The main roads are 2 lane roads. However, there is heavy traffic movement on the arterial roads, due to the presence of the Port. For example, it is estimated that the Thoothukudi – Madurai bye pass road carries about 2,000 trucks a day. In total, about 3,000 truck movements take place every day on the major roads in and near Thoothukudi¹⁵. However, there is no truck terminal near the town and parking facilities for trucks are lacking.

The vision of the Port to grow to handle a volume of over 130 million tonnes per annum by 2025 from the present 21.5 million per annum would mean that the truck movements would also likely grow by 5-6 times. Thus, there would be a substantial need to increase the width of the main arterial roads as well as to build substantial parking areas on the periphery of the town on NH 7A, the road leading to Madurai. The truck terminal should be able to hold at least one day's movement of trucks.

All the streets have to be well lit, with underground ducts carrying the cables, with energy efficient and environment friendly lighting equipment that enables the city to be safe at night.

The vision for the roads infrastructure within the city of Thoothukudi is that

- **The internal roads within the present town would be decongested, by removing encroachments, improving the margins, providing parking facilities, etc.**
- **Traffic within town would be eased by shifting the railway station or building suitable grade separators at the level crossings**
- **New roads to cater to the new industrial, commercial and residential areas would be laid**
- **All main arterial roads and thoroughfares would at least be black topped roads with cycle tracks**
- **Truck terminals at suitable locations would be built**
- **The street-lighting would have underground ducting with modern energy efficient lighting systems**

The development in the urban road infrastructure that has to be achieved is given in table 3.3



Table 3.3: Urban roads in Thoothukudi

2008 Thoothukudi Corporation	2015 Thoothukudi Corporation	2025 Thoothukudi Corporation
• 175 km of roads in corporation area	• 600 km of roads,	• 1,000 km of roads,
• 55 km of roads not black topped	• All BT/ Concrete roads	• All BT/ Concrete roads
• Arterial roads 2 lanes	• Arterial 4 lane roads, Thoroughfares with 2 lanes	• Arterial roads –4 lanes, Thoroughfares –2 – 4 lanes; Arterial roads with inner roads/ cycle tracks
• Traffic bottlenecks due to 3 railway crossings	• Over bridges over railways/ shifting of station to Meelavittan	• Flyovers, underpasses over arterial roads and railway tracks
• Road margins have encroachments, no pedestrian pavements, very few avenue trees	• Road margins – - Encroachment free - Pedestrian pavements - Provision for green cover - Construction of ring road	• Road margins – - Encroachment free - Pedestrian pavements - Green cover (avenue trees)
• Haphazard parking; no truck parking bays/ terminals	• Truck parking bays	• Truck terminals & parking bays capable of handling over 20,000 trucks
• Large parts without underground drainage and utility provisions	• Underground cabling and drainage	• Underground cabling and drainage

City transport

The transport scene within the town is somewhat chaotic with fast moving and slow moving vehicles vying for space. The Tamil Nadu State Transport Corporation, (Madurai Division-II) Ltd (formerly Kattabomman Transport Corporation) operates a public transport system with ‘route buses’. There are other private buses, mini buses and share auto rickshaws. However, the buses operate on the main routes (e.g. from the old bus stand to the Port) and the frequency is not adequate. People living in localities and townships away from the arterial roads depend on mini buses, etc. During peak hours the buses are crowded and not comfortable. The number of two wheelers has been on the increase year after year.

There are two bus stands in the town from where over 700 buses operate per day. However, the facilities in the bus stands and bus shelters are minimal. There are 18 bus shelters in the Corporation area, but these are not in good condition¹⁶.

There are no special buses during peak school/ college hours and students are put to considerable strain in commuting to and from their institutions.

The expansion of the town from the present 13.47 square kilometers to a city of 206.31 square kilometers and the envisioned growth of the population from about 464,500 persons to 1,230,000 would necessitate a substantial increase to the public transport network.

The Vision 2025 for Thoothukudi city is that public transportation within the City would be such that all locations would have access to public transport buses within half a kilometer radius; the frequency of service would at least be 4 per hour on all routes. A semi-circular railway connecting Kilur- Melur- Meelavittan-Port would ease traffic congestion, substantially. The quality of public transport would be such that people need not depend on private transport.

Water supply and drainage

Water supply

At present, the town depends on Tamirabarani River for water supply. It obtains water from Vallanadu (near Tirunelveli) situated at about 40 kilometers from Thoothukudi town. There is also considerable loss of water in transmission from Vallanadu, estimated at about 7 mld¹⁷. The per capita water supply is about 97 litres per day (lpcd). In most areas the supply is once in 3 days. There is piped water supply to 222 streets (total number of streets in the town 862) with 28,114 service connections. However, there are 716 public fountains, covering a population of about 80,000 i.e. each fountain on an average serves about 112 consumers¹⁸. Many lower income localities and commercial establishments have to draw water from the common street outlets and transport it for consumption.

Assuming that a water supply of at least 135 lpcd should be available in larger cities with sewage systems,¹⁹ the lpcd water requirement for Thoothukudi is being met only to the extent of about 70%. Also, while it may be not possible to supply tapped water into each individual dwelling unit in the city, one public outlet should at least be available for say 15-20 families. This would mean that the present public outlets should be increased manifold.

Many ponds and water bodies around Thoothukudi town have over the past few decades encroached upon and silted as a result that the water storage capacity has come down considerably. Korampallam, a large water body is capable of being deepened and can serve as a source of water for the city.

Drainage

In respect of drainage and sewage treatment, at present only about 20% of the town is covered by underground drainage system. There are only about 2,200 sewer connections²⁰. Even this is not functioning efficiently. As regards sewage treatment, there is a facility at Tharuvaikulam with 4 oxidation plants. However, the condition of the ponds is far from satisfactory. Untreated sewage also flows through the Buckle Canal, through the open type storm water drains²¹ City Corporate Cum Business Plan for Thoothukudi – pages 38 and 50. Assuming that about 80% of the water supply would result in sewage, the expansion of the city and the quantity of sewage being generated would increase manifold if the envisioned growth is achieved.

The storm water drains are open type and cover only about 20% of the required length and have encroachments and silting. Some of the main roads lack storm water drains and there are missing links in the drains between bye lanes and main roads. Since the drains are open, solid kitchen and plastic wastes thrown into them clog them and this poses problems in the flow.²²

Buckle canal

Buckle canal runs in Thoothukudi from Korampallam village in the west to the sea in the east for a distance of about 9.35 kilometers of which about 5.90 kilometer runs through the town. It was meant as a drain for rain water. However it is now a canal encroached upon with about 480 constructions, majority of which are pucca/ permanent structures.²³ The main sewage pumping station located on the right bank of Buckle Canal at North Cruzpuram meant for pumping sewage to the sewage treatment plant is not functioning with the result that the sewage is directly let into Buckle Canal for disposal in the sea. This is causing considerable environmental issues. The canal is also choked with solid wastes as a result of which during rains, it overflows into the neighborhoods. The historic Buckle canal needs to be revived on a war footing. The government has recently announced that desilting of the Buckle canal will be taken up²⁴. Construction of road and waterways on both sides of the canal will be examined.



Water supply and sewage disposal requirements

An indication of the demand for water supply and sewage treatment that would arise in Thoothukudi envisioned is given in table 3.4

Table 3.4: Water supply and drainage envisaged in Thoothukudi

	2008 Thoothukudi Corporation	2015 Thoothukudi Corporation	2025 Thoothukudi Corporation
Population	222,000	720,000	1,230,000
Treated water for household (lpcd)	97.0	120.0	135.0
Treated water for household (mld)	21.3	86.0	166.0
Commercial, institutional, etc ²⁵ (mld)	5.4	17.0	33.0
Industrial demand ²⁶ (mld)	40.0	9.0	17.0
Total water (mld)	66.7	112.0	216.0
Sewage treatment (mld)	17.04 ²⁷	69.0	133.0

The present capacity of the Thoothukudi corporation for supplying water is only about 21 mld. As seen from the above, with the expansion of the town by absorption of the surrounding 17 village panchayats and the growth in population envisaged, the demand for water from residents and commercial and institutional uses would increase by about 150 mld.

The present demand from industries for water from Tamirabarani River is also considerable. For example, the SIPCOT industrial estate Phases I and Phase II at present may draw about 38 mld²⁸. With the expansion of industries and services sector, it may not be possible to cater fully to the increased demand from Tamirabarani alone and there may be a need to commission desalination plants, especially for taking care of the requirements of new major water intensive industries (e.g. thermal power plants). Such desalination plants may have synergies with the salt industry, as the salt-concentrated discharge from such plants may be used as input by the salt industry.

Thoothukudi could at present be considered to be placed in a somewhat similar situation to Tirupur town, which despite its eminence as a major manufacturer and exporter of knitwear, lacked quality infrastructure with domestic water supply being limited to a few hours on alternate days, industries not having access to piped supply and depleted ground water. The Tirupur Water Supply and Sanitation Project commenced construction of a project in 2002 for supplying 185 mld of water to 1.6 million residents and about 1,000 textile units of Tirupur town and surrounding areas from Cauvery / Bhavani River confluence 55 kilometers away and to provide underground drainage with a capacity to collect and treat 30 mld of sewage. The project is a public private partnership project at a cost of Rs.1,023 crore on a 30-year build-own-operate-transfer (BOOT) basis.²⁹

While Thoothukudi is poised for fast growth, major water supply, water treatment, and sewage treatment facilities have to be created in the city for it to develop into the envisioned major industrial and commercial centre and to improve the quality of life for its residents. A project similar to the Tirupur project along with a desalination plant may be necessary for Thoothukudi for the city to actualize its growth potential.

The Vision 2025 for Thoothukudi city is that at least 135 lpcd of treated water would be supplied to the residents and all households would get tapped water at their dwelling units.

The city would have under ground drainage in all its areas with the entire sewage being treated in an ecologically-sound manner, thus, saving the Buckle Channel.

Table 3.5: Water supply and drainage in Thoothukudi

2008 Thoothukudi Corporation	2015 Thoothukudi Corporation	2025 Thoothukudi Corporation
<ul style="list-style-type: none"> • Domestic supply 97 lpcd 	<ul style="list-style-type: none"> • Domestic supply 120 lpcd 	<ul style="list-style-type: none"> • Domestic supply 135 lpcd
<ul style="list-style-type: none"> • 58% of dwelling units dependent on public taps; • About 60 dwelling units per tap 	<ul style="list-style-type: none"> • 75% dwelling units to get water at the dwelling units • Average household dependent on public tap- 30 	<ul style="list-style-type: none"> • All dwelling units including low income groups to get water at dwelling units • BPL families – not more than 15 per tap
<ul style="list-style-type: none"> • Only 20% of city covered by underground sewage • Storm water drains inadequate and clogged • Buckle canal polluted with sewage • Sewage treatment facilities inadequate 	<ul style="list-style-type: none"> • Corporation limits as in 2008 to be entirely covered by under ground sewage and storm water drains • 50% of the annexed corporation area to be covered by underground system • All sewage to be treated with adequate environmental safeguards 	<ul style="list-style-type: none"> • Entire city to be covered by underground drainage • All sewage to be treated with adequate environmental safeguards

Solid waste management

The town generates solid wastes of about 110 metric tonnes per day, i.e. a per capita solid waste of about 500 grams per day. The solid waste clearance is managed both by the Corporation and private contractors and is not adequately mechanized. The performance efficiency is about 50%. The solid waste collected is transported to a compost yard at Tharuvaikulam, about 12 kilometers away from the town and the yard does not have facilities for segregation of the mixed waste, waste processing, leveling and compaction. This, therefore, creates environmental hazards. Compliance with the Municipal Solid Waste (Management and Handling) Rules, 2000 is inadequate in collection, storage, transportation and disposal. According to the Rules, municipal bodies must make it mandatory for households/ industries to segregate and store waste at source till collection by the Corporation³⁰. The Rules also prescribe the practices to be followed for vermi-composting of biodegradable wastes, and anaerobic digestion or any other appropriate biological processing for the stabilisation of wastes.

With the expansion of the city and growth of its population, the quantity of solid waste may increase as shown in table 3.6:

Table 3.6: Solid waste generation in Thoothukudi

2008	2015 Thoothukudi Corporation	2025 Thoothukudi Corporation	Thoothukudi Corporation
Population	222,000	720,000	1,230,000
Solid waste per day (Tonnes)	111.0 ³¹	540.0	1,230.0

Solid waste will need to be collected, handled and disposed off by type of waste, especially separately for bio degradable and non bio degradable wastes. There should be facilities provided for separate collection of recyclable wastes (such as discarded paper and paperboard products and certain types of plastics), so that environmental impact of waste would be reduced.

