Human Resource and Skill Requirement Study for 21 Coastal Districts of India

Prepared for:
Sagarmala, Ministry of Shipping and
National Skill Development Corporation

Tamil Nadu
Thiruvallur
Thoothukudi

Final Report

Contents

1. District Profile	3
1.1. Thiruvallur	3
1.1.1. Demographic Profile	3
1.1.2. Key Economic Drivers	9
1.1.3. Priority Sectors	9
1.1.4. About the Ports	10
1.1.5. Investments	11
1.1.6. Youth Aspiration	13
1.1.7. Training Infrastructure	18
1.2. Thoothukudi	19
1.2.1. Demographic Profile	19
1.2.2. Key Economic Drivers	26
1.2.3. Priority Sectors	26
1.2.4. About Port	27
1.2.5. Investments	27
1.2.6. Youth Aspiration	29
1.2.7. Training Infrastructure	34
2. Skill Gap Assessment, Job Roles and Emerging Job Roles	35
2.1. Thiruvallur	35
2.1.1. Incremental Demand for Skilled & Semi Skilled Manpower	35
2.1.2. Gap between Total Demand and Supply for Skilled workforce in Select Sectors	36
2.1.3. Job Roles High in Demand	37
2.2. Thoothukudi	41
2.2.1. Incremental Demand for Skilled & Semi Skilled Manpower	41
2.2.2. Gap between Total Demand and Supply for Skilled workforce in Select Sectors	42
2.2.3. Job Roles High in Demand	43
3. District Action Plan	46
3.1. Background	46
3.2. Objective of developing the plan	46
3.3. Methodology	46
3.4. Summary for Thiruvallur	47
3.5. Action Plan for Thiruvallur	48
3.7. Additional Training Courses	61

3.8. Summary for Thoothukudi 62
3.9. Action Plan for Thoothukudi 62
4. Consultations 74
4.1. State level consultations- Tamil Nadu 74
4.2. District level consultations- Thiruvallur 75
4.3. District level consultations- Thoothukudi 77

1. District Profile

1.1. Thiruvallur

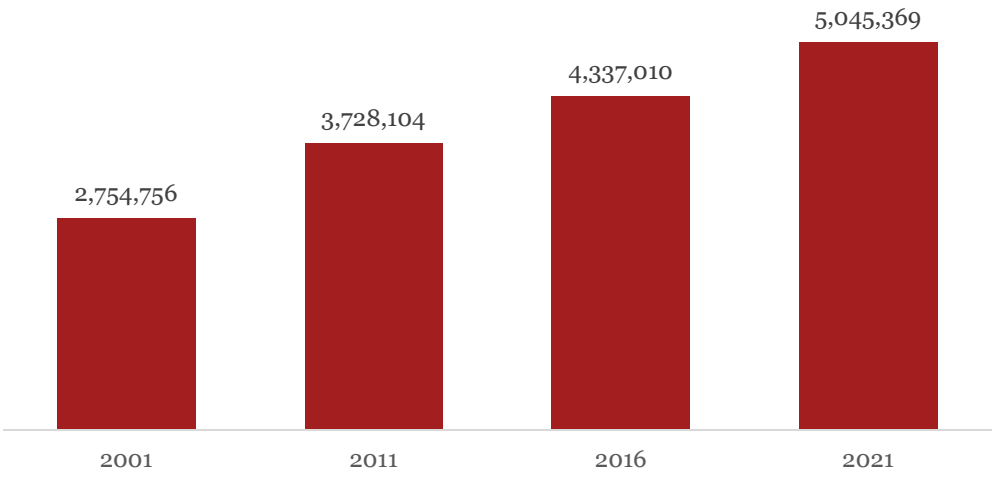
Thiruvallur is the northernmost district of the state. It neighbors Chennai (South) and Kanchipuram (Southwest) in Tamil Nadu, Chittoor (West) and Nellore (North) districts in Andhra Pradesh. The district largely lies within the borders of the Chennai Metropolitan area and is influenced by the city of Tirupati in Andhra Pradesh which results in interdependence on a daily basis. Thiruvallur houses one major port, Kamarajar Port and a private port and shipyard at Kaatupalli. The major exportable items produced in the district are Auto components, Engineering products, Leather, Garments and Rubber products[1]. Industry (34%) and Service sector (62%) have the largest share in the overall district economy.

1.1.1. Demographic Profile[2]

Indicator	Value
Total population	3,728,104
Decadal rate of growth of population (2001-11)	35.33%
Rural population	35%
Female	49.6%
SC population	22%
ST population	1.27%
Workforce participation	41%
Main Workers (As % of total population)	33%
Marginal (As % of total population)	8%
Non-workers (As % of total population)	59%
Number of people with vocational training in the age group of 15+[3]	55 per 1,000

Population trends[4]

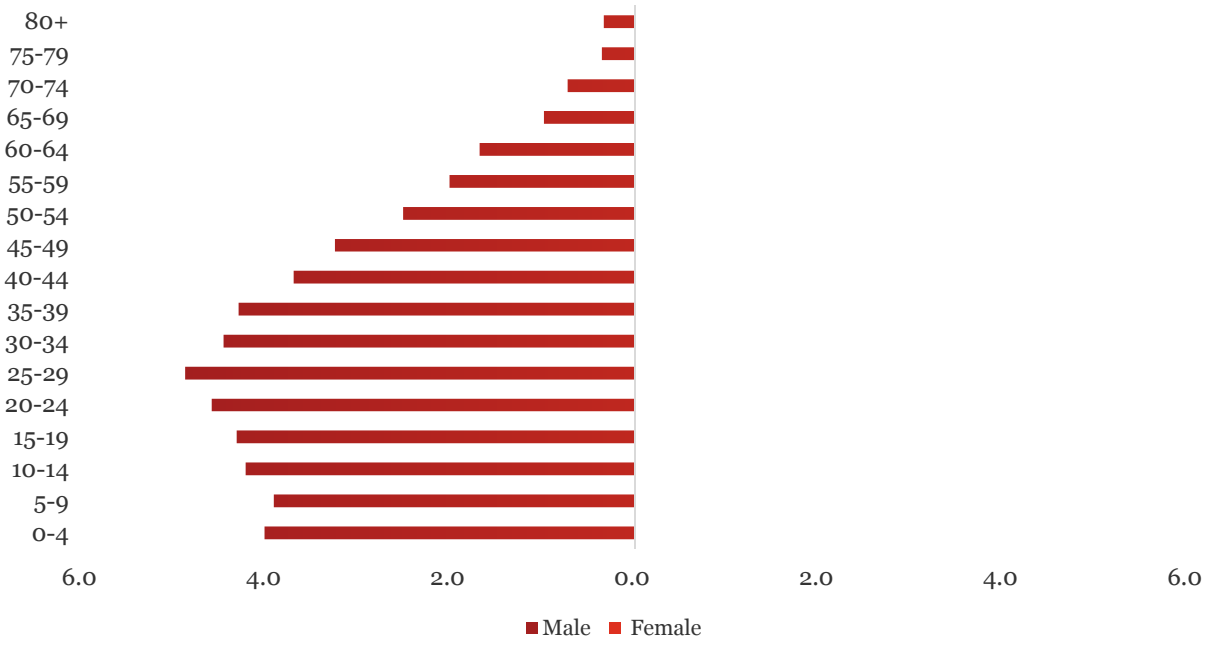
Figure 1: Population trend in Thiruvallur (2001-2021)



[1] Brief Industrial Profile of Thiruvallur District, MSME
[2] Census, 2011
[3] District Level Estimates for Tamil Nadu, Employment and Unemployment Survey, Labour Bureau2013-14
[4] Based on Census 2001 & 2011