The Vision 2025 for Thoothukudi city is that all solid waste generated will be segregated at source, collected efficiently and disposed off in an eco-friendly manner by bio degradation with compost generation or incineration with energy recovery and where neither is feasible in safe landfills. Where recycling of the waste is possible (e.g. plastics and paper packaging) suitable arrangements will be entered into by the Corporation with others whereby they will collect and recycle the wastes



Table 3.7: Solid waste management in Thoothukudi

2008 Thoothukudi Corporation	2015 Thoothukudi Corporation	2025 Thoothukudi Corporation
Not segregated at source between bio degradable and non bio degradable	Source segregation to be achieved 100%	Source segregation to be achieved 100%
Operations not adequately mechanized	Mechanized operations	Mechanized operations
Inadequate facilities at compost yard	Compost yard facilities to be adequate	Compost yard facilities to be adequate
Municipal Solid Waste (Management and Handling) Rules, 2000 not fully complied with	The Rules to be entirely complied with	The Rules to be entirely complied with

Parks and gardens, recreation and public places

Parks and gardens

The extent of public space in the town is at present 58 hectares or about 4.3% of the total area of the town³². The town has a total of 14 parks and 7 play fields, with Rajaji Park being the most prominent one, located in the centre of the town. However, the parks are neither large, nor do they have attractions like facilities for amusements, etc. Many of the parks are in a poor state, without much tree cover. The play fields do not have adequate facilities.

With the envisioned expansion of the geographic area and population, new parks will need to come up at the new localities. At least another 30 large additional parks will need to be properly developed with amusement and recreational facilities. Roche Park, a small park located on the link road along the lagoon created by Hare Island has a water front that may be suitable for water sports, as the water is calm here.

Entertainment centres and shopping complexes

At present, there are 8 cinema theatres in the town, only one of them being air-conditioned. There are no major auditoriums, shopping malls, amusement parks, resorts, clubs, food courts, spectator sports stadiums, or major hotels offering entertainments, etc. The lack of such facilities leads to a lack of a city ambience which to some extent discourages relocation of talent to Thoothukudi.

With the envisioned growth of the city, and its economy, such service industries are bound to find increasing patronage and investments from the private sector would, therefore, get encouraged. *However, it is essential that in city planning, proper zoning regulations are implemented so that good ambience is created.*

The Vision 2025 for Thoothukudi city is that the much needed public and recreational space would be available in the city that would equal, if not better, those available in other international port cities like Singapore, Hongkong, Sydney, etc.

Table 3.8: Parks and gardens, recreation and public places in Thoothukudi

2008 Thoothukudi Corporation	2015 Thoothukudi Corporation	2025 Thoothukudi Corporation
• Parks inadequate in number facilities and ambience	• All existing parks would be green providing the city's lung space; per capita green space to be at least 15 sq. meters Every major part of the town to have a green park All existing facilities would be well maintained	• Every locality to have a well maintained park –residents to have a park within 1 kilometer radius; per capita green space would be at least 25 sq.meters
• No major places for sports and entertainment	• At least 1 major stadium for sports and recreation	• Sports and recreation facilities to be available for citizens within 2 kilometer radius
• No major shopping mall	• At least 2 major mall and theatre complexes	• Every major suburb to have at least 1 major mall/ theatre complex

Social services

Urban basic services for the poor

At present, there are 24 slums in the town with a total population of about 70,000 i.e. roughly 32% of the population of the town is living in slums. The basic infrastructure facilities available to this population are very poor.

There is a need to ensure that not only there is no increase in the population of slum dwellers, but also the existing slum-dwellers are provided better facilities and are rehabilitated in other localities without affecting their livelihoods.

The Vision 2025 for Thoothukudi is that there would be no slums in Thoothukudi city and all urban poor would be housed in proper buildings with basic services for civilized living

Education

Schools

There are in total 117 schools in Thoothukudi town, of which the 10 are corporation schools. The corporation schools which cater to the lower income groups, lack basic facilities like proper buildings in good repair, toilets, safe water, etc. 9 of these schools are near slums.³³ There are 31 high schools and higher secondary schools, one of which is a government school.³⁴ The government and corporation schools do not offer English medium education.

According to the XI Plan document of Tamil Nadu, the gross enrolment ratio (GER) for Thoothukudi district is 85.7% (Tamil Nadu 79.16%) indicating that about 14% of the school going age population may not be in schools in Thoothukudi district.³⁵ While separate data for Thoothukudi town was not readily available, it does indicate that considerable school going population of children may not be in schools in Thoothukudi town.

The teacher – student ratio for Thoothukudi district is as follows³⁶:

Table 3.9: Present teacher –student ratio in Thoothukudi district

School	Teacher: student ratio
Primary	1: 29
Middle schools	1: 33
High schools	1: 28
Hr. Secondary schools	1: 33

The above ratios do seem high, especially in the primary and middle schools where lower ratios would be beneficial.

For the envisioned population, the number of schools, both private and government, will have to increase manifold. While private schools would come up encouraged by the increase in the population of the city and its middle income groups due to growth of its economy, and would need mainly to be regulated (e.g. to be set up in properly demarcated institutional zones), investments in government schools would be necessary to cater to the increase in the population of students from the lower income groups and to improve the facilities in the existing schools. The number of teachers would need to be increased by about 4,000 by 2015 and another 6,000 by 2025. The Government schools would also need to offer English medium education.

Higher education and skills education

There are 5 arts and science colleges, 3 polytechnics, and a fisheries college in Thoothukudi town³⁷. There is an engineering college on the highway to Tirunelveli, and one in Sawyerpuram, both somewhat faraway from the town, which is felt to be a disadvantage. There is also a government medical college. The colleges are affiliated to the Manonmaniam Sundaranar University, Tirunelveli, about 50 kilometers away. There are 3 Industrial Training Institutes³⁸ and about 50 computer training centres³⁹ also.

There are no institutions for research and development located at the town. High quality management or technical institutions such as Indian Institute of Management, Indian Institute of Technology, Indian Institute of Information Technology, etc. are not present in Thoothukudi.

The growth of the city would need, and be encouraged by, the presence of institutions of advanced learning, especially in the technical fields. This would not only encourage local younger population to stay in Thoothukudi, but would also attract talent to migrate to the city. There is a need for expansion of tertiary institutions of academic excellence in subjects of particular relevance to the city and its economy – salt and chemicals, fisheries, oceanography, marine engineering, foreign trade, fashion technology, etc. There would also be a tremendous need for institutions teaching vocations and technical skills, especially to facilitate the growth of Thoothukudi's economy. In view of the Port, a specialized institution for merchant navy training can be started in Thoothukudi. *A mapping of all educational and skills training institutions in the corporation and surrounding areas will need to be done and the gaps discovered will need to be addressed.*

At present the ratio of higher secondary students within the district to those in tertiary institutions is about 6:1. This needs to be increased to at least 2:1 by 2025.

The Vision 2025 for Thoothukudi in education is that

- **All children of school going age will be in schools that have an ambience encouraging children to develop academically and as persons**
- **The teacher student ratio in schools would be not more than 1:20**
- **All children would complete higher secondary education**
- **The ratio of higher secondary students joining college would be 2:1,**
- **6 engineering colleges within city**
- **Technical skills education relevant for industry especially in and around Thoothukudi would be available in sufficient measure**
- **Employment oriented higher education in science, technology and humanities would be available in sufficient measure**
- **Educational and research institutions of excellence, like IIMs and IITs, would be established in Thoothukudi that would attract academics and intelligentsia to Thoothukudi**

Health infrastructure

There are 5 health centres and 7 hospitals in the town. In addition there are around 65 other smaller hospitals / nursing homes/ clinics in the town. The Government Medical College Hospital is the major government hospital in the town.

The total number of doctors in the district is about 230, while the total bed strength is about 1,200⁴⁰. On an average, there is 1 doctor for every 7,400 persons and 1 hospital bed for every 1,250 persons. The state average is about 1 doctor for every 7,050 persons.

The doctor – population and the beds – population ratios are in need of improvement. These should at least become 1: 450 and 1: 250, which means that by 2025, another 2,750 doctors and 6,300 beds, will need to be added. Also the availability of specialists is also required to be improved.

The Vision 2025 for Thoothukudi in healthcare is that the doctor population ratio would be 1: 450 and hospital beds to population ratio will be 1: 250 and all specialities would be available within the city. Hygiene and sanitation levels would be high and people would be health and hygiene conscious.

Human Development

At present, Thoothukudi district has a fairly high life expectancy of 78.2 years, with a literacy rate of 88.31%. Its per capita income under purchasing power parity terms is nearly \$ 4,000, with a gross enrolment ratio of 85.07 and a human development index of 0.791⁴¹. The district requires improvement in gross enrolment ratio as it is at present 21st in ranking amongst the districts of Tamil Nadu.

The Vision 2025 for Thoothukudi in Human Development is that it would continue to maintain its high levels and be one of the leading districts in Tamil Nadu in terms of human development.

The social vision for Thoothukudi 2025 has been depicted in table 3.10:

Table 3.10: Social vision for Thoothukudi

	2008 Thoothukudi Corporation	2015 Thoothukudi Corporation	2025 Thoothukudi Corporation
Slums	<ul style="list-style-type: none"> • 24 slums, 70,000 people (32% of population) in slums 	<ul style="list-style-type: none"> • Facilities in slums improved for part of population and resettlement of balance population • No new slums 	<ul style="list-style-type: none"> • No slums in the city • All citizens adequately housed
Education	<ul style="list-style-type: none"> • Considerable school going age children not in schools • Government school ambience not good • Teacher student ratio in primary and middle schools 1: 29 & 1: 30 respectively • 1 in 6 higher secondary student goes to college • Inadequate number of skills and vocational training institutions 	<ul style="list-style-type: none"> • All school going age children in schools • Government schools ambience improved • Progress towards improving teacher student ratio – at least 1: 25 to be reached • 1 in 3 higher secondary student in college • Institutions teaching / training skills relevant to Thoothukudi started 	<ul style="list-style-type: none"> • All school going age children in schools • Government school ambience similar to private schools • Teacher student ratio 1: 20 in primary and middle schools including in government schools • 1 in 2 higher secondary student in college • Mature institutions teaching employment oriented skills
Health	<ul style="list-style-type: none"> • Doctor population ratio 1: 7,300 • Beds population ratio 1: 250 • Government hospitals facilities to be improved • Extent of specialist care short of that is available in cities like Madurai 	<ul style="list-style-type: none"> • Doctor population ratio 1: 1,750 • Beds population ratio 1: 250 • Government hospitals facilities improved • Extent of specialist care that is available in cities like Chennai/ Coimbatore etc. 	<ul style="list-style-type: none"> • Doctor population ratio 1: 450 • Beds population ratio 1: 250 • Government hospitals facilities like private hospitals • Extent of specialist care that is available in Metros • A few renowned corporate hospitals and world class treatment
Life Expectancy at Birth	78.2 years	85	90
Literacy rate	88.31	100	100
Gross enrolment ratio	85.07	100	100
Per capita Income Rs./p.a.	24,429*	63,852	113,000
Human Development Index	0.791	0.850	0.940

*2003 data

Growth Vision 2025 for connectivity of Thoothukudi

Thoothukudi being situated at almost the southern tip of India is perceived as removed from the major economic and urban centres. It is about 650 kilometers from Chennai and the nearest major urban centre is Madurai which is about 135 kilometers from the city. While the town's road connectivity is fair, its railway and air connectivity is very limited.

The city is connected by the road National Highway 7A to Palayamkottai (Tirunelveli) and to National Highway 7 (the North South Corridor) there, and by NH 45B to Madurai. Thoothukudi is connected to Tiruchendur also by a 2 lane road.

It is connected by a single track railway line to Madurai and has only 2 express trains everyday, one to Chennai and the other to Mysore and 2 slow passenger trains to Tirunelveli. With effect from September 28, 2008, Tuticorin –Tirunelveli-Tuticorin passenger train has been extended to Tiruchendur⁴². There are no trains to other cities with which the town has frequent contacts – Coimbatore, Kochi, etc. Its railway trains connectivity is, therefore, inadequate and for boarding most trains, the residents have to go to Tirunelveli or to Maniyachi junction. This is very inconvenient, especially for boarding night trains.

As far as port freight traffic of cargo (excluding captive cargo) is concerned only about 10% is handled by the railways.⁴³ A proposal has been mooted by the Port that a railway dedicated freight corridor should be developed as a “backbone of India” that would enable cargo from hinterland as far away as Nagpur to reach the port within a maximum of 36 hours

Thoothukudi has an operational airport at Vaigaikulam that has a 1,350 meter runway. Only one flight per day is operated from the airport - in the afternoon to Chennai. The airport is not capable of handling larger jets and does not as yet have night landing facilities.

Connectivity of Tuticorin by ferry services is negligible. The Port has ample scope to provide ferry services to neighbouring ports and develop into a center for international sea tourism

The stakeholders were unanimous in the view that the city's development economically and socially is at present significantly held back because of the poor connectivity and that if connectivity were to improve it would go a long way in improving the town's economic potential.

The Vision 2025 for Thoothukudi in connectivity is that:

- **The city would be connected by well maintained 8 lane highways to Madurai and Tirunelveli and to other centres by suitably broad highways**
- **The railway connectivity would be greatly enhanced such that there would be fast trains to all major urban centres with which the city has considerable traffic.**
- **The port cargo traffic would be increasingly handled by railways and the railways would be able to move containers and cargo to the Port within 3-4 days from hinterland as far away as Nagpur.**
- **The airport would be a major domestic airport and an international airport with flights to the Far East, Europe, etc.**
- **Tuticorin port could transform itself into a hub for international sea tourism**

The vision for connectivity of Thoothukudi is given in table 3.11

Table 3.11: Thoothukudi connectivity

	2008	2015	2025
Railways	Single line connected to Madurai through Maniyachi	Connected to Manamadurai, and to Kanniyakumari via Tiruchendur	High speed double line to Chennai; 8 hours travel time
	Only 2 express trains; 12 hours to Chennai Inconvenient night time boarding at Maniyachi for most trains	Express trains to Chennai, Mysore, Coimbatore, Mangalore, Kochi	Chennai double line, electric traction Connected to Chennai, Coimbatore and Bangalore by super fast trains
	No shuttle trains to Tirunelveli	Shuttle service to Tirunelveli	Shuttle service to Tirunelveli Connected to Madurai by super fast day trains
	Only 10% goods traffic through railways ⁴⁴	20% - 25% goods traffic through railways	Backbone dedicated freight corridor via Erode enabling cargo from hinterlands as far as Nagpur to reach the Port within 36 hours
Road	Double lane roads to Madurai and Tirunelveli	Connected to Madurai and Tirunelveli with 4 lane highway	Connected to Madurai – 8 lane highway; Connected to NH7 (north – south corridor) by 8 lane highway
	Double lane road to Tiruchendur	4 lane highway to Tiruchendur	Connected to nearby urban centres – 4 lane highways
	ECR connection not yet in place	Connected to Ramanathapuram by 4 lane ECR	Connected to Chennai by 4 lane ECR
Air	One flight passenger flight a day to Chennai; Flight is generally full	Active domestic airport with many flights to Chennai, Kochi, Coimbatore, Bangalore, Mumbai, Delhi and Hyderabad	Domestic terminal – capable of handling wide bodied jets with flights to all major destinations in India
	1,350 meter runway; medium-small aircraft can operate Night landing not yet operational	Wide bodied jets can land	International terminal – capable of handling international flights to Europe and Far East
Sea	Ferry services do not exist extensively	Ferry services from Thoothukudi harbour to Colombo port Ferry services connecting Thoothukudi port to Tiuchendur, Manapad Ferry services to Kanyakumari- Thoothukudi-Rameshwaram	Hub for International sea tourism for South, South East Asia and the Far East.

Long term policy for developing Thoothukudi as a model industrial and commercial city

The Government of Tamil Nadu has in place various initiatives for the development of Tamil Nadu. Similarly, certain development initiatives from the Central Government in Tamil Nadu are also in place. These initiatives would address, to some extent, some of the developmental needs of Thoothukudi in the medium term. A focused policy and planning initiative would however be needed for realizing the Thoothukudi Vision 2025 as articulated in this document.

Action plan

Tamil Nadu government should formulate a policy that Thoothukudi and its environs shall be developed as a model city and future industrial investment that requires the presence of large tracts of dry land and a nearby port would be encouraged towards and channeled to Thoothukudi.

Development of industrial lands

The Industrial Policy 2007 of Tamil Nadu Government provides that one of the important attributes that locations should possess for them to be developed as industrial parks is that they should be dry barren lands. The Policy provides that

- A land bank of 10,000 acres would be developed as industrial parks on dry and barren lands across the State during the 5 years 2007-12.
- The Madurai – Thoothukudi corridor would be developed as an industrial corridor of excellence

The development of Thoothukudi as an industrial hub near a port is, therefore, in accord with the Industrial Policy of the Government.

Action plan

Since around Thoothukudi there is a considerable extent of dry barren lands, in implementing the Industrial policy, the Government should give priority to Thoothukudi and

- *Develop/ enable the development of large tracts of the dry lands around Thoothukudi as industrial parks. At present, SIPCOT has already embarked on an expansion of its*
- *Industrial estate in Thoothukudi (Phase II) and on completion of the Phase the total extent of the industrial estate near Thoothukudi would be about 2,700 acres (Phase I, 1,083 acres and Phase II, 1,616 acres)⁴⁵. Completion of Phase II would need to be expedited.*

The land development policy should ensure alternative and adequate employment to the present stakeholders in the land to ensure inclusive economic growth and well being.

- *Encourage and enable as part of the Madurai – Thoothukudi industrial corridor, the development of industrial parks along NH 45B near Thoothukudi*
- *Invite and channel private developers of industrial parks to develop such parks near Thoothukudi.*

Development of Tuticorin Port

Under the Industrial Policy 2007, the State Government would take up with the Government of India the upgrading of the Thoothukudi port into a modern deep water hub port.

The projects for developing the inner harbour of Tuticorin Port at an estimated cost of about Rs.961 crores are already in progress and are expected to be completed by 2009. The development of the outer harbour and a ship building yard has also been proposed at a cost of Rs.3,610 crores.⁴⁶ The outer harbour will have a depth of 14.5 meters. The outer harbours' depth, on completion, would however be not sufficient to handle Post Panamax vessels. The development of Tuticorin as a major hub port capable of handling Post Panamax vessels would need a depth of about 17.5 meters.

The long term growth of Tuticorin port as a major hub port for India would require that the port is able to handle larger ships, i.e. at least Post Panamax, and hence there would be a need to enhance the Port's infrastructure to handle such vessels.

Action plan

- *In addition to completion of the development of inner harbour that is already in progress, and completion of the outer harbour development project, develop infrastructure at the Port for it to be capable of handling post Panamax vessels so that it may become a major hub port for India.*
- *Develop a ship building yard at Tuticorin port*

Development of Tourism assets around Thoothukudi

The Government would need to give special emphasis for improving the infrastructure and connectivity of the tourism assets. It would need to evaluate the potential of the beaches of the district and islands in the Gulf of Mannar from the economic and ecological perspectives and develop these assets in an ecologically sustainable manner.

Action plan

Specific focus should be on

- *Improving the infrastructure, ambience and connectivity of the places of religious and heritage interest*
- *Evaluating from an ecological perspective, the development of the islands off Thoothukudi coast and if ecologically sound, developing the more suitable islands as places of eco tourism.*
- *Enabling, and regulating the development of places of eco tourism interest – beaches, islands, scenic places and similar places of interest near Thoothukudi*
- *Developing the Hare island lagoon to enable water sports, etc.*
- *Development of cruise tourism that would have linkages to the tourism assets not only near Thoothukudi, but also with places such as Madurai and Kanniyakumari*
- *Promotional efforts and enabling tie ups for Thoothukudi tourism industry in international tourism and travel circuits*

Development of Thoothukudi urban area

Realizing the potential of Thoothukudi town and the surrounding areas for development, the Government of Tamil Nadu has upgraded the Thoothukudi Municipality from a special grade Municipality to a Corporation. Thoothukudi Municipality has got prepared a City Corporate cum Business Plan in 2007 in the context of the Third Tamil Nadu Urban Development Project (TNUDP III) and has identified the various works that need to be carried out in Thoothukudi town at an estimated cost of Rs.100.3 crores to be spent over the 5 years 2007-08 to 2011-12. In respect of the Buckle Canal, a project report prepared for Tamil Nadu Urban Infrastructure Financial Services Ltd. in December, 2007 has suggested several measures such as de-silting, building of reinforced concrete walls, new minor bridges, removal of encroachments, landscaping, street lighting, construction of BT road for about 1.6 kilometers on one side of the canal, etc. The cost of the project is about Rs. 30 crores.

Immediate improvements to the civic infrastructure of Thoothukudi town are an essential pre-requisite to encourage private investments. However, while this would address the immediate needs, for the envisioned growth, a detailed master

plan would have to be prepared that caters to as well as contributes towards the growth of Thoothukudi Corporation as a model industrial city.

Action Plan

- *Take up and complete on a priority basis the improvements to the civic infrastructure already identified under TNUDP III and to Buckle canal.*
- *Prepare a detailed master plan for Thoothukudi so that it may develop as a model industrial city*
- *Identify in detail the long term investments needed to build Thoothukudi as a model city and the methods of financing such large investments (Government/ Long term loans/ PPP, etc.)*

Improving the connectivity of Thoothukudi

Roadways

Projects are in progress for upgrading NH 7A to Palayankottai and NH 45B to Madurai into 4 lane highways. Under the Industrial Policy, the Chennai – Kanniyakumari Highway would be made a 4-lane highway by 2011.

In the longer term, there would be a need to upgrade these highways to 6 or 8 lane highways and to develop the East Coast Road at least as a 4 lane highway connecting Chennai to Kanniyakumari. The Government should encourage these highways to be developed under the BOOT basis.

Railways

The present railway connectivity for Thoothukudi is inadequate, not only in terms of railway lines, but also in terms of number of train services. In view of Thoothukudi's location at the southern tip of India, the importance of railway connectivity to major cities and the nearby urban centres cannot be overemphasized. The Port has mooted a dedicated freight corridor between Erode and Nagpur to benefit not only the Tuticorin Port, but also the Cochin and Chennai ports.

While in the short term railway connectivity may be improved by introduction of a few more trains, for the envisioned growth in the long term, it is essential that the Port and the city are connected by double track electric traction railways to Chennai and Erode. Similarly railway lines connecting Thoothukudi with Tiruchendur and Kanniyakumari and Manamadurai have to be developed so that the connectivity of the city is enhanced. The need for a new East coastal railway line between Chennai and Kanyakumari is strongly felt. Doubling and Electrification of tracks from Chennai – Tuticorin would help speed up the travel distance considerably and is also a strongly felt need of the people.

Air

Under the Industrial Policy 2007 of the Government of Tamil Nadu, the State Government would take up with the Government of India the upgrading of Thoothukudi airport to handle wide-bodied aircraft. The Tamil Nadu Government also intends to approach the central government for providing international connectivity to Thoothukudi airport⁴⁷. It is already planned to extend the runway of Thoothukudi airport from 1350 m to 1800 m⁴⁸ to enable landing of bigger aircraft. Night landing facility at the airport would also be introduced.

For long term development of Thoothukudi, it is essential that Thoothukudi airport is developed into a significant domestic and international airport.

Action plan: Roadways

In the immediate term:

- Expedite upgrading the highways NH 7A to Palayamkottai and NH 45B to Madurai to 4 lane
- Improve the ECR to Ramanathapuram to a 4 lane highway
- Improve connectivity to nearby urban centres by at least double lane roads, especially to Maniyachi railway junction

In the longer term

- Upgrade the NH 7 (North South Corridor), NH 7A and NH 45B to 8 lane roads and the roads to other urban centres as 4 lane roads.

Action Plan: Railways

In the immediate term:

- Introduce trains to Coimbatore and more trains to Chennai and Madurai and a shuttle service to Tirunelveli

In the long term:

- Connect Thoothukudi by double track electric traction railway lines to Chennai and Bangalore
- New railway lines to be laid connecting Thoothukudi to Manamadurai, and to Kanniyakumari via Tiruchendur
- Develop a dedicated freight corridor between Thoothukudi and Nagpur as the freight backbone of India

Action plan: Air

In the immediate term:

Expand Tuticorin Airport such that it can handle larger jet aircrafts, The present runway length should be extended to about 2300 m by 2015 and about 4000 m by 2025.

In the long term:

Develop Tuticorin airport as an international airport

Enhancement of power generation

Several thermal power projects have been announced/ approved/ under implementation in Thoothukudi district. The following thermal power projects proposed for establishment in Thoothukudi district are likely to come on stream by 2012:

Table 3.12: Power projects planned in Thoothukudi district

Project	Location	Sector	Capacity MW
TNEB – Neyveli Lignite Corporation Joint Venture ⁴⁹	Near the Port	Joint Venture	1,000
BHEL – TNEB super critical power project	Udangudi	Joint Venture	1,600
Coastal Energen Pvt Ltd.	Near Thoothukudi	Merchant Power Plant	1,050
Total			3,650

In addition, Ind Bharat Power Gen Company Limited is also setting up a 3x 63 captive power plant near Puthiamputhur near Thoothukudi. There is also a proposal to set up another plant of 1,320 MW (2x660 mw) by the same company near Manapadu. In addition certain other proposals for setting up merchant power plants have been made.

Such increases in power generation would enhance the availability of power and encourage setting up of industries near Thoothukudi. However, these enhancements have to be made such that the carrying capacity of the environment near Thoothukudi is not adversely affected. Since Thoothukudi is in a corner of Tamil Nadu, evacuation of power to other industrial centres would also need considerable investments in transmission.

Action plan

Power plants to be set up near Thoothukudi and the district to the extent the city, the district and the off shore ecology are not affected in any manner.

Development of the social sector

Low cost housing

The 24 slums with a population of about 70,000 persons will have to be upgraded such that these slums cease to be slums and at least become livable, as low income, neighborhoods. This would mean not only improving the infrastructure in these slums, but also rehabilitating part of the

population in new areas and ensuring that no new slums develop. This would require construction of many dwelling units with at least basic infrastructure.