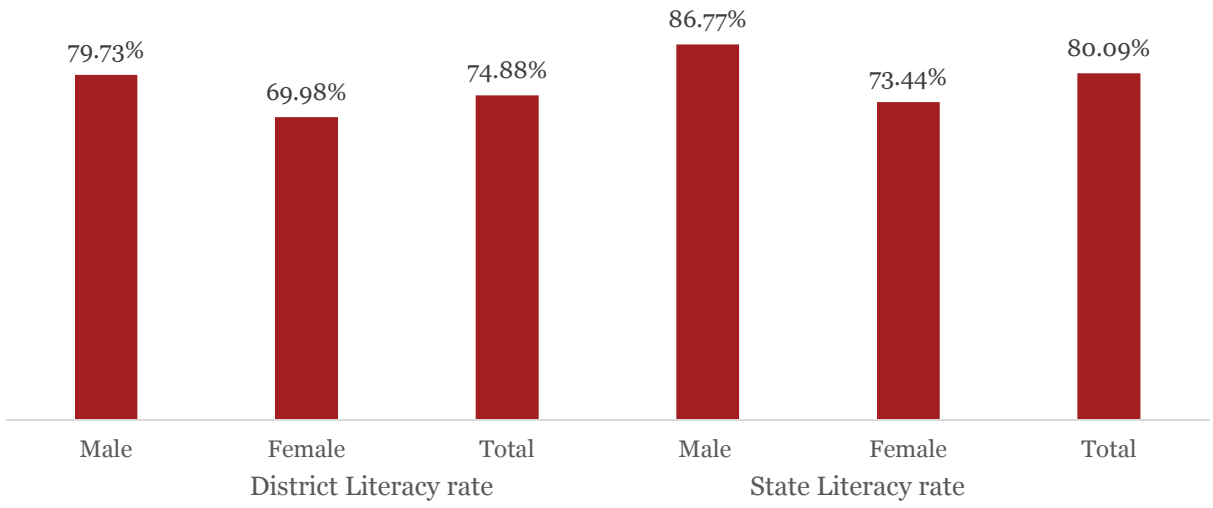
The demographic dividend bulge in Thiruvallur is shifting with youth in the employable age increasing. Estimating the population for the period 2001-11 (10 years), the population is estimated to be 43,37,010 and 50,45,369 in 2016 and 2021 respectively. The projected absolute growth in the population from 2016 to 2021 is 16.3% driven large by the urbanization in Chennai, Vellore and Chitoor Districts.

Figure 2: Population Pyramid Thiruvallur - 2011



Literacy rates

Figure 3: Thiruvallur vs Tamil Nadu literacy rates (2011)



Total literacy rate of Thiruvallur, as per the Census 2011, is approximately 74.88%, which is lower than the State's literacy rate of around 80.09%. However, the female literacy rate of Thiruvallur is 69.98% which is substantially lower than the male literacy rate of 79.73% in 2011.

Age specific population trends and education level for 2011[5]

As per the Census 2011, the population in the age-group of 15 to 24 years was 664,517 (17.8% of the overall population). The population in the age group of 15-59 years is estimated to be 2,995,770 and 3,553,051 in 2016 and 2021. The projected absolute growth in the population from 2016 to 2021 is 18.6%.

Figure 4: Growth trend of population in the age group 15-59 year in Thiruvallur (2001-2021)

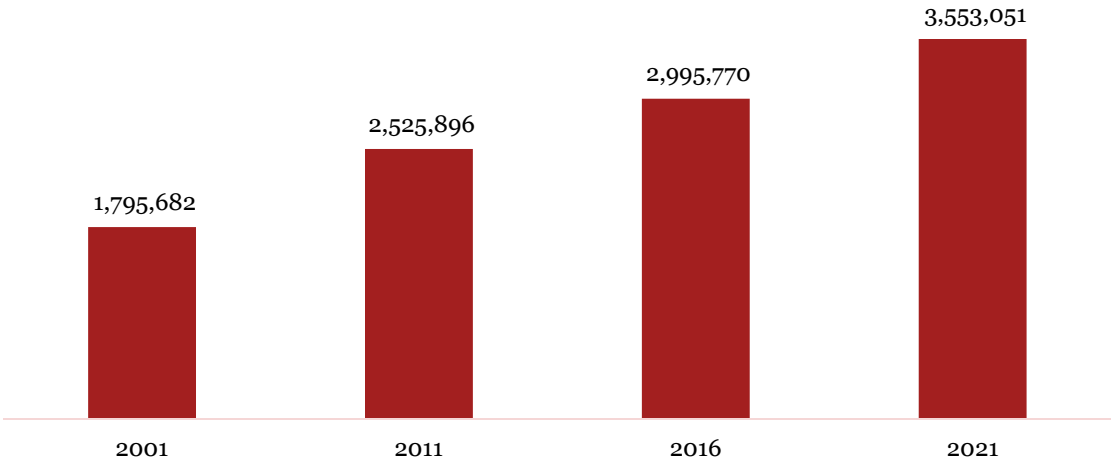


Figure 5: Age Specific population (15-59 years)

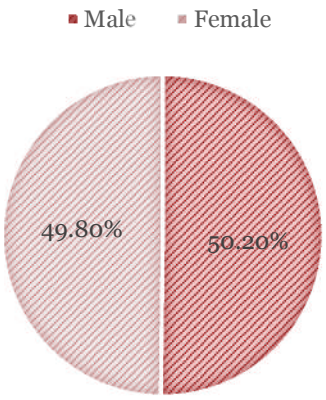
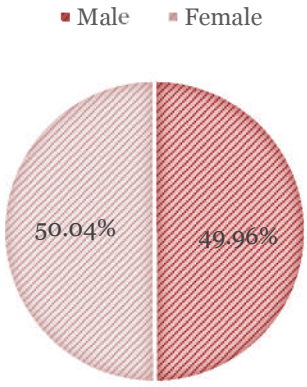


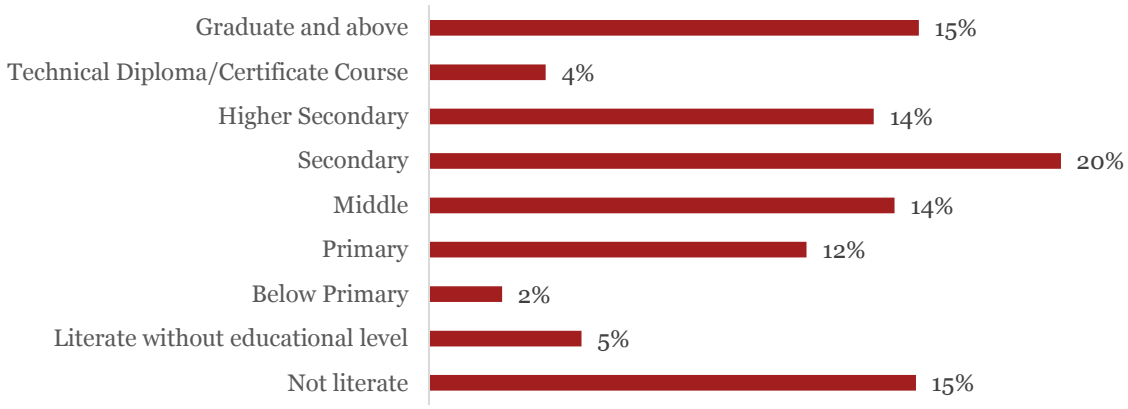
Figure 6: Age specific population (15- 24 years)



Both the age groups, 15-59 years and 15-24 years have almost equal representation of males and females with males accounting for 50.20% and 49.96% of the total population share in the 15-59 years and 15-24 years age group respectively. Females account for 49.80% and 50.04% of the total population share in the 15-59 years and 15-24 years age group respectively.

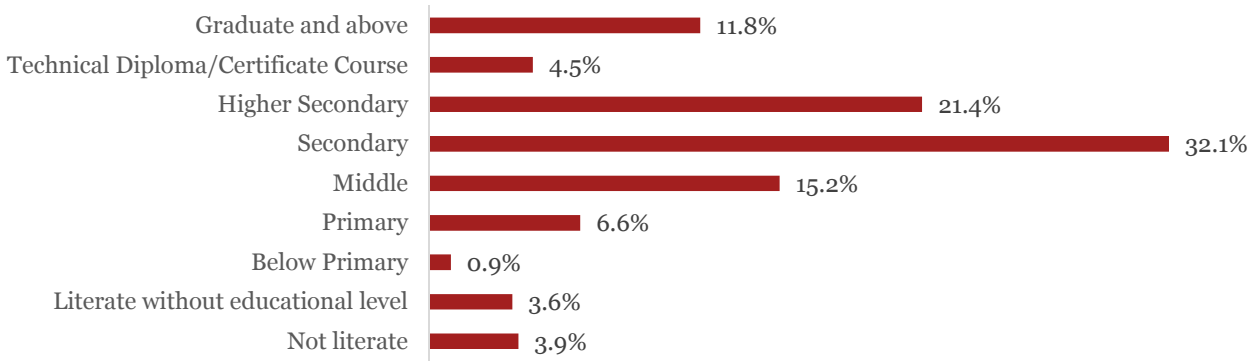
[5] Based on Census 2001 and 2011

Figure 7: Age specific education level in Thiruvallur (15-59 yr)



For the age category of 15-59 years, 15%of the population of Thiruvallur is illiterate. 5% is literate without any educational qualification, 2% have attained schooling till below primary level, 12% have done schooling till primary level and 14% have completed schooling till middle level. Roughly, 20% of the literate population has been educated till secondary level, whereas, around 14% of the literate population has been educated till higher secondary. Technical certificate/diploma course holders are in insignificant number in the district and 15% have at least completed graduation, indicating that a graduate/post-graduate degree is more sought after than a technical certificate/diploma.

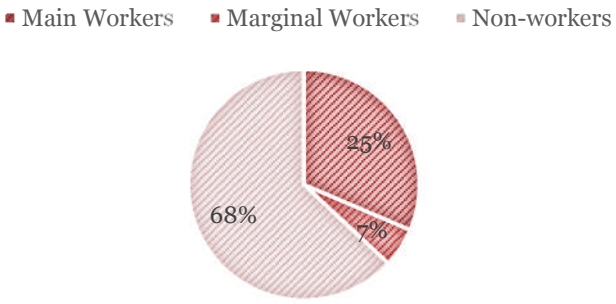
Figure 8: Age specific education level in Thiruvallur (15-24 years)



In the age group of 15-24 years, 3.9% of the population of Thiruvallur is not literate, 3.6% are literate without any educational qualification, ~1% have attended school till below primary level and ~7% have completed schooling only up to primary level. About 15.1% of the population in 15-24 years category has done schooling up to the middle level, whereas, around 32% of the same population segment has been educated till secondary. Only 4.5% of the population of this district has done a technical certificate/diploma course and 11.8% has at least completed graduation.

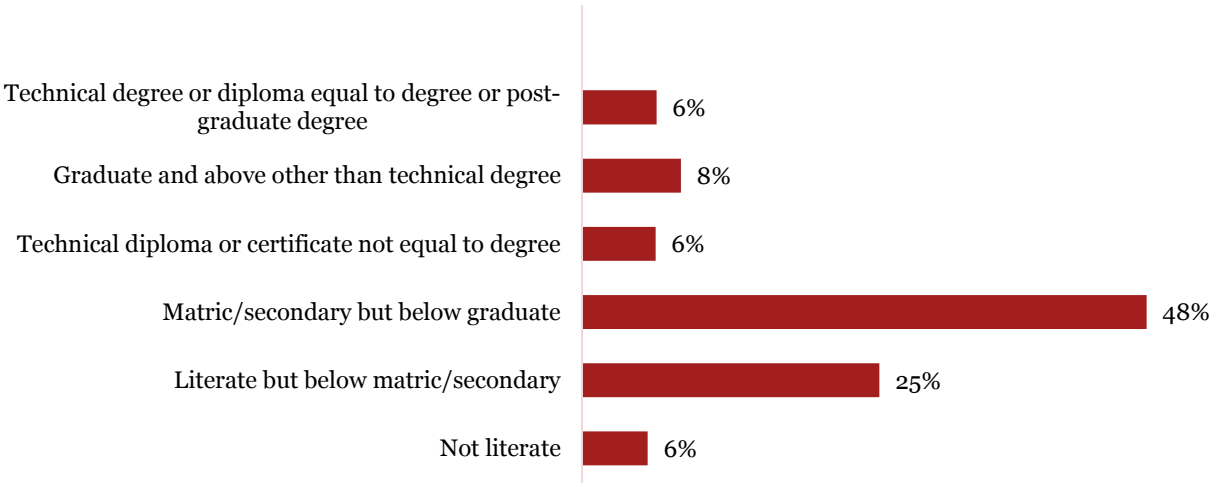
Age specific distribution of workers and educational level

Figure 9: Age specific distribution of workers in Thiruvallur (15-24 years)



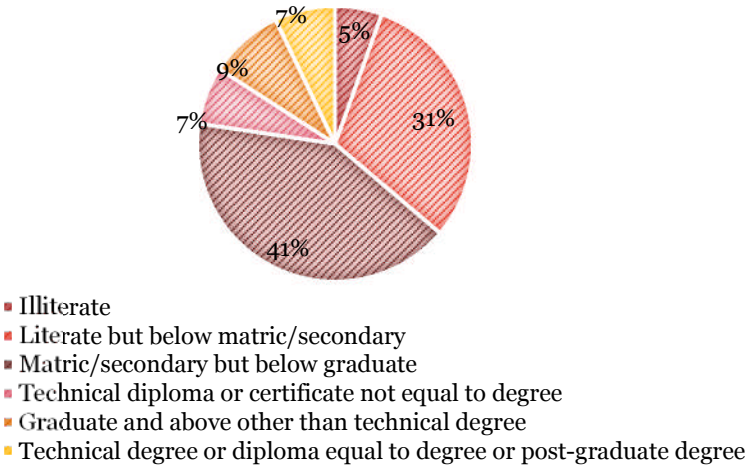
The total workforce participation rate for this district, according to census 2011, is 41.26% and 68% of the population in the age group of 15-24 years are reported as non-workers. 25% of the population are main-workers, whereas 7% are engaged in marginal work i.e. working for 3-6 months during the year.

Figure 10: Education level of marginal workers available for work in Thiruvallur (15-24 years)



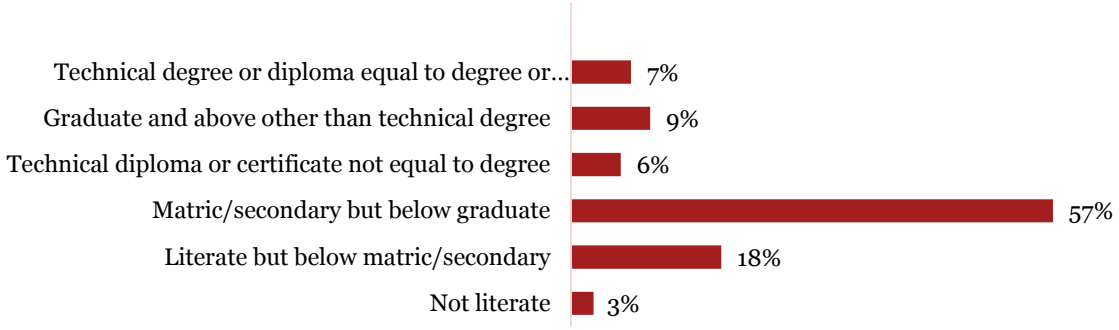
Amongst the 26,550 marginal workers in the age group of 15-24 years, 1,689 (6.36%) hold technical degree or a diploma equal to degree or post-graduate degree and 2,240 (8.44%) are graduates and above other than a technical degree. Further, 1,666 (6.27%) have a diploma or a certificate (not equal to degree), 12,750 (48.02%) are educated up to the matric/secondary level but below graduate and 6,715 (25.29%) are literate with an educational qualification of below matric/secondary level, and 1,490 (5.61%) marginal workers in this age group are not literates.

Figure 11: Education level of main workers available for work in Thiruvallur (15-24 years)



From Figures 10 and 11 given above, the proportion of main workers who are illiterate (in the age category 15-24 years) is slightly less than the proportion of marginal workers available for work and who are illiterate (*difference of 1% points)*. We also find that the proportion of main workers who are literate but below matric/secondary (*in the age category 15-24 years*) is slightly more than (*6 percentage difference point between the two*) the proportion of marginal workers who are available for work and are literate but below matric/secondary. The proportion of main workers who are matric/secondary level but below graduate (*in the age category 15-24 years*) is less than (*7 percentage difference point between the two*) the proportion of marginal workers who are available for work and are matric/secondary level but below graduate. Also, the proportion of main workers who are graduate and above other than technical degree (*in the age category 15-24 years*) is slightly less than (*1 percentage difference point between the two*) the proportion of marginal workers who are available for work and are graduate and above other than technical degree. The proportion of main workers who have attained a technical degree or diploma equal to degree or post-graduate degree (*in the age category 15-24 years*) is the same.