The City Corporate cum Business Plan of Thoothukudi Municipality has drawn up a plan for rehabilitation of 8 slums at a cost of Rs. 6 crores which includes construction of 400 houses, improvement works to water supply, roads, street lights, underground drainage/ sewage and solid waste disposal arrangements.

Action plan

- *All the 24 slums to be upgraded such that basic amenities are provided to the existing population and new house constructions are undertaken at suitable locations to resettle the population where necessary.*
- *Incorporate into the master plan areas for housing low income citizens and construct housing with basic amenities.*

Education

To provide quality education to children and to cater to the increasing population of children due to the expansion of the city, considerable educational infrastructure would need to be added. Based on estimates of the children of school going age in Thoothukudi, and the projected population distribution in Tamil Nadu,⁵⁰ the number of children in the school-going age in Thoothukudi city would increase to about 158,000 by 2015 and 246,000 by 2025. Considerable investment would be needed for the school infrastructure. The Government would need to invest in schools to cater to children from the lower income group. There is a need for starting a Kendriya Vidyalaya in Thoothukudi Town. Institutions of higher learning also will need to be encouraged to be set up in and near Thoothukudi.

Action plan

The government should invest in improving the present educational infrastructure and invest in creating new educational institutions for the economically weaker sections of the society and also enable private sector/ NGOs to set up educational institutions of special relevance to Thoothukudi. The infrastructure to be created should ensure that:

- *Schools are set up such that a primary school child would need to travel not more than 1 km and a secondary school child not more than 2 kilometers to reach school*
- *Adequate vocational training institutions are set up to cater to the skills need of the population*
- *Institutions of higher learning, especially in engineering and information technology are set up/enabled to be set up in Thoothukudi*
- *Institutions of excellence in the fields that are of special relevance to Thoothukudi's economy, such as fisheries, chemical and metallurgy, international trade, logistics, fashion technology, marine engineering, training in merchant navy, etc. are encouraged to be set up in Thoothukudi*

Health

To provide quality healthcare to all the residents in Thoothukudi, considerable health infrastructure would need to be created. The government would need to invest in healthcare infrastructure to cater to the economically weaker sections of the society in Thoothukudi. The medical college in Thoothukudi should be expanded not only in terms of number of doctors graduating, but also in terms of higher education enabling specialization and medical research.

Action plan

- *The government should*
 - *invest in improving the present conditions in the Government Hospital*
 - *Expand the medical college both in the number of seats as well as by including advanced specialist courses and medical research*
- *Enable setting up private and non governmental medical institutions*
- *Improve awareness through mass media and advertisements that prevention is better than cure and emphasize the need for hygiene, sanitation, prevention of pollution, etc*

Investments needed

For Thoothukudi to develop as envisioned by the stakeholders, considerable investments would need to be made in infrastructure. Some of these investments would relate directly to the improvement of infrastructure of the town and are essential to attract private sector investments into the town. There is also a need for substantial other infrastructure investments, which will be of immense benefit to the town and are indeed a prerequisite for the envisioned growth to be realized, are actually investments that would benefit the larger economy of the State and the country as a whole.

The government has proposed certain investments for upgrading the civic infrastructure in the town, as follows:

Table 3.13: Investments already proposed for improvements to the town infrastructure

Improvements to existing town infrastructure	Rs Crore
Improvements to civic infrastructure including roads, water supply, sewage, municipal solid waste disposal, parks,	103
Buckle canal improvement	30
Total	133

While certain social sector investments will need to be made by the government, a large part of the infrastructure investments could be private public partnerships or wholly private sector investments. Infrastructure investments in city connectivity, housing, power and water supply, etc. could be encouraged from private sector with appropriate regulatory controls and oversight from the Government. Even in social sector investments would be mainly needed from the government for providing essential social services for health and education. With the growth of the city and its economy, non governmental organizations and private entrepreneurs would also find it attractive to invest in health and education in the city.

A broad indication of the investment requirements is given below. These are not estimates, but are intended to convey an “order of magnitude” of investments required.

Table 3.14: Investments required in Infrastructure sector

Infrastructure	Rs. Crore		
	2008- 2015	2016 - 2025	Total
Tuticorin Port	4,572	3,500	8,072
Roadways	1,474	1,051	2,525
Railways	480	420	900
Airport	200	410	610
Power plants	14,400	15,750	30,150
Total	21,126	21,131	42,257

Table 3.15: Investments required in Civil & Social infrastructure

Rs. Crore

Civil (Urban) infrastructure	2008- 2015	2016 – 2025	Total
City roads including street lights	1,200	1,250	2,450
Truck terminus	80	70	150
Water supply and drainage	500	575	1,075
Desalination plant	500	500	1,000
Sewage	215	245	460
Solid waste management	45	65	110
Total urban sector investments for expansion	2,540	2,705	5,245
Social sector investments for expansion			
Slum improvement	400	600	1,000
Schools & colleges	725	725	1,450
Hospitals	575	615	1,190
Total social sector investments for expansion	1,700	1,940	3,640
Total Thoothukudi city improvements and expansions	4,240	4,645	8,885

ANNEXURE 1

Thoothukudi – Salient Features and Resources

Thoothukudi is a port town and the district headquarters of Thoothukudi district. It is located at the extreme south eastern corner of India. It is about 50 kilometres east of Tirunelveli and about 135 kilometres south of Madurai. Its coastline borders the Gulf of Mannar. Thoothukudi District is bordered on the north by the districts of Tirunelveli, Virudhunagar and Ramanathapuram, on the east and south-east by Gulf of Mannar and on the west and south-west by the district of Tirunelveli.

Key development indicators- Thoothukudi district

A few important development indicators of *Thoothukudi District* are given below:

Table A1.1: Thoothukudi district development indicators

	Thoothukudi District	Tamil Nadu State	India
Net Domestic Product at current prices (2005-06) ⁵¹	Rs.5,607 crore	Rs.194,305 crore	Rs.28,71,731 Crore ⁵²
Per Capita NDP Estimate at current prices (2005-06) ⁵³	Rs.34,494	Rs.29,924	Rs.25,941
Human Development Index ⁵⁴	0.791	0.736	0.571 ⁵⁵
Gender Development Index ⁵³	0.779	0.722	0.553

In Human Development Index, Thoothukudi district has performed well in Tamil Nadu and it is second only to Chennai. The performance of the district under the parameters of human development is given below:

Table A1.2: Position of Thoothukudi district in Human Development⁵⁶

Parameters	Thoothukudi District	Chennai	Tamil Nadu	Thoothukudi rank in TN
Life expectancy at birth (years)	78.2	84.8	72.8	2
Literacy rate	88.31	86.35	79.16	2
Gross enrolment ratio	85.07	85.36	88.82	21
Per capita district domestic product (in PPP \$)	3,928	5,497	3,363	7
Human Development Index	0.791	0.842	0.736	2

Demographic profile of Thoothukudi town

The population and its growth in Thoothukudi town since 1961 are given below:

Table A1.3: Growth in population of Thoothukudi 1961-2007

Year	Population	Growth Rate Decadal %
1961	124,230	25.7%
1971	159,310	25.8%
1981	192,949	23.4%
1991	205,014	6.3%
2001	216,058	5.3%
2007	222,048	4.6% ⁵⁷

Source: Thoothukudi Special Grade Municipality Formation as Municipal Corporation

The demographic profile of Thoothukudi town is given below:

Table A1.4: Demographic profile of Thoothukudi town

	Thoothukudi town	Chennai	Chandigarh
Population (2001 census)	216,058	4,343,645	900,635 ⁵⁸
Male	107,781	2,219,539	506,938
Female	108,277	2,124,106	393,697
Density (per sq. km)	16,039	24,231	7,900 ⁵⁹

Sources: Thoothukudi Municipality – Official Municipality website: <http://municipality.tn.gov.in>

Thoothukudi District -: District Statistical Handbook 2006, Thoothukudi

Tamil Nadu State – Statistical Handbook of Tamil Nadu 2006

Resources

Sea coast and Marine resources

Thoothukudi District has 163.5 kilometres of coast line, from Vembar in the north to Tharuvai, near Manapadu in the south. The seacoast offers the following advantages to the District:

- The seacoast has enabled deep sea fishing, marine products and salt industries to develop in the district. These are labour intensive industries. Significant population in the district and the town are dependent on these traditional industries.
- The sea is calm because of the presence of Sri Lanka to the east. Even the 2004 tsunami that devastated the Tamil Nadu coast had mostly spared the Thoothukudi coast.
- The Tuticorin Port Trust has been operating in Thoothukudi as a major port of India since July, 1974.
- Fisheries College and Research Institute and the Tamil Nadu Maritime Academy are located in Thoothukudi.

Gulf of Mannar Bio Reserve

The Gulf of Mannar Biosphere Reserve (GoMBR) extends over 10,500 sq. km and includes 21 islands of the National Park (560 sq. km.). This is the first marine Biosphere Reserve in the country. The GoMBR is rich both in species and habitat bio-diversity. This richness also makes the reserve a highly productive area for marine resources of fisheries.

Water

Thoothukudi town is served by the Tamirabarani system. Tamirabarani is a perennial river, originating in the western ghats and passes at a distance of about 40 km from the city at Vallanadu, near Tirunelveli. About 20.7 million litres per day (mld) is drawn for the town's domestic consumption from the river⁶⁰. In addition, the river has been supplying water for industrial purposes, including the SIPCOT industrial estate.

Besides Tamirabarani River, there is a river Vaipar in Vilathikulam Taluk, and another river Karumeni that traverses through Sathankulam and Tiruchendur Taluks. There are no big reservoirs in the district. In Ottapidaram taluk there is a small reservoir at Eppodumvendran village. Papanasam and Manimuthar Dams which are located in the nearby Tirunelveli district are the main sources of irrigation for Thoothukudi District.

Since the city is located on the coast, major demands for water in future due to industrialization can be met by desalination plants through the Public-Private Partnership route. Thoothukudi is also creating awareness among the public on the benefits of rainwater harvesting and how to implement it.

Climate

Thoothukudi District has a dry, hot tropical climate. The summer season lasts from March to May and is very hot. The period from November to February is the coolest part of the year with a mean daily maximum temperature of 29°C. During this period, the mean daily temperature is 23°C⁶¹. This dry climate is in itself a resource as it has enabled the setting up of certain industries such as salt, dry flowers, edible oil extraction, etc. in and around Thoothukudi and in the district.

Rainfall

The town and the district are in the rain shadow region created by the western ghats to the west. The average annual rainfall in the district is 661.6 mm. The main rainy season for the district is from October to December. The District gets minimal rainfall during the South-West monsoon. The variation in the annual rainfall from year-to-year in the District is not large⁶². Severe weather systems do not cross the coast near Thoothukudi due to the presence of Sri Lanka to the east and the western ghats to the west.

Land

The land in and around Thoothukudi town is dry. To a large extent this is true of the district also. The break-up of land utilization in the district is as follows:

Table A1.5: Land Utilization in Thoothukudi District (in hectares) in 2005-06

Classification	Area Ha
Forest	11,012
Barren and uncultivable uses	19,762
Land put to non-agricultural uses	74,489
Cultivable waste	58,139
Permanent pastures and other grazing land	5,132
Land under miscellaneous tree crops and grasses not included in net area sown	39,256
Current fallows	6,693
Other fallows land	72,756
Net area sown	171,815
Geographical area	459,054

Source: Thoothukudi District -: District Statistical Handbook 2006, Thoothukudi

The above table indicates that only 37% of the total area of 459,054 hectares is sown. Of the net area sown, only 7,329 ha (i.e. 4.3%) is sown more than once in a year as against 15% for the state as a whole. The net irrigated area is only about 40,000 ha. i.e. about 23% of the cultivated area.⁶³ Also, the uncultivable and waste lands are considerable.

Thoothukudi Corporation

The Thoothukudi Corporation area covers 1,347 hectares of which 1,120 hectares are developed area i.e. 87% of the corporation area. The undeveloped area constitutes 227 hectares i.e. 17% of the corporation area. Of the developed area, residences occupy 63.4%, educational institutions – 8.0%, public and semi-public – 5.2%, transportation – 14.3%, commercial – 5.7% and Industrial 3.4%⁶⁴.

The growth of the city has to be outside the present corporation area as most of the corporation areas are already developed. The lands in the periphery of the town are mostly dry and are not under cultivation and would hence permit the expansion of the city and industries.

Minerals

Concentration of heavy minerals like ilmenite, garnet, zircon, rutile, tourmaline, monazite, sillimanite, leucosene, epidote, kyalnite, hornblends are found in the beach sands and also in coastal dunes adjacent to beaches. Garnet (50.34%) and ilmenite (38.97%) dominate the medium sized grains. In the fine fractions the ilmenite content increases and may be about 70%. Terrestrial sediments in Sawyerpuram, Kudiraimoli, Prakashapuram, and Surangudi also contain the above minerals, except garnet and hornblends.⁶⁵ Titanium dioxide, which is mainly used in pigment production (paints), is produced from ilmenite.

Tourism resources

Located in and around Thoothukudi district are several places of interest for tourism. The following are the tourist attractions available in the District:

Heritage/ religious sites

Navatirupati

The group of temples known as Navatirupati temples is a holy pilgrimage centre for Vaishnavites, wherein, nine Vishnu temples are located in close proximity to each other. These holy shrines are located on the banks of the river Tamirabarani, within 2 hours drive from Thoothukudi town. Alwarthirunagari, one of the Navatirupati shrines, is also the birthplace of Nammazhvar, a prominent Vaishnavite saint.

Tiruchendur Senthil Andavar Temple

This beautiful temple, located on the shores of the Bay of Bengal, is one of the six Abodes of Lord Subrahmanya, where the Pooja rituals are conducted as codified by Adi Sankaracharya. Tiruchendur temple is 40 kms south of Thoothukudi. The location of the temple is ideal and draws a perennial stream of devotees. The temple overlooking the sea is an inspiring sight. The temple attracts a large number of devotees.

Kazhugumalai Murugan temple and Vettuvankoil temple at Kazhugumalai

Kazhugumalai temple is a rock cut temple dedicated to Lord Muruga, known here as Kazhugachalamurthy or Arumugaswamy. This temple is situated on the road between Kovilpatti and Sankarankoil. It is 18 km to the West of Kovilpatti and 50 km from Tirunelveli and is famous for its architectural beauty. The famous Vettuvankoil in Kazhugumalai, a Vinayakar temple, possesses many marvellous architectural images which attract tourists as well as archaeologists from India and other countries. It equals in style and grandeur to the Kailash of Ellora.

Holy Cross Church at Kulasekarapattinam

The ancient Roman Catholic Church at Manapadu is situated about 60 km from Thoothukudi town. The Holy Cross Church at Manapadu was built in the year 1581⁶⁶. The Cross at the top of the church is said to have been brought from Jerusalem. Moreover, the church is directly associated with St. Xavier, the famous missionary from the West⁶⁷. There are few other places which are of religious significance

Our Lady of Snow Church

Our Lady of Snow Church holds a special place for the people of Thoothukudi. The statue of Our Lady of Snows is a gift of St. Francis Xavier and was installed at St. Paul's Church. When the Dutch arrived in Thoothukudi, the statue was protected by the Head of the Parathvar Community of the town. Later, the community took steps to construct a church for the Lady of Snows and in 1711 our Lady of Snow was finally installed. Other places The Mahrara and Puduppalli, Kayalpattinam and St. John's Church, Nazareth are also places of religious significance.

Jain caves in Kazhugumalai

This place was one of the important centres of Jainism and is situated about 90 km from Thoothukudi⁶⁸. The bay reliefs found here are the contributions of Jain monks and are among the earliest of such works.

There are other famous temples in the nearby southern districts, such as the Rameswaram temple in Rameswaram, the Madurai Meenakshi temple in Madurai city, the Kanniyakumari Amman temple in Kanniyakumari, etc. There are several places of historical interest associated with the Indian Freedom struggle, the Kattabomman Fort in Panchalankurichi, etc. Sites of archaeological significance at Adichanallur and of ancient history at Kazhugumalai are also there.

Historical sites

Thoothukudi and surrounding areas have contributed great personalities and freedom fighters who fought for the liberation of India. Veerapandia Kattabomman, V.O. Chidambaranar, Bharthiyarar, Vanchinathan, etc. are illustrious sons of this soil. There are sites and places in the district in their memory.

Kattabomman Memorial Fort

Veerapandiya Kattabomman, born in 1760, was one of the kings in southern Tamil Nadu who rebelled against the attempts of East India Company to rule the province. He waged war against the British and in the process lost his life in 1799. The existing memorial fort was constructed by the Government of Tamil Nadu in 1974. The remnants of the old fort are protected by the Archaeological Survey of India.

V.O.C Memorial at Ottapidaram

V.O.Chidambarampillai (VOC) was born in 1872 in Ottapidaram and actively participated in the freedom struggle. VOC gathered the support of local merchants to launch the first Indian shipping line in 1906 between Thoothukudi and Colombo, and thus earned the name of "Kappalottiya Tamizhan". VOC passed away in 1936 and a memorial has been constructed for him at his birthplace.



Bharthiyar Manimandapam, Ettayapuram

Mahakavi Subramaniya Bharathi, a great Tamil poet and an tenacious freedom fighter was born in Ettayapuram in Thoothukudi district in 1882. His poetry and compositions in Tamil touched all walks of life and he also composed numerous nationalist poems before passing away prematurely at the age of 39. In 1950, a memorial was constructed at Ettayapuram in his memory and a Bharthiyar festival is celebrated every year in the month of September.

Leisure, eco tourism

There are several locations in the district and nearby areas that can be developed for leisure and eco tourism which are as follows:

- Kulasekarapattinam Dasara Festival Kulasekarapattinam is a port town located 55 kms from Thoothukudi and 14 kms. from Tiruchendur. The ten-day Dasara festival in the month of September – October in the local 300-year old Muthuramman temple attracts visitors from all over the country. The festival is celebrated with pomp and folk artists from all over the state converge at the temple to perform. This festival is second only to Mysore. Other places of interest are Manapadu beach, Kayalpattinam beach, Vallanadu hills and Ayyanar Sunai (picnic place)

The Gulf of Mannar Biosphere Reserve (GoMBR)

The Gulf of Mannar bio Sphere, is situated along the coasts of Ramanathapuram and Thoothukudi The Gulf has 21 small islands and abounds in marine life and has coral reefs, and animals such as dugong, turtles, dolphins and balano-glossus. Kurasadai Islands, off Mandapam, has a vast expanse of shallow waters.⁶⁹

Eco and leisure tourism

There are several other places in the nearby Tirunelveli district such as - Sengaltheri and Mundanthurai (Reserve Forest area), Vallanadu hills, Kundankulam Bird Sanctuary Kalakkadu (elephant sanctuary), Agasthiar Falls, Papanasam, Banatheertham, Mancholai (hill station), Manimuthar falls, Kutralam, Thenmalai (in nearby Kerala), and heritage sites such as Krishnapuram temple for sculpture, Nellaiappar koil in Tirunelveli for religious tourism, etc.

Human Resources

A major strength of Thoothukudi is its high literacy rate. The population is industrious and the labour is productive. The industrial relations scene is strife free.

Infrastructure resources

Tuticorin Port Trust

Tuticorin Port that became a major port in India in 1974 is now on the verge of becoming an international container transshipment hub of South-East Asia.

Salient Features of the Port

The Port is strategically located on the south-eastern coast of India bordering the Gulf of Mannar in the State of Tamil Nadu, close to international shipping lines. The harbour is served by an approach channel, 2.4 km in length and 183 meters in width. The draft of the approach channel is 12.5 meter. Tuticorin harbour basin has a maximum depth of 10.7m with a turning circle diameter of 488 m. The total capacity of the port is 20.55 million tonnes with 13 berths. Containers are handled at berth no 7 by a private operator, PSA-SICAL, The berth is capable of handling 450,000 Twenty-foot Equivalent Units (TEUs) annually. The Gross Crane Rate of 27 moves per hour is one of the best in Indian container terminal business.⁷⁰

In July 2008 the ninth berth at the Port was commissioned. The berth augments the capacity of the Port by 2 million tonnes per annum. The capacity of the Port will increase by another 2.5 million tonnes per annum on the establishment of two more wharf cranes and silos at the berth in 2009. The existing Berth 8 would be converted into a container terminal by 2009, and will have the capacity to handle 400,000 TEUs. The Port also plans to establish an exclusive coal berth for the proposed 1000 mw NLC thermal power plant, by December 2009.⁷¹

Performance of Tuticorin Port Trust (TPT)

Though the Port is young compared to other major Indian ports, its operations have grown impressively especially in the container market. Over the past ten years, the compound annual growth rate for cargo handled by the Port has grown at a rate of 8.0%, with exports growing at a rate of 14.4% and imports growing at a rate of 6.3%. TPT had a comparatively higher compound annual growth rate of 7.1% for the period 2001-06, when compared to Chennai and Kochi ports.⁷² Its growth during 2007-08 was a whopping 19.3%. The traffic handled by Tuticorin Port for the period 1997-98 to 2007-08 is given below:

Table A1.6: Traffic handled at Tuticorin Port from 1997-98 to 2007-08

Activity	Unit	1997-98	2002-03	2007-08
Imports	'000 tonnes	8,413	9,564	15,471
Exports	'000 tonnes	1,560	3,729	6,008
Total	'000 tonnes	9,973	13,294	21,479
CAGR (%)			5.9	10.1

Source: <http://www.tuticorinport.gov.in/portstatistics>

As seen from the above, nearly 75% of the cargo consists of imports. Export is mainly driven by the container market.⁷³ The main drivers for the export market are general cargo, construction materials, granite stone and liquid cargo. General cargo is mainly driven by containerized cargo which represents more than 70% of the export volume.⁷⁴ The container traffic has been growing at a compound annual growth rate of 16.0% for the 10 year period 1997-98 to 2007-08. The container traffic grew at a record rate of 19.44% in 2007-08.⁷⁵

Two important measures of operational performance of a Port are ship Turn Around Time (TAT) and Pre-Berthing Time (PBT). The turnaround time refers to the time taken while a ship is docked at a berth for loading and unloading operations, while pre-berthing time refers to the time from the point of anchoring of a ship in the high seas to its final berthing in the port. Tuticorin Port Trust has steadily improved its operational performance. The TAT improved from 5.95 days in 1999-00 to 2.58 days in 2006-07 and PBT improved from 2.55 days in 1999-00 to 0.13 days in 2006-07⁷⁶.

Strengths and weaknesses of Tuticorin Port

The Port has several strengths as follows:

- The Port has geographical proximity to the international shipping lines
- The Port is an all-weather port and is operational throughout the year as weather disturbances are few; The Port has round-the-clock operations
- The Port is well-protected by Sri Lanka on the south east. Even the Tsunami of 2004 did not affect its operations significantly

- Labour relations in the Port are good.
- The Port has 400 hectares of land available for future expansion/up gradation
- Operational efficiency of the Port in container handling is high
- The Port has been issued the ISO 9001 - 2000 quality certificate in "Providing Seaport Facilities and related Support Services for Sea borne Transportation" (with no exclusions) issued by Indian Register of Quality Systems. It is the first Indian major port to get such a certificate.

The port's weaknesses are its draft limitations and rail connectivity, both of which can be addressed by appropriate investments in infrastructure.

Infrastructure proposed

The Port has identified the following projects:

- Backbone of India: Tuticorin will be the entry for the "Backbone of India" i.e. a high-speed rail connection that would enable transporting containers to specified destinations within fixed time schedules. The proposed backbone will serve South and Central India – from Thoothukudi to Nagpur.⁷⁷ TPT has sought the support of the Railways for establishing this dedicated freight corridor from Thoothukudi to Nagpur⁷⁸
- TPT is collaborating with Container Corporation of India Limited (CONCOR) for transportation of containers by rail faster to Bangalore⁷⁹
- TPT has requested Railways to establish a separate rail siding in Hare Island. The Port plans to build a warehouse for storing bulk cargo.⁸⁰

The Port is proactive and has indicated that new investments in 6-8 lane roads connectivity to the Port, electrification of Tuticorin-Madurai-Bangalore railway track (at present only the stretch between Erode and Salem is electrified), formation of a new railway line between Kanniyakumari, Tiruchendur, Tuticorin and Karaikudi for transportation of cargo, building warehouses for storage, setting up of new container freight stations, constructing yards to park lorries, setting up lorry repair works, modernizing cargo-handling equipment and creating social infrastructure would greatly enhance the Port's operations and Thoothukudi's economy⁸¹. The Port would also facilitate development of cruise tourism along with interested stakeholders.

**Projects-in-hand at Tuticorin Port**

Under the National Maritime Development Programme, a sum of Rs. 4,571 crores has been allocated for Tuticorin port⁸². The following table gives details of the ongoing / proposed developmental projects at Tuticorin Port.

Table A1.7: Ongoing/ proposed projects for the Development of Tuticorin Port

Project	Investment Rs. Crore	Expected Date of Completion
National Maritime Projects Phase- I (Development of Inner Harbour) - Dredging of the dock basin and channel to increase the present draft of 10.70 m to 12.80 m, construction of berth No. 9, construction of North Cargo berth to handle import of coal for NLC thermal plant, construction of 3 shallow berths, structural up gradation of coal jetty-II, conversion of Berth No.8 as container terminal, replacement of equipment, up gradation of road, provision of auxiliary facilities	961.2	2008-09
Phase II involves development of the outer harbour - Deepening and dredging of outer harbour (to increase the draft from 12.80 m to 14.5 m), construction of berth and providing container handling equipment, construction of oil terminal, conversion of berth no. 9 as container terminal, construction of an international size ship building yard with a capacity to build 6 panamax ships per year and construction of separate signal terminal	3,610.0	2011-12
Total	4571.2	

Source: National Maritime Development. Programme, Min, of Shipping, Road Transport and Highways, March 2006

The Port envisages that by the end of the 11th Plan period, the Port would have a capacity of 84.3 million tonnes per annum⁸³.