Figure 12: Education level of non-workers available for work in Thiruvallur (15-24 yr)

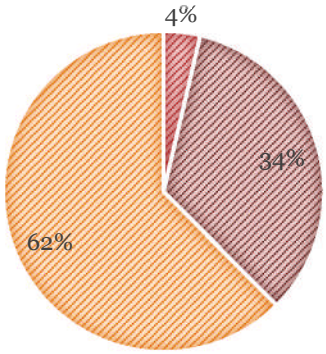


Amongst the 106,907 non-workers in the age group of 15-24 years, 7,563 (7.07%) hold a technical degree or a diploma equal to degree or post graduate degree and 10,002 (9.36%) have a graduate and above other than a technical degree. Over 6,243 (5.84%) have a diploma or a certificate (not equal to degree), 61,256 (57.30%) are educated up to the matric/secondary level but below graduate and 19,046 (17.82%) are literate but below matric/secondary level. With respect to the marginal workers, about 2,797 (2.62%) of them in the age-group of 15-24 years are illiterates.

1.1.2. Key Economic Drivers

According to DES Tamil Nadu, Thiruvallur, the Gross Domestic Product of the district (at constant prices- 2004-05) was INR 28,03,894 crore in 2012-13 and it has steadily grown at a CAGR of 12.6% over the period 2004-05 to 2012-13. The sectoral break up suggests that services sector contribution to district GDP is more than half (62%) followed by industry sector (34%). Further disaggregation suggests that manufacturing sector has a share of 25% and real estate sector has a share of 24% in the district GDP. Other sectors driving the district economy are trade, hotels and restaurants (13%) and construction sector (8%). The real estate sector has witnessed an impressive growth of 26% over the years 2004-12.

Figure 13: Sectoral breakup of Thiruvallur district GDP at constant prices (2004-05)



The key economic drivers of the district are illustrated below:

Port, Maritime and Logistics	• Captive Oil-Jetty by IOCL • RO-RO cum General Cargo Berth • Development of Marine Liquid Terminal –II • Additional Coal Berth of TNEB of 9 MTPA on captive basis
Industrial Developmen	• Heavy Engineering and Plastic Park • Entrepreneurship Development Centre for SMEs • Chennai –Vizag Industrial Corridor • Chennai- Bangalore Industrial Corridor
Infrastructure Development	• Development of Greenfield Airport in Sriperumbudur • Northern port access Road from port to Thatchur, Outer Ring Road, • New Water Reservoir • 50 MLD DSP at Alanthalai
Urbanization	• Chennai Metro Rail to Thoruvottiyur • Heritage Location and Tourism Development

1.1.3. Priority Sectors

In Thiruvallur, the priority sectors that have been identified are **Port and Maritime sector**: **logistics, fisheries, tourism and construction**. Other sectors that have been identified as priority sectors from the point of view of their contribution to district GDP are **manufacturing and real estate and construction and Banking.**

1.1.4. About the Ports

Ports & Maritime			
Major Ports: 1	**Minor Ports:** 1		**Shipyards: 1**
Details			
Kamarajar Port Limited			
Operations:	Land Lord Port model (PPP)	*Capacity*	34 mn tonnes P.A
Key Cargo	Thermal Coal (80%), Petroleum Oil and Lubricants (12%)	*No of berths:*	5
		Draft	13.5M
Description and key Trend	It is the only corporatized major port in India. Initially developed with the only aim of handling thermal coal to divert coal traffic from Chennai Port Trust (ChPT), the Kamarajar Port Limited has created facilities for handling liquid bulk, iron ore, automobiles (Ro-Ro for Ford, Nissan, etc.) and general cargo. It is working completely on the Land Lord Port model The access roads to KPL and ChPT are common via the inner ring road which has affected the traffic and performance of the port.		
Terminal Operations			
	Ennore Tank Terminal Private Limited	Chettinad International Coal Terminal	General Cargo Terminal – Stevedores including JMB, SICAL, Hindustan Shipping, etc.
Annual Capacity	3 mn tonnes PA	8 mn tonnes PA	1 mn tonnes PA
Type of Cargo handled	Petroleum Oil and Lubricants (POL), Chemicals	Coal	Automobiles
High Demand Job Roles	Rail Engine Operator, Rail Mounted Quay Crane Operator, Rail Mounted Gantry Crane Operator, Forklift Operator, Reach Stacker Operator, Crane Mechanic, and Surveyors.	Railway Engine Operator, Rail Mounted Quay Crane Operator, Rail Mounted Gantry Crane Operator, Forklift Operator, Surveyors, Conveyor Belt Mechanic.	Car Drivers (Ro-Ro)
Kattupalli Port and Shipyard.			
Operations:	Private (Adani)	*Capacity*	1.2 mn tonnes P.A
Key Cargo	Container	*No of berths:*	2
		Draft	14M
Description and key Trend	Kattupalli International Container Terminal (KICT) is located north of Ennore Port near Kattupalli village in Thiruvallur district near Chennai, built as a joint venture between L&T and TIDCO alongside a shipbuilding yard. Currently, the operations have been taken over by Adani Port. L&T Shipbuilding continues to operate the shipyard, largely focussed on manufacturing for the defense sector.		

1.1.5. Investments

The table below summarizes the investments are that are in the pipeline in next few years:

Table 1: Proposed Key Investments for the year 2016-22 in Thiruvallur

Sector	Proposed Investment (INR Cr)	Number of Projects	Expected Employment	Key Players
Port & Maritime	7,963	7	Over 6,500[6] persons	Kamarajar Port Limited, IOCL
Infrastructure	17,280	5	-	Tamil Nadu State Highways Department, TNRDC, PWD
Manufacturing	1,425	4	-	TIDCO

In the port and maritime sector, several upgradations of the KPL port have been identified as key focus areas for future investments. Details of proposed investments in this sector are given below:

Table 2: Details of Investments in Port and Maritime sector in Thiruvallur

Project	Proposed Investment (INR cr)	Expected Employment	Key Players
Construction of RoRo Cum General Cargo Berth 2	320	1,400 persons	Kamarajar Port Limited
Captive Oil Jetty by IOCL	480	1,400 persons	Kamarajar Port Limited, IOCL
Development of Marine Liquid Terminal-II	392	1,400 persons	Kamarajar Port Limited
(LNG) Import Terminal of 5 MTPA on Captive basis	5,151	Information Not available	Kamarajar Port Limited
Container Terminal of 1.40million TEU on DBFOT basis.	1,270	Information Not available	Kamarajar Port Limited
Multipurpose Cargo Terminal on DBFOT basis	151	Information Not available	Kamarajar Port Limited
Additional Coal Berth for TNEB of 9 MTPA on Captive basis	199	Information Not available	Kamarajar Port Limited, TNEB

In Thiruvallur, with the MSME sectors, manufacturing, tourism, logistics, food processing are upcoming areas with proposed investments to the tune of INR 1,069 Cr and is expected to create employment for approximately 3,000 individuals. The details of proposed investments across these sectors are given below.

[6] Based on expected increase in capacity and historical utilization.

Figure 14: Details of proposed investments across different sectors, DIC Thiruvallur

1.1.6. Youth Aspiration

The key findings of the youth aspiration survey include extent of youths' exposure to vocational training and educational aspiration, job aspirations, training aspirations and aspiration for self-employment.

Respondent Profile

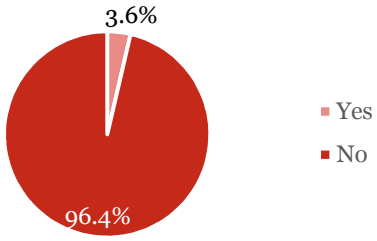
The table below provides an overview of the respondent profile:

Profile	Details
Total Sample Size	384
Gender Profile	Male – 65.4% Female -34.6%
Age Group	15-24 years
Education Level (top 3)	Secondary schooling(Class 9 to 10)- 24.9% Senior Secondary Schooling (Class 9 to 10)- 21.9% Higher secondary schooling with science (Class 11 to 12)- 17.3%
APL/BPL/AAY/Don't know	APL -1.8 % BPL – 97.1 % Don't know/Can't Say – 1.0 %
Occupational Profile (top 3)	Unemployed (45.6%), Student (24.7%), Salary from employment (12.8%)

Exposure to Vocational Training and Educational Aspiration

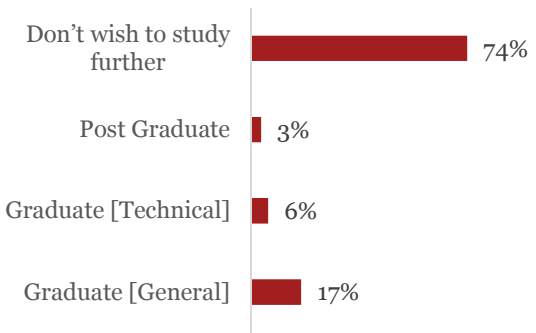
Regarding the exposure to the vocational training, most students reported that they had not undergone any vocational training course. Overall, ~96% of the respondents had not enrolled in vocational training course (Figure 15).