Power generation

TNEBs' Thermal Power Plant (TTPS) with a capacity of 1050 MW is a major source of power for Thoothukudi district. In 2006-07 TTPS generated 8,083 million KWh of thermal power.⁸⁴ There are also some wind turbine generators in the district with installed capacity of 62.4 MW.⁸⁵ There is also considerable captive generating capacity in the district, estimated to be about 157,000 KVA.

Proposed enhancement of power generation

Several thermal power projects have been announced/ approved/ under implementation in Thoothukudi district. The following thermal power projects proposed for establishment in Thoothukudi district are likely to come on stream by 2012:

Table A1.8: Thermal power projects proposed in Thoothukudi district

Project	Location	Sector	Capacity MW
TNEB – Neyveli Lignite Corporation Joint Venture	Near the Port	Joint Venture	1,000
BHEL – TNEB super critical power project	Udangudi	Joint Venture	1,600
Coastal Energen Pvt Ltd.	Near Thoothukudi	Merchant Power Plant	1,050
Total			3,650

In addition, Ind Bharat Power Gen Company Limited is also setting up a 3 x 63 captive power plant near Puthiamputhur near Thoothukudi. There is also a proposal to set up another plant of 1,320 MW (2x660 mw) by the same company near Manapadu.

Roadways

At present the Thoothukudi is connected by the following major highways:

- Two lane NH 45B Thoothukudi to Ettaiyapuram – Aruppukottai - Madurai.
- Two lane NH 7A Thoothukudi to Tirunelveli⁸⁶
- Two lane highway to Tiruchendur

There are a few ongoing and proposed road projects as given below:

Table A1.9: Ongoing and proposed highway projects that would benefit Thoothukudi District

Road	Details	Cost Rs Crores	Expected Date of Completion
NH7A	Four laning of 47.2 Km length of road in NH-7A from Tirunelveli to Thoothukudi taken up by National Highways Authority of India (NHAI) ⁸⁷	231	December 2009
NH45B	Four laning of Madurai-Arumpukottai-Tuticorin stretch 128.157 kms under NHDP -III ⁸⁸	420	
East Coast Road SH176	The balance length from Nagapattinam to Thoothukudi for widening and improvement under World Bank assisted Tamil Nadu Road Sector Project ⁸⁹ Thoothukudi-Tiruchendur-Kanniyakumari RoadUpgraded to State Highways – 119.200 Km ⁹⁰	NA	NA
Road connecting 11 districts in Tamil Nadu	Road from Arani, in Vellore District to Thoothukudi covering 724 kms. Tamil Nadu Government has partnered with World Bank ⁹¹	119.200	2008
Nagapattinam to Thoothukudi Stretch.	Up gradation works on Nagapattinam to Thoothukudi stretch for a length of 349 Km beginning at Nagapattinam town and passing through Tiruvarur, Thanjavur, Pudukottai, Ramanathapuram districts and ending at Thoothukudi. ⁹²	513	NA



Railways

Thoothukudi is connected by a single broad gauge railway line to Madurai. Thoothukudi has railway access to Inland Container Depots (ICDs) at Madurai, Tirupur, Karur, Salem, Coimbatore, Chennai and Bangalore⁹³. The share of Railways in handling Tuticorin Port cargo is 10% (excluding captive cargo).⁹⁴

The following ongoing projects are important from Thoothukudi's perspective:

- Doubling of Madurai-Dindigul broad gauge railway line: The 62 km stretch of railway track converted into a double BG track at a cost of Rs. 130 crores.⁹⁵
- BG conversion of Tirunelveli – Quilon MG line: The present Tirunelveli-Quilon MG line will be converted into a BG line to help in cargo movement⁹⁶

The doubling of Madurai-Dindigul line would enable more trains to be introduced to Thoothukudi. Thoothukudi Railway Station has been improved with a project worth Rs. 2.06 crores. The Indian Railway Catering and Tourism Corporation plans to establish a budget hotel just outside the station. Work on the road over bridge is in progress at railway gate no.3. Likewise, flyovers would be constructed at gates 1 and 2 on a cost-sharing basis with the State Government. All gauge conversion in Tamil Nadu will be completed by 2010.⁹⁷ Funds have been sanctioned for the feasibility survey report for the new Karaikudi-Tuticorin (via Ramanathapuram) broad gauge line⁹⁸

The 159 km stretch from Chennai to Villupuram is electrified. Electrification work is under progress between Villupuram and Trichy at a cost of 97 crores and is expected to be completed by September 30 2008⁹⁹. Trichy-Madurai electrification will be completed during the 11th Five-Year plan¹⁰⁰ The Union Planning Commission has given its in-principle approval for the electrification of the Madurai-Tuticorin and Maniyachi-Nagercoil broad gauge sections, at a cost of Rs.146 crores¹⁰¹.

It is reported that Continental Warehousing Corporation Ltd is proposing to build one siding with two lines at a cost of Rs. 4.5 crores at Meelavittan which will be completed by 2010 and Coastal Energen Pvt. Ltd. is also proposing a 13 km siding from Meelavittan to Kolathur near Vilathikulam.

Thoothukudi Airport

Thoothukudi airport is situated in Vaigaikulam, 10 kms from Thoothukudi town and 16 kms from SIPCOT's Tuticorin Industrial Complex Phase-I. At present, Air Deccan is operating a daily flight to Thoothukudi by ATR model aircraft. As per the policy of Airport Authority of India to revive small airports, the Thoothukudi airport is being expanded and modernized and the runway is being extended from 1350 meters to 1800 meters to enable operating of bigger aircraft.¹⁰² The State Government is taking measures to acquire land for this expansion.¹⁰³ Plans are also underway to introduce night-landing facility at the airport at a cost of Rs 1.25 crore.¹⁰⁴

The Tamil Nadu State Government is taking up with the Government of India for providing Thoothukudi and Madurai airports international connectivity.¹⁰⁵ The future plans of the airport expansion should include cargo handling, international flight connectivity, improvement of roads from the airport to the town, more flights, and increased passenger capacity, better connectivity to nearby towns like Madurai, Coimbatore, Bangalore, Cochin, Chennai and Trichy.

Urban infrastructure

City Roads

The major road network within Thoothukudi Town is Palayamkottai road (NH), Ettayapuram road (Madurai road), Ramanathapuram road, Tiruchendur road and West Great Cotton road. The West Great Cotton road leads to the new Harbour. A bye pass road outside the town from Harbour, Thermal Plant and SPIC connects with the Madurai road.

The Railway station is located at the eastern end of the town. However, most of the stakeholders felt that its location should be shifted to Meelavittan as traffic within the town is badly affected when there are train movements.

The road infrastructure is given below:

Table A1.10: Length of roads within Thoothukudi town

Roads	Km
Surfaced Roads	138.0
Un surfaced Roads	36.0
Total	174.0
Area in SQ.KM	13.47
Road length per SQ.KM	12.9

Source: Thoothukudi Town – Thoothukudi Special Grade Municipality Formation as Municipal Corporation

Transport

Thoothukudi corporation has an “A” class bus stand located at Ettayapuram Road with 51 bus bays. About 600 buses operate from here daily.¹⁰⁶ The old bus stand is located at Palayamkottai road and has been classified as ‘C’ class bus stand from which 250 buses are operated daily.

There are 18 bus shelters in Thoothukudi corporation with poor infrastructure facilities.¹⁰⁷ People also depend on mini buses, shared auto rickshaws and auto rickshaws for their commuting. According to the stakeholders met, the two-wheeler population is growing very fast in the town.

Parks

There are 17 parks and 7 play fields in Thoothukudi corporation. Of the 17 parks, 10 are notified which are being maintained by the corporation and by private parties. Improvements by way of restoration of parks with modern facilities, development of sports facilities, construction of walkways around the parks, and development of roadside gardens have been proposed at a cost of Rs. 45 lakhs.¹⁰⁸

Water supply

The main source of water supply for the town is River Thamirabarani. The head works is at Vallanadu, located at a distance of about 42 kms by road along Thoothukudi-Tirunelveli NH-7A.

Table A1.11: Salient Features of Thoothukudi Water Supply Scheme

Population covered	2,22,000
Quantity of Water supply at present	13.5 mld
Per Capita Supply	80 lpcd ¹⁰⁹
Duration of Supply	Once in three days
Total Storage Capacity	123LL
Length of Water Distribution Main	155.25 km
Un-served Area	26.23 km

Source: Thoothukudi Special Grade Municipality Formation as Municipal Corporation – A Proposal

At present, the quantity of water received at Rajaji Park (the final collecting sump) is only 21 mld due to loss of water during transmission.¹¹⁰ The total length of water distribution main in the town is 155.25 km with 31,433 service connections¹¹¹. There are about 700 public fountains. At present, six zones receive water on alternative days and the other two once in three days¹¹². Number of streets covered by piped water supply is 222, whereas, the number of streets in the corporation is 862¹¹³.

Sewage

Thoothukudi corporation has underground drainage only in 20% of the corporation area. The system functions poorly with many open drains in the town that discharge sewage into the Buckle canal for disposal in the sea. A sewage treatment plant is proposed to be set up in Tharuvaikulam.¹¹⁴

An underground sewage scheme is being implemented under TNUDP – III with the objectives of rehabilitation of the existing system and extending the system to the uncovered areas at a cost of Rs. 46.40 crores. The project involves laying sewerage lines for 117.18 km and giving 23,910 house-connections.¹¹⁵

A project to clean up Buckle Canal is being taken up under the Tamil Nadu Urban Development Fund (TNUDF). Rs. 30 crores has been sanctioned for the project that is expected to take 18 months for completion.

Storm Water Drains

The existing open type storm water drains covers only about 20% of the total length required. Some of the main roads lack storm water drains and there are missing links in the drains between bye lanes and main roads. Since the drains are open, solid kitchen and plastic wastes thrown into them clog them and this poses problems in the flow.¹¹⁶ The storm water drains carry the rain water and sewage into the Buckle canal which ultimately is drains into the sea.

Solid waste

Thoothukudi town generates about 102 tonnes of solid waste per day¹¹⁷. Waste collection and transportation from 26 wards is managed directly by corporation and for 25 wards it is privatized.¹¹⁸ The collection and transportation of the waste is not adequately mechanized. There is a compost yard at Tharuvaikulam, 12 Kms away from Thoothukudi which does not with adequate infrastructure facilities¹¹⁹.

The corporation has proposed an Integrated Solid Waste Management project under the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT).¹²⁰

Social infrastructure

Education

Thoothukudi has both private and public schools. The private schools have good infrastructure, whereas, the government schools have poor infrastructure and lack proper toilets and urinals, furniture, flooring, reading rooms, library and computer facilities.¹²¹

Table A1.12: Schools in Thoothukudi Corporation

Schools	Thoothukudi Corporation	Thoothukudi District
Primary	54	1076
Upper Primary	25	284
Secondary	14	73
Higher Secondary	24	97
Total	117	1530

Sources: Municipality - Thoothukudi Special Grade Municipality Formation as Municipal Corporation – A proposal District - <http://www.thoothukudi.tn.nic.in/upinfo/Gen-1.htm>

Note: Of the schools in Thoothukudi Municipality, 10 are municipal schools of which 3 have been renovated and provided with basic amenities.

The colleges in Thoothukudi District are affiliated to Manonmaniam Sundaranar University, Tirunelveli.

Table A1.13: Colleges in Thoothukudi district¹²²

Colleges for general education	13
Engineering Colleges	5
Medical College	1
Polytechnic Colleges	6
Teacher Training Colleges	2
Physical education	1
Fisheries College	1
Agriculture College	1
College for Special Education	4
Total	34

Source : <http://www.thoothukudi.tn.nic.in/upinfo/Gen-1.htm>

In Thoothukudi town, there are 4 arts and science colleges, a government polytechnic, a fisheries college, and a medical college. There are two engineering colleges which are somewhat removed from the town.

SSN Institutions of Chennai is planning to invest Rs. 500 crore to set up a campus in Thoothukudi by 2009.¹²³

Health

Government’s Headquarters Hospital, situated in Thoothukudi corporation limit serves the population residing within nine km radius.¹²⁴ There is a separate E.S.I. Hospital at Thoothukudi., though the town has considerable number of workers. For the workers engaged in salt pan, a 32-bedded ward is also available in the district headquarters hospital, Thoothukudi.¹²⁵ It is absolutely vital that the ESI should be upgraded into a multi-speciality 100 bedded hospital, The hospital must have specialist service facilities for cardiology with an Intensive Care Unit, radio diagnostic services, including CAT Scan, a blood bank and a modern laboratory besides departments of gynaecology, paediatrics, orthopaedics, ENT,nephrology and ophthalmology.

Table A1.14: Medical facilities available in Thoothukudi District (all systems of medicines)¹²⁶

Number of Hospitals	22
Primary Health Centres	61
Health Sub centres	249
Beds in Hospitals and Dispensaries	1222
Other medical institutions	37
Number of Doctors	224
Number of Nurses	171

Source: <http://www.thoothukudi.tn.nic.in/upinfo/Gen-1.htm#hos>

The Tuticorin Medical College and Hospital will have a new 24-bed paediatric ward at a cost of Rs. 50 lakhs, the entire project cost being borne by Sterlite Industries.¹²⁷

Since the total number of doctors in the district is about 230, and the total bed strength is about 1,200¹²⁸, there is about 1 doctor per about 7,400 persons and 1 hospital bed per about 1,400 persons. The state average is about 1 doctor for every 7,050 persons.

ANNEXURE 2

Thoothukudi – Potential for Economic Development

Thoothukudi, in view of its location, natural resources, existence of well established industries, port infrastructure, availability of educated and quality human resources, etc. has considerable potential for industrial development

Tuticorin Port

Potential as a hub port for EXIM/Coastal transshipment hub containers

Tuticorin Port has several advantages, in terms of its location, efficiency, etc. as elaborated in Annexure 1. Its potential to become a major hub port is discussed below.

The large container ships plying on the East-West route only call at container hub ports. Major ships carrying containers between East Asia on the one hand and the Americas, Europe, and Africa on the other, pass via the Indian Ocean and usually break their bulk at Colombo, or at Hong Kong or Singapore. It is reported that about 60% - 80% of Indian containers are transhipped at Colombo, Singapore and Dubai¹²⁹.

These large container ships are usually Panamax or post Panamax vessels, i.e. those that have a draft of more than 12.5 meters and carry more than about 4,000 TEUs. With economies of scale weighing in favour of larger container vessels, there are many vessels capable of carrying 7,500 TEUs and in the future, their sizes may increase even further. At present the Port is only a feeder port for containers from its hinterland, which mostly get transhipped in Colombo, Sri Lanka. Large mother ships do not call at the port.

The Tuticorin Port Trust has indicated that with the capacity additions being made through the Phases I and II, the tonnages handled at the Port would increase to about 80- 85 million tonnes by about 2015 and can go up to over 130 million tonnes by 2025. The Port will be able to accommodate Panamax vessels with a capacity of 70,000 dwt (the current capacity of the port is 50,000 dwt)¹³⁰.

Tuticorin port, with all its advantages, including location is ideally placed to become a hub port for Indian containers. The Business Plan of the Tuticorin Port Trust has, therefore, envisioned to become the 'Preferred Distribution Hub of India' and one of its goals is that of becoming a transshipment hub for India¹³¹.

The growth indications of achieving 130 million tonnes by 2025 are based on the outer harbour having a draft of 14.7 meters after completion of the outer harbour project. These therefore do not take into account the Port handling transshipment of containers in post Panamax vessels, as the draft of 14.5 meters would not be enough to handle post Panamax vessels and container ships of more than 4,500 TEUs.

India's container traffic is increasing at the rate of about 15% per annum and with the projected growth of the Indian economy at 8% -9% per annum and increased containerization of India's cargo, India's container traffic is likely to grow very strongly in the future.

The Tuticorin Hub Port Development Council had commissioned a study in 2005 to determine the potential of the Port for becoming a hub port. According to the study, if the Port were to become a container hub port, the container traffic at Tuticorin Port would grow to 1.37 million TEUs by 2010, 2.31 million by 2015 and 3.72 million by 2020, if the Port would have the infrastructure to handle Post-Panamax vessels with an alongside depth of 17.5 metres¹³².

Ship building yard

The Port Trust has also mooted the idea of housing a ship building yard at the Port. If the ship building project were to come about, it will encourage an accelerated growth of ancillary units and create employment to 5,000 persons.¹³³

Implications of development of Tuticorin Port to its hinterland

The expansion of the Port would add tremendously to the economy of Thoothukudi town and its development as a major industrial destination. On a rough and ready basis it may be estimated that every additional million tonnes of cargo per annum handled at the port would give direct employment to about 150 persons. Thus, if the Port were to handle 130 million tonnes by 2025, this could give additional employment to about 15,000 or more persons by 2025. If the Port were to become capable of handling post Panamax vessels, the job potential and the level of economic activities would further enhance tremendously.

The development of the Tuticorin port and its hinterland are mutually dependent. The increases to the port capacity will give the much-needed fillip to the economic development of Thoothukudi district. At present, the hinterland of the Tuticorin port mainly consists of the area which is within a radius of 500 kms. from Tuticorin port. But with improved road and rail connectivity, especially if the dedicated freight corridor from Erode to Nagpur (backbone corridor) were to become a reality, the hinterland would extend not only to Bangalore, Coimbatore, Tirupur and parts of Kerala, but also up to Nagpur.

A 300 acre food processing SEZ is proposed to be set up on the outskirts of Thoothukudi by CCCL infrastructure Limited, Chennai. This SEZ will have comprehensive infrastructural facilities including cold storages, warehousing, irradiation complex, food testing laboratory, uninterrupted power & water supply, waste treatment, etc.

The upcoming Nanguneri and Gangaikondan SEZs in Tirunelveli district, due to their excellent connectivity to the Port, will give considerable boost to the tonnages handled by Tuticorin Port. Nanguneri SEZ is 82 kms. away from the Tuticorin port. The SEZ¹³⁴ would have 7 SEZ clusters of which 5 are very relevant for the Port - engineering industries in 121 ha, auto components industries in 110 ha, pharmaceutical industry in 115 ha, electronic hardware industry in 107 ha, and logistics in 70 ha. The container traffic for Thoothukudi is therefore bound to increase.

Gangaikondan that is SEZ 45 kms. away from Tuticorin Port also has 255 acre transport engineering goods SEZ promoted by SIPCOT in its Industrial Growth Centre for the manufacture of Transport Engineering Goods.¹³⁵ A growing Port would encourage growth of units in these SEZs and also the development of new major export oriented industries in these areas.

Power projects

It would appear that due to the presence of the Port and availability of dry land there is substantial scope for additional power generating capacity near Thoothukudi. A number of thermal power plants which will create an additional 3,650 MW of electricity over the next 4-5 years have been proposed in Thoothukudi. Installation of such additional power generating capacity would translate into substantial development in and near Thoothukudi as these additions would have a 3-fold beneficial effect as follows

- It would mean that substantial port facilities for handling coal would have to be created near the power plants, thus enhancing the port activities
- There would be significant effect on employment in and around Thoothukudi
- The availability of power in abundance would attract industries near Thoothukudi

Large scale industries

Thoothukudi city and surrounding areas have considerable presence of industries in several industrial sectors. The most important industries (other than infrastructure providers i.e. the Port and the TNEB power plant) are the following:

Copper

Sterlite Industries India Limited (SIIL), a member of the Vedanta Group, located near Thoothukudi town produces copper from copper concentrates and has a capacity to produce at its smelter 400,000 TPA of copper anode, at its refinery, 205,000 TPA of copper cathodes and at its rod plant, 90,000 TPA of copper rods. It also produces 1.3 million tonnes of sulphuric acid and another 180,000 TPA of phosphoric acid. It is one of the largest industrial units in southern Tamil Nadu.



Fertilizer and chemicals

Southern India Petrochemical Industries Limited (SPIC) plant, at Thoothukudi has a capacity to manufacture about 500,000 TPA of urea, a nitrogenous fertilizer, and about 280,000 TPA of diammonium phosphate, a phosphatic fertilizer. SPIC also has the capacity to produce intermediates like ammonia (352,000 TPA) and sulphuric acid (150,000 TPA), co-products like aluminium fluoride, phosphoric acid, and by-products like gypsum¹³⁶.

Kilburn Chemicals located in the SIPCOT industrial estate in Thoothukudi manufactures titanium dioxide of anatase grade (capacity about 8,250 TPA) and Ferrous Sulphate Heptahydrate (Copperas). It also exports its products. Because of the availability of ilmenite, Tata Steel has evinced interest in setting up a major titanium dioxide plant in Sattankulam area in the district and has signed a MOU with the Government of Tamil Nadu for setting up a Rs. 2,500 crore project.

The presence of these large industries in Thoothukudi can lead to establishment of industries that have product synergies with these units. e.g. lime; FMCG units in soaps, detergents, insecticides, etc. that can use availability of Phosphoric acid; construction industry materials such as boards, jig boards, plaster of Paris, etc. from Gypsum; plant nutrients, effluent treatment chemicals, iron oxide pigment, etc. from ferrous sulfate; products using anatase i.e. foodstuff, cosmetics and pharmaceuticals, value added anatase titanium dioxides; and textile dye making industries from Fluoro-silicate acid.

Medium and Small industries

Several medium and small industries, traditional and others are situated in Thoothukudi and its neighborhood. The major segments are:

- Marine Products
- Minerals (Ilmenite, Garnet, etc.)
- Dry flowers export
- Readymade garments (Puthiamputhur)
- Salt
- Edible oil extraction
- Food-processing industry making products such as jaggery, snacks (macaroons, muscoth halwa, etc.)
- Services
 - o Port and related service industries
 - o Hotels

It has significant presence salt industry, fishing and fish exports industry, dry flowers exports, and textiles garments industry.

Marine products and sea food exports

Thoothukudi has a fishing port and fishing has been its traditional industry. It has certain significant players such as Nila Sea Foods and Diamond Sea Foods who are exporters of processed fish. The industry exports about 28,000 TPA of fish catch. There is also a fisheries college with a research institute.

Value added marine products, such as ready to retail processed seafood production has export potential.

Minerals

Thoothukudi district has deposits of ilmenite and garnet along its seacoast. Garnet is used as an industrial abrasive while ilmenite is used for production of titanium dioxide. In view of the availability of ilmenite Tatas have proposed to put up a large plant in the district. There are a few medium sized players in garnet production such as Indian Ocean Garnets and Transworld Garnets.

Dry flower exports

There are a few dry flower export units near Thoothukudi, some like Ramesh Dry Flowers being large units. This industry offers two important benefits: foreign exchange earnings and high employment potential. Availability of land, climatic conditions, Port, skills, etc. in Thoothukudi bestow locational advantages to this industry there. There is further potential for export of dry flowers.

Readymade garments

There is a cluster in Puthiamputhur village near Tuticorin, which has grown organically over the last two decades or so. It is reported that about 150 household units manufacture garments from synthetic materials here. The industry is labor intensive and according to one estimate the direct and indirect employment provided by this industry in Puthiamputhur and surrounding areas may be around 20,000 persons. Puthiamputhur garment manufacturers, however, mainly do job work as they do not have sufficient marketing skills and lack adequate knowledge about markets.

This industry has great potential to grow with the right kind of inputs on marketing, designs, development of certain infrastructure facilities, some concessions in power tariff, etc. With proper guidance in marketing through a cluster development program, the textile garment industry in Puthiamputhur could grow tremendously as the skills and momentum are already there.

Salt

There are a few large scale salt manufacturers and exporters in Thoothukudi such as Sahayamatha Salterns Private Limited in salt chemicals exports. In its heyday, the industry was manufacturing about 25% of India's production and was exporting over 300,000 tonnes. However, salt industry in Thoothukudi has been facing problems in the past few years due to a variety of reasons. These include high production costs, shortage of labour, small holdings, etc. It is reported that employment in salt industry has been falling and it is now estimated to be about 40,000 to 60,000 in the district. Also, it was reported that with real estate prices going up in Thoothukudi, there is a threat that land used for salt production may slowly get converted to other uses.

However, since salt is an essential commodity not only for human consumption but also for industrial use, and since transportation costs assume great relevance over long distances, Thoothukudi salt industry should be able to continue to serve the southern markets such as Tamil Nadu, Kerala, Karnataka, etc. by consolidation and modernization. Value added salt products manufacturing units e.g. iodized salt free flowing salt, fortified salts, etc. may be promoted in Thoothukudi. Further, industries using by products of salt industry - e.g. bromides, various chlorides, magnesium metals and compounds may have some potential.

Coconut oil and coir products

The dry climate and salt air enable the processing of coconut oil and coir products by obtaining the nuts from places such as Madurai, Ramanathapuram, Pollachi and Kerala. The oil has ready Indian markets, including in North India. V V D and sons is a major player in this sector.

Senna

Senna is a medicinal plant, whose pods and leaves are used as purgatives. These are mostly exported without processing into final products and hence there is scope for value addition. An agri-export zone has been proposed for the district, as this has export potential.

Packing industry

The presence of the Port and marine products and dry flowers exports provides ready customer base in Thoothukudi. Expansion in any of these industries would inure to the benefit of the packing industry.

Others

There is potential for promoting industries in processed foods like muscoth halwa, bakery products like macaroons, banana powder, energy foods from cumbu, maize, etc. Tamirabarani water is said to be highly suited for the food sector. The dry climate also offers potential for export of dehydrated vegetables such as dry drumsticks, onions, etc. Cashew nut- processing units making roasted and salted cashew nut, cashew nut shell liquid oil, etc. also may have some scope.