Figure 15: Respondents who completed vocational training course - Thiruvallur



Respondents were asked about the level of education they wished to attain. More than two-thirds of the respondents (74%) didn't aspire for further education. The desire to attain technical education is relatively low with only 6% aspiring for graduation in technical field as against preference to general degrees (17%) (Figure 16).

Figure 16: Desired level of education - Thiruvallur



Further, of the total respondents who underwent vocational training (which is 3%), most were from NSDC TSPs (42.9%) and ITIs (28.6%). Figure 17 exhibits the percentage of respondents who completed different types of courses as part of their vocational training.

Figure 17: Respondents who completed courses in vocational training - Thiruvallur

Job Aspiration

One of the important findings of the survey has been the high preference for wage employment over self-employment among the youth of the district. All of the respondents reported to have preference for wage employment over self-employment (Figure 18: Respondents aspiring for wage and self-employment).

The respondents were further asked to identify the factors important for securing employment in the area of their interest for which 63.6% of the respondents identified interest in the area as the most important factor for securing employment followed by industry specific skills (47.5%) and job opportunities (34.1%) (Figure 19)

Figure 18: Respondents aspiring for wage and self-employment - Thiruvallur

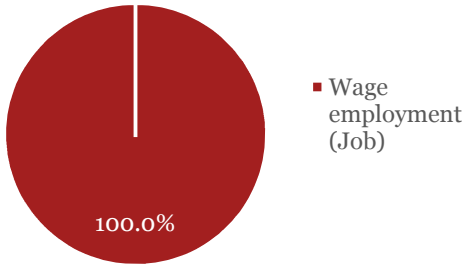


Figure 19: Factors important for securing employment in area of interest - Thiruvallur

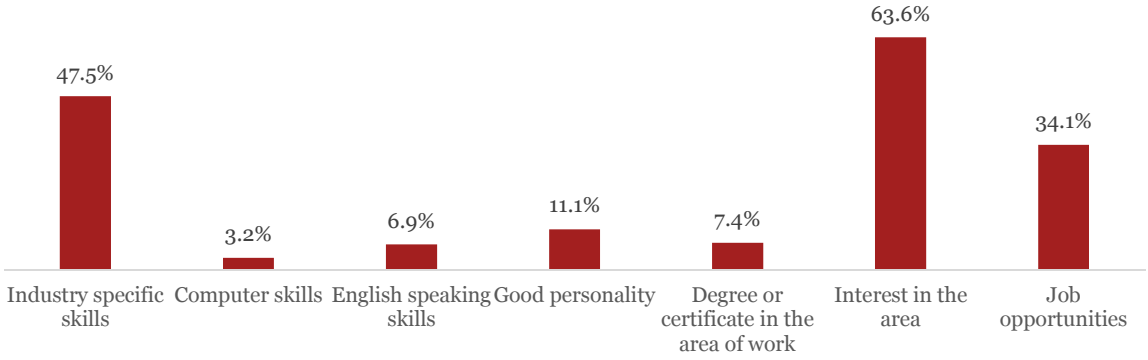
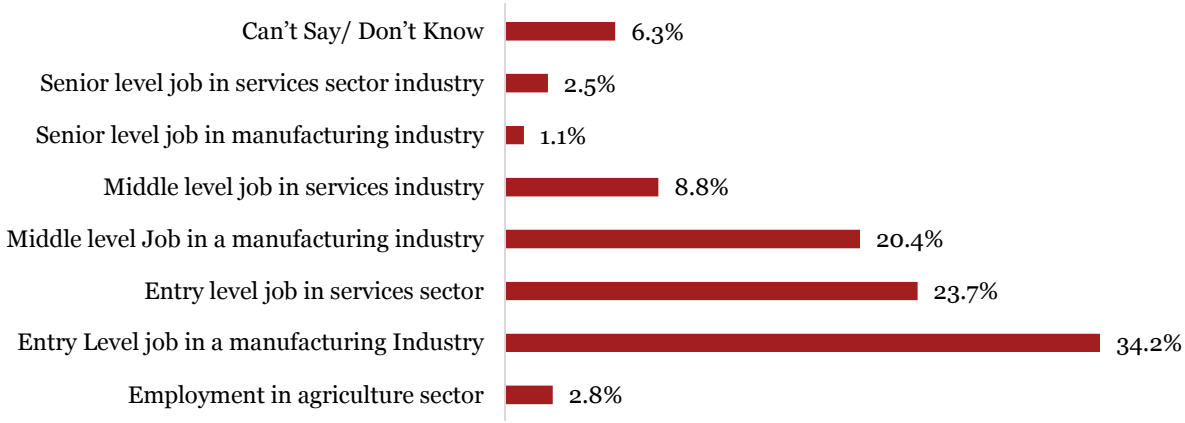
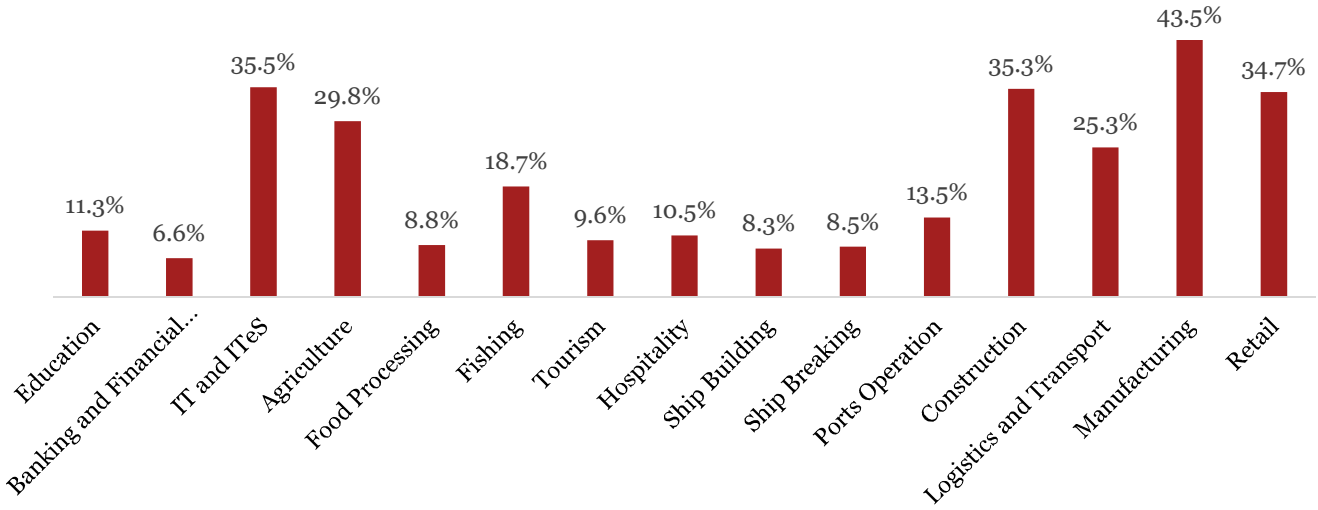


Figure 20: Desired job profile after completion of education/training- Thiruvallur



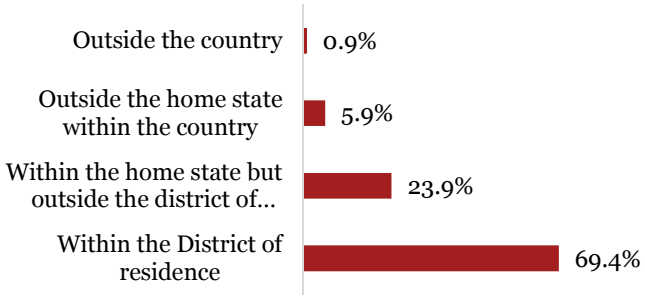
Regarding job aspiration of the respondents after completion of current education or training, it can be observed that there is a demand for manufacturing sector with 34% aspiring for entry level jobs and 20% aspiring for middle level jobs. This is followed by services industry (24%) and middle level jobs in services sector (9%). Only about 3% want to enter the Agriculture sector (Figure 20).