An indication of the size of small scale industrial units in Thoothukudi district is given below:

Table A2.1: Small scale industrial units in Thoothukudi district in 2005-06

Registered SSI units	Nos.
Food & food products	5
Hosiery and Readymade	817
Wood and wooden products	31
Paper and paper products	1
Rubber and plastic products	1
Chemical and chemical products	2
Machinery and parts except electrical machinery	1
Other manufacturing industries	93
Total	951

Source: Statistical handbook of Thoothukudi 2005-06

Service Industries

Logistics, freight and forwarding

This is one of the major service sectors in Thoothukudi, a sector that has thrived with the Port. This industry is employment intensive and has considerable potential to grow, with the growth of logistics, warehousing, etc. given the expected growth in the Indian economy and the Port's operations in the future. There are several well-established major players such as St. Johns Freight Systems Limited, Villavarayar & Sons, etc. in the field. This sector is a major contributor to the economy of Thoothukudi town and the district. The growth of Thoothukudi Port, especially if it were to become a hub port, would considerably add to the growth of this sector in Thoothukudi.

Tourism

Thoothukudi and surrounding districts have many places of tourist interest - heritage and religious tourism, eco tourism, etc. TVS, a large industrial group in South India, has taken over the maintenance of the Nava Tirupati temples and they present a fresh look.

Leisure and eco tourism

Gulf of Mannar Bio-sphere Reserve

The more suitable of the small islands on the Gulf may be developed into beautiful resorts catering to foreign and Indian tourists with suitable infrastructure, protection, etc. However development of this tourism potential will have to be evaluated from an ecological perspective. *Hence development will have to be undertaken after studying the ecological implications of doing so and to the extent it is safe to do so, without disturbing the ecology of the bio reserve.*

Beach resorts

Manapadu, the picturesque beach along the Thoothukudi district coast and the beach along Kayalpattinam have potential. Eco beach resorts, luxury eco-resorts, fishing village visits, etc. can be developed along the beaches.

Leisure tourism, heritage and religious tourism

At present it appears that at most of the places for leisure, heritage and religious tourism there are not sufficient facilities that can accommodate various classes of tourists and in most places the tourists arrive and depart in a few hours. Hence spend per tourist is not significant. These places may be judiciously combined and covered by tourist packages that can start from Thoothukudi city.

The Directorate of Town Panchayats has, along with the Tourism Department, plans to establish a tour circuit connecting nine heritage towns situated in the district. Information networking would be put in place as part of the heritage circuit project, to promote a single package showcasing the tourism potential in these towns, while at the same time enhancing the infrastructure at the heritage sites to create a tourism-friendly climate.¹³⁷

Cruise tourism

The combination of Tuticorin Port and so many places with potential for historical, religious and leisure tourism around Thoothukudi, as well as at nearby southern districts offer a great opportunity for cruise tourism with Tuticorin Port as the gateway. It is one of the five ports identified by Government of India for developing cruise tourism, i.e. along with Mumbai, Mormugao, New Mangalore and Cochin on the western coast. Tuticorin Port has also constructed a dedicated terminal for passengers and has reduced the vessel-related charges to attract more cruise liners to the port. The government is planning to set up a central marketing apparatus for all ports to formulate business strategies¹³⁸.

By establishing and being part of a successful cruise tourism circuit, the foreign and Indian tourists who would spend some time and stay at Thoothukudi or the surrounding areas can be increased and it would give a great boost to the economy of the area.

Airline operations

The present airport at Thoothukudi is ideally located, being on NH 7A, the highway between Thoothukudi and Tirunelveli about 18 kilo meters from the city. It was reported that the present once a day Air Deccan flight has a very high occupancy ratio, despite it being a mid- afternoon flight. The growing Port operations, new power plants coming up, and industrial and business development, would provide an opportunity for airline operators to operate more flights to Tuticorin Airport. This would trigger of a virtuous cycle as the enhanced air connectivity would make the city more accessible to businessmen, executives, tourists, and government which in turn enhance the economy of Tuticorin.

Hotels

The city at present does not have many star category hotels or high class restaurants. A growing economy would extend significant business opportunities to start quality hotels and restaurants in the city, especially in the outskirts of the city, on the NH 7A.

Entertainment

With the growth of the city and influx of middle income groups into the city and its neighborhood, there is an acutely felt need in Thoothukudi for places of entertainment – cinema halls, shopping malls, amusement parks, places for leisure activities, etc. There is therefore potential to develop these businesses in the town. With the growth of the Port, Power plants, etc. the need for such assets would be even greater.

Conclusion

Thoothukudi has demonstrated that given the opportunity of a thriving Port, a town that is geographically at a corner of India, need not necessarily be away from the mainstream of industrial and economic growth of India. If the infrastructural bottlenecks can be expeditiously removed and the Port is enabled to develop and attain its full potential, it can not only become a thriving and beautiful city but also be a powerful engine for the development of the southern districts.

ANNEXURE 3

Summary of the discussions held with a cross-section of stakeholders at Thoothukudi

In depth discussions were held with a cross-section of stakeholders at Thoothukudi from various sectors and strata of society – industry, industry associations, government officials, non governmental organizations, educationists, college students, shopkeepers and small business owners, corporate executives, artisans, auto drivers, etc. The purpose of these meetings was to ascertain the views of the stakeholders about the potential of Thoothukudi and their vision for Thoothukudi in the year 2025.

One of the most important insights that emerged from these meetings is that the stakeholders are well aware of the potential of the town, are able to envision and articulate their vision, and are almost unanimous in respect of many aspects that need to be addressed to realize their vision.

Given below is a summary of the respondents' views:

Economic potential

The stakeholders regard the following as assets that can be leveraged for the economic development of Thoothukudi:

- The round the year Thoothukudi Port is seen as a major asset which can be leveraged for the development of Thoothukudi and its hinterland. They would like the Port to be developed and the draft deepened for handling large ships, so that the Port would become a hub port. Many felt that a few more small ports, like Manapadu, should be developed.
- Availability of dry lands is seen as another great advantage for Thoothukudi's industrialization. This together with the Port was seen as giving Thoothukudi the potential to host export oriented units.
- The stakeholders would like to see Thoothukudi as a major Industrial Centre in 2025. They would like to see the presence and the growth of large industries in engineering, automotive, chemical, ship building and repairing, and small and medium industries in salt, food processing, dry flowers, fishing and marine products, and establishment of a large industrial park. They would like to see a thriving service and small business sector and would like business counseling, training, finance and security to entrepreneurs so that large employment potential is created through them. Presence of large industries and the various smaller industrial sectors can encourage other industries to come up near Thoothukudi.

- Tourism assets like Navatirupathi and Tiruchendur temples, Manapadu and Thoothukudi churches and Manapadu and Kayalpattinam beaches, islands off Thoothukudi coast, etc. are seen by the stakeholders as potential drivers for growth of tourism industry. The stakeholders would like to see these assets developed and Thoothukudi become a tourist centre with several star category hotels and tourism infrastructure.
- Several stakeholders felt that the people of Thoothukudi are hard working and that industry in Thoothukudi has a history of maintaining good industrial relations.

Infrastructure needs

On infrastructure, there is a general agreement amongst stakeholders that infrastructure, especially urban infrastructure, and city connectivity has to be considerably improved for realization of Thoothukudi's economic potential. Their aspirations in this regard may be summarized as follows:

Urban Infrastructure

Roads

- The present roads within the town are felt to be inadequate. There are only two major roads in the town and these are not broad enough to carry fast moving traffic.
- To ease the congestion, many felt that it was necessary to shift the Thoothukudi railway station to Meelavittan, or construct overhead bridges for level crossings. One of the suggestions made by many was that the station should be shifted to Meelavittan and the present railway tracks converted to a roadway so that it can become a thoroughfare.
- It was felt that flyovers would be needed across WGC road at a few points and a ring road around the city should be constructed.
- The roads would need to be broadened and surface improved.
- The roads should be such that they are safe for pedestrian and cycle traffic.

Transportation

- The stakeholders felt that public transportation system should be such that people do not have to depend on private transport. The number of buses should be increased and the bus stands and shelters should be clean.
- Students would like to see introduction of special buses, shuttle train service, etc. that serve them so that their commuting becomes easy.
- Many suggested that a lorry yard should be constructed outside the city to ease traffic congestion on the arterial roads.

Water supply and water sources

- Solving the water supply problem of the city is felt to be very essential. Many stakeholders felt that Tamirabarani has some more capacity to serve the town's needs as considerable quantity is let waste into the sea. Check dams should be constructed so that the water table will improve.
- The water storage facilities are very few and water bodies around the town should be improved. Some suggested that wells in Korampallam should be developed and weirs should be constructed at Srivaikuntam and Aathur.
- Rain water harvesting should be encouraged
- Many felt that for Thoothukudi to take off economically and become a major industrial centre, it has now become critical to construct desalination plants to augment the water supply.

Sanitation

- Sanitation and drainage facilities and garbage collection are felt to be very inadequate. During monsoon, the streets are flooded. The stakeholders would like to see a much cleaner and healthier city and the Buckle canal cleaned and revived with roads on either side of the canal for easing road congestion.

Electricity

- The stakeholders would like to have uninterrupted power supply and felt that in addition to power plants, development of alternative energy should be encouraged.

City connectivity

Highways

- The stakeholders would like the 4-laning of the roads to Tirunelveli and Madurai expedited and these roads to be further upgraded in the future to suit the increasing traffic needs of the city and the Port.
- A road along the railway tracks to Maniyachi junction was felt necessary to enable fast travel by road to board trains from there.
- Completion of the East Coast Road to Ramanathapuram is also a suggestion made by a few stakeholders.

Railways

- Railway connectivity was felt to be inadequate by all. There was a unanimous view that more number of trains between Chennai and Thoothukudi are needed. The rail link between Thoothukudi and Coimbatore needs to be revived.
- The important railway links sought are a broad gauge line between Karaikudi and Thoothukudi and between Thoothukudi and Tiruchendur as these would help create an East Coastal Railway line with alternative connectivity to Chennai.
- Many, especially the students and small business owners, felt that an electric shuttle train service should be run between Thoothukudi and Tirunelveli. This would help the commuting public, especially the student community immensely. This would also improve the city's connectivity as they can then board the trains at Tirunelveli which is well connected by train services

Airport

- The business community was unanimous that the airport should be expanded in phases so that ultimately it becomes an international airport.

Social sector

Education

- There is a unanimous view amongst the stakeholders that the quality of education in government schools should improve. It was felt that the Government schools lack infrastructure like good classrooms, toilet facilities, computers etc. In comparison to Government schools, the private schools perform well but some private schools have a high teacher student ratio of 1:75.
- The respondents from lower income groups felt that improvement in Government schools would encourage them to send their children to these schools as it will ease their expenditure on children's education. According to some respondents, the average annual fee for a student in 1st standard in a private school was about Rs. 8,000 which was felt to be rather high.
- The students would like to have overall mental, intellectual and physical development and better exposure. The students felt that schools in Thoothukudi should concentrate not only on academics but also on sports and other extra-curricular activities. Counselling and mentoring are needed for students in schools and colleges, so that they may become well rounded productive citizens.
- The students would like to see computer/internet facilities enhanced. They would like to have quality courses in software like SAP, CAD, etc. offered and reputed software training institution like NIIT set up in Thoothukudi, so that those students who wish to learn advanced software courses need not go to Tirunelveli or Chennai.
- Students felt the need for educational institutions to develop the students' soft skills as it was felt that soft skills are crucial for improving their opportunities for placement in good jobs. They would like organised classes, lectures, exposure visits to industries, etc. for this purpose.
- The students expressed a need for more number of seats/ colleges in Thoothukudi. At present, only 2 arts colleges for boys and 4 arts colleges for girls are in existence.
- The choices on educational courses should be increased. Courses in chemical engineering, printing and textile technology, marine engineering and logistics, should be offered due to the presence of a large number of chemical and shipping industries in and around Thoothukudi.

- Many felt that there should be a Government Engineering College set up in Thoothukudi
- The students felt that Thoothukudi should be developed such that it offers opportunities in Information Technology Industry. They would like to see better interface between the industry and job seekers, to improve the situation.
- Many respondents would like to see premier research centers, especially, in fisheries, set up in Thoothukudi. Some managers felt that reputed educational institutions on the lines of BITS, Pilani and research institutions like National Metallurgical Laboratory (NML), Jamshedpur should be established in Thoothukudi.

Entertainment/Sport

The stakeholders would like to see the entertainment choices offered by the town increased with more movie theatres, auditoriums, sports facilities, amusement parks, shopping malls, etc. being developed in Thoothukudi.

Environment

The stakeholders would like to see more environmental awareness created so that the city becomes green and pollution free. While power plants are welcome, they would like them to be set up with proper safeguards and only to the extent of the environmental carrying capacity of the town and the district. They would like more green spaces, parks and gardens so that the city grows as a sustainable and healthy city. Some suggestions were made: utilization of natural gas, bio-fuel, solar energy, etc. for energy development, rainwater harvesting for conservation of water, recycling of solid waste, more trees, etc.

Health

The respondents would like facilities improved in the government hospital and wanted high class state of the art hospitals like Apollo to come up in Thoothukudi so that high class specialist care would be available in Thoothukudi.

Housing

The stakeholders would like to see adequate availability of housing as it would make it easier for people to migrate to Thoothukudi. This problem can be eased by creating housing colonies by the side of Tuticorin-Madurai Road. Housing areas can also be developed in Maravanmadam. Planned township on the lines of SPIC, TAC and HWP could be developed. Satellite towns could be formed, especially near the airport.

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