Figure 21: Sectors in which respondents' foresee getting a desired job - Thiruvallur



Further, Manufacturing (43.5%), IT/ITES (35.5%), Construction (35%), Retail (34.7%) and Agriculture (30%) have been identified as sectors in which the respondents feel that they are mostly likely to get a job which is in alignment with their aspiration for a job in the manufacturing sector space. The details of other sectors are mentioned in Figure 21.

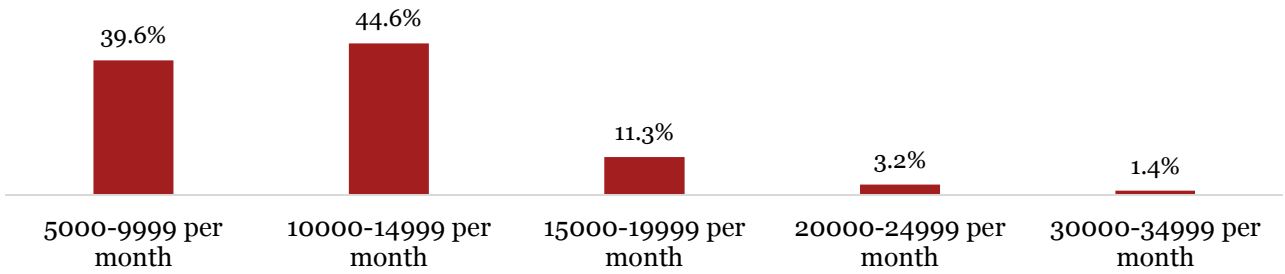
Figure 22: Preferred work location of candidates - Thiruvallur



Out of total respondents, 93% preferred to work inside Tamil Nadu. However, more than half of the of the respondents (69.4%) preferred to work in the same district and 24% expressed willingness to migrate to other districts in the same state suggesting some flexibility among the youth of the district (Figure 22).

Maximum respondents (44.6%) have monthly salary expectation in the range of INR 10,000-15,000. While 39.6% of respondents have a salary expectation in the range of INR 5,000-10,000 per month (Figure 23).

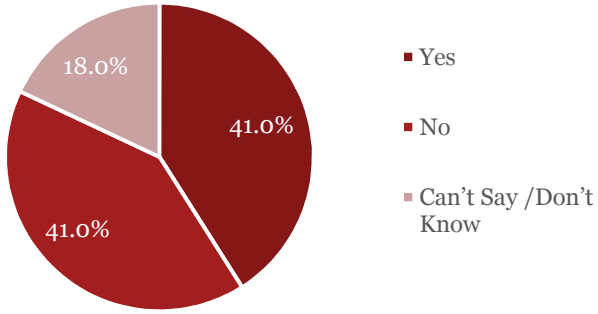
Figure 23: Monthly salary expectation of respondents - Thiruvallur



Training Aspiration

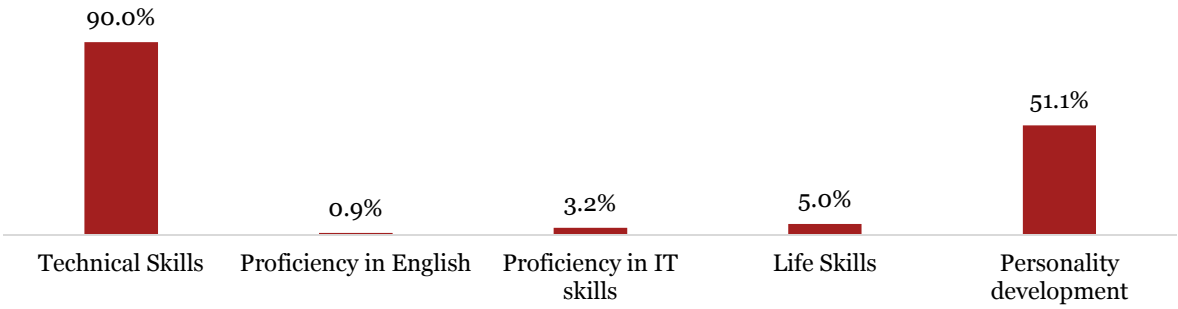
Regarding willingness of the respondents to participate in the training (skilling) programme in next (immediate) one year, more than two thirds expressed interest (Figure 24)

Figure 24: Willingness to participate in trainings - Thiruvallur



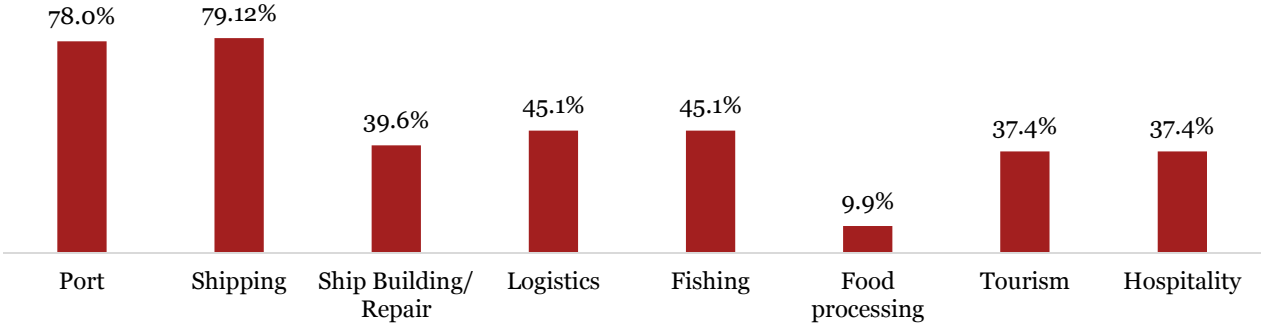
Further, when enquired about what should be the key focus areas of skill training, 90% of respondents reported that emphasis must be laid on technical skills followed by personality development (51%) and life skills (5%) (Figure 25).

Figure 25: Focus area on skills training - Thiruvallur



Overall, there is high acceptability for training in port (78%) and shipping (80%), followed by logistics (45.1%) and fishing related activities (45.1%) and hospitality (37.4%) which in turn highlights the demand for the core sectors of this study (Figure 26).

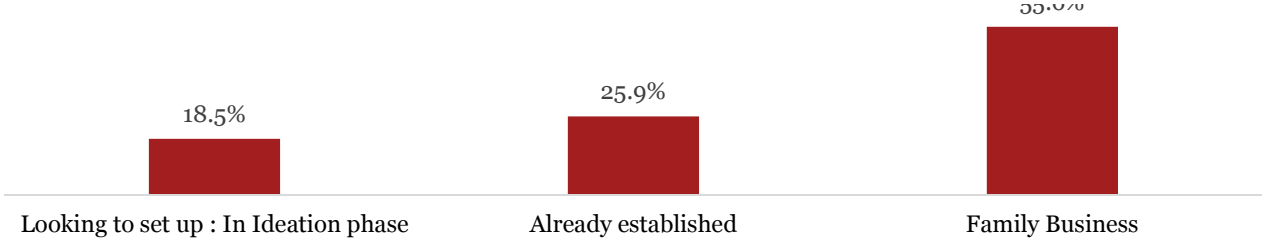
Figure 26: Willingness of respondents to participate in trainings of different sectors - Thiruvallur



Self-Employment

Only 27 respondents of the sample are involved in entrepreneurial activities which is merely 7% of the sample.

Figure 27: Current status of entrepreneurial venture- Thiruvallur



Regarding current status of the Entrepreneurial Venture of the respondents who aspired for self-employment, 55.6% were in family business and 26% had already established ventures (Figure 27**Error! Reference source not found.**).

Further, 55.6% of the respondents expressed a desire to undergo a training programme for enhancing their entrepreneurial skills (Figure 28).

Food Processing (50%), tour operations (30%) and trade (20%) are the only sectors in which the respondents aspired to set up ventures. IT/ITEs services, retail and hospitality have found no takers as most preferred sectors for setting up own enterprise (Figure 29).

Figure 28: Interested in skill development for enhancing entrepreneurial skills- Thiruvallur

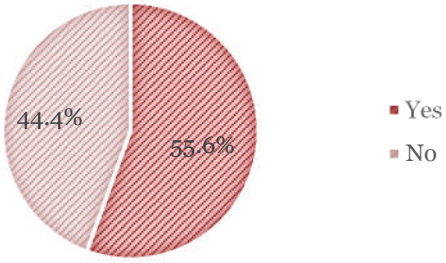
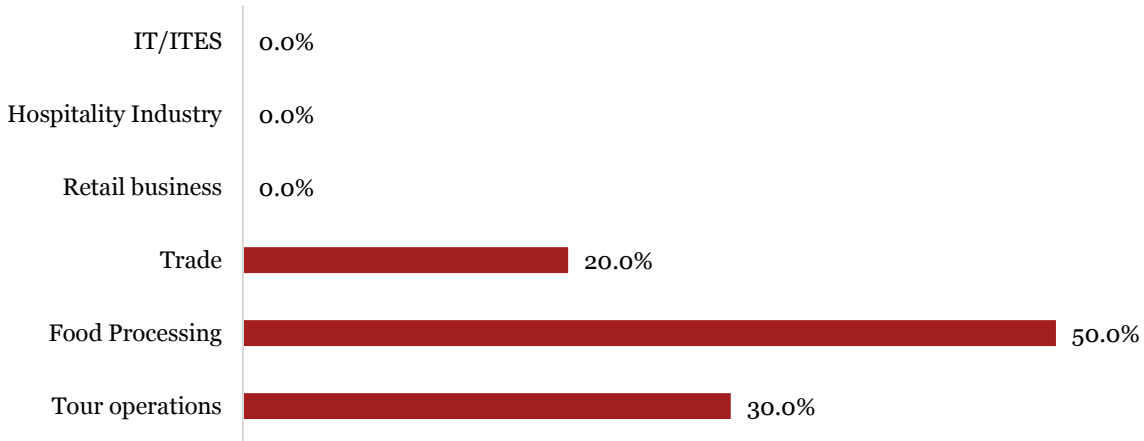


Figure 29: Sectors for establishing enterprise - Thiruvallur



1.1.7. Training Infrastructure

Type of training infrastructure	Total number of institutions	No of trades	Top 5 trades based on enrolment and seat capacity
ITI[7]	20	27	Electrician, Fitter, MMV. Draughtsman Civil, Welder
Polytechnic	23	16	Civil Engineering, Electrical And Electronics Engineering, Mechanical Engineering. Civil Engineering, Electronics & Communication Engg.
PMKK Training Centre	1	5	Field Technician – Networking and Storage, Field Technician – Computing and Peripherals, Telecom -In-store promoter, Accounts Executive - Accounts Payable and Receivable, Retail Sales Associate.
PMKVY	3	15	Sewing Machine Operator, Retail Sales Associate, Accounts Executive - Accounts Payable and Receivable, Telecom -In-store promoter, Home Health Aide.
DDU GKY	Not available	Not available	Not available
Other State Govt. skill centres			
TNSDC	10	29	4 Wheeler Service Technician, Beautician, Basic Shrimp Culture Techniques, Stitchers (Leather)

The Training infrastructure in the district is dominated by the ITIs and Polytechnics. However, the trades are largely focussed on technical and engineering trades.

- ITIs – There are 20 ITIs providing training in 27 different trades. The Ambattur ITI is one of the largest in the State and is the only one to provide certified training for land surveyors. However, according to Dept. of Employment and Training data, only 55% the total capacity is sactioned for conducting trainings. The actual occupation of seats is around 40% in total capacity.

- Polytechinics – Core engineering sectors like Civil, Electrical & Electronics, Electronics & Communication and Mechanical remain the most dominant trades, however, other trades like Hotel Management, Mechatronics, Production Technology, etc. are also gaining traction. Most of the students prefer to move to full time engineering courses post diploma.

- PMKVY & PMKK – The Trades are focussed on the Apparel, Retail, Trade, Telecom sectors with a santcioned strength of around 1090 in the next 4 years.

- TNSDC – Through various institutions TNSDC has santioned courses in 29 trades with a capacity of almost 900. However, the duration and levelof training vary widely and would require standardisation.

[7] Some of the ITIs also undertake

1.2. Thoothukudi

Thoothukudi, colloquially known as "Pearl City" for the pearl fishing activity, has been a major centre for ports, maritime and fisheries historically. The major exportable items produced in the district are chemicals, steel, garments and processed food[8]. Industry (25%) and Service sector (65%) have the largest share in the overall district economy. Thoothukudi houses one major port, the V.O. Chidambaranar Port Trust (VOCPT). It was the home port of the first modern indigenous shipping services company, the Swadeshi Steam Navigation Company, started by V.O. Chidambaranar.

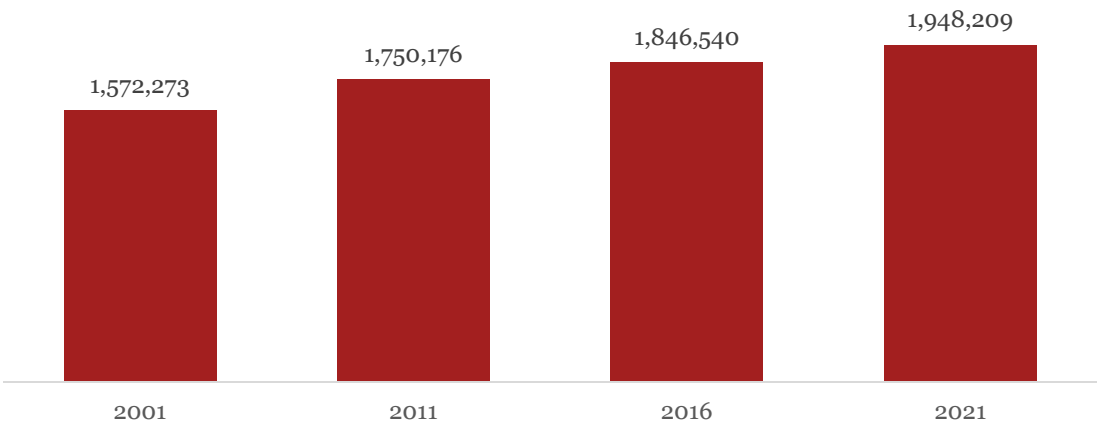
1.2.1. Demographic Profile[9]

Indicator	Value
Total population	1,750,176
Decadal rate of growth of population (2001-11)	10%
Rural population	49.85%
Female	50.5%
SC population	20%
ST population	0.28%
Workforce participation	43%
Main Workers (As % of total population)	38%
Marginal (As % of total population)	5%
Non-workers (As % of total population)	57%
*Number of people with vocational training in the age group of 15+[10]	25 per 1,000

Population trends[11]

Based on the population progression dynamics over the period 2001-11 (10 years), population is predicted to be 1,846,540 and 1,948,209 during 2016 and 2021 respectively. The projected absolute growth in the population from 2016 to 2021 is 5.5%.

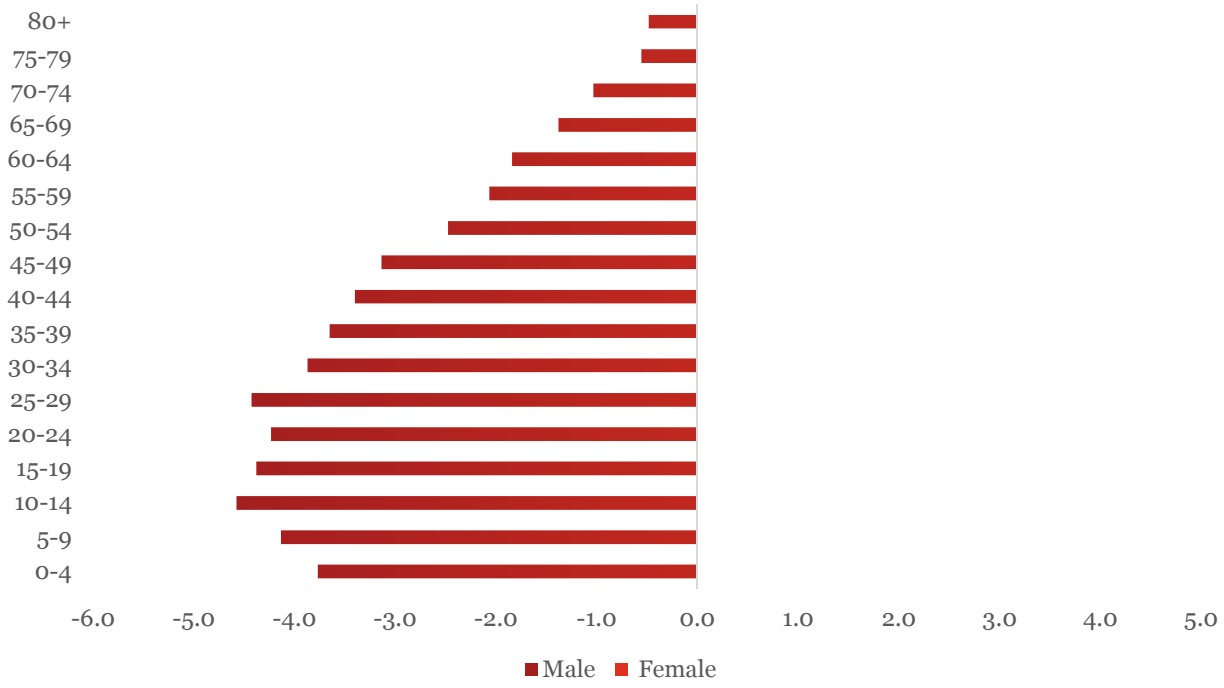
Figure 30: Population Trend in Thoothukudi (2001-2021)



The demographic dividend bulge in Thoothukudi will remain intact over the next decade i.e. 10 years.

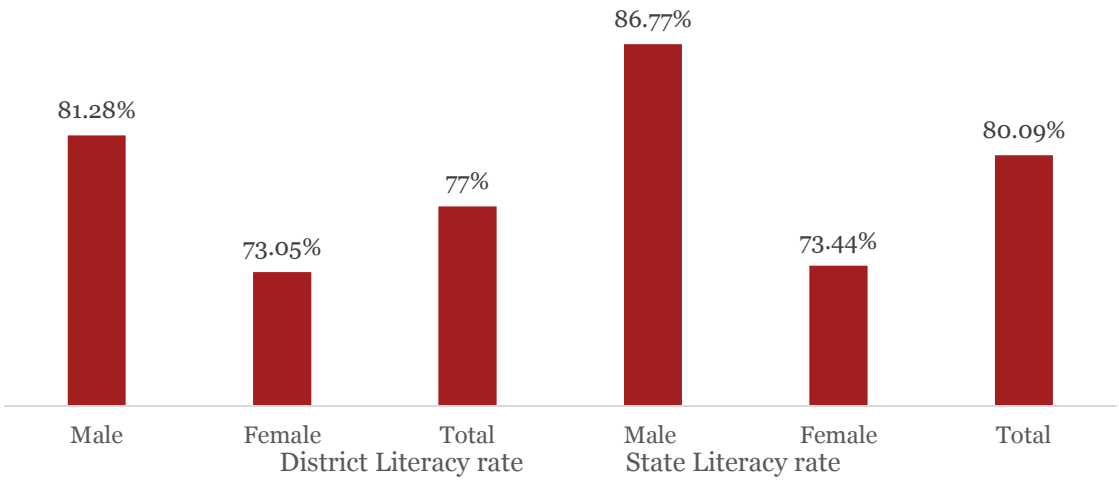
[8]Brief Industrial Profile of Thoothukudi District, MSME
[9]Census, 2011
[10]District Level Estimates for Tamil Nadu, Employment and Unemployment Survey, Labour Bureau2013-14
[11] Based on Census 2001, 2011.

Figure 31 Population Pyramid Thoothukudi- 2011



Literacy rates[12]

Figure 32: Thoothukudi vs Tamil Nadu literacy rates (2011)



Total literacy rate of Thoothukudi, as per the Census 2011, is approximately 77%, which is lower than the State's literacy rate of around 80.09%. Also, the female literacy rate of Thoothukudi is 73.05% which is quite lower than the male literacy rate of 81.28% but only slightly lower than the state female literacy rate of 73.44% in 2011.

[12] Census , 2011

Age specific population trends and education level for 2011[13]

As per the Census 2011, the population in the age-group of 15 to 24 years was 3,03,269 (*17.33% of the overall population*). The population in the age group of 15-59 years is estimated to be about 11,99,432 and 12,83,581 in 2016 and 2021, respectively. The projected absolute growth in the population from 2016 to 2021 is 7%.

Figure 33: Growth trend of population in the age group 15-59 years in Thoothukudi (2001-2021)

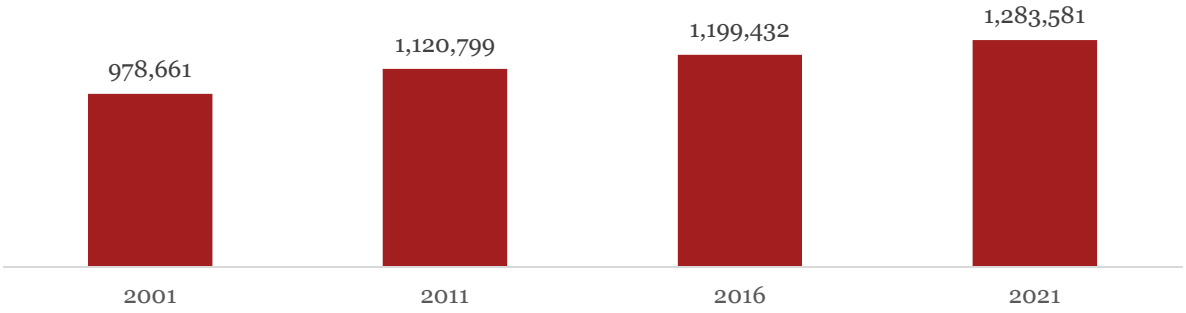


Figure 34: Age specific population of Thootukudi (15-24 years)

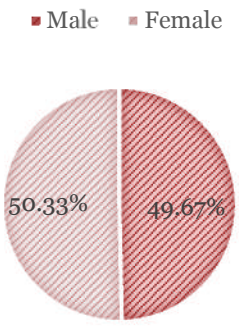
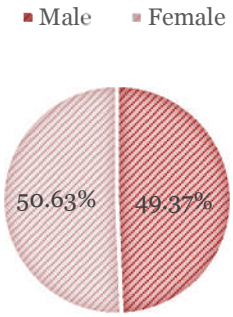


Figure 35: Age specific population of Thootukudi (15-59 years)

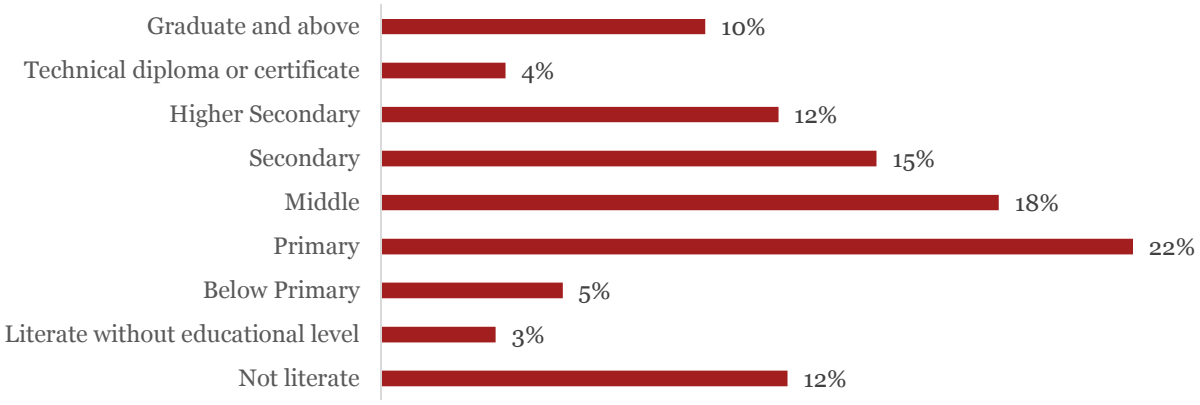


Both the age groups, 15-59 years and 15-24 years have almost equal representation of males and females with males accounting for 49.37% and 49.67% of the total population share in the 15-59 years and 15-24 years age group respectively. Females account for 50.63% and 50.33% of the total population share in the 15-59 years and 15-24 years age group respectively.

It is worthy to note that females outnumber males marginally in both the age categories (15-59 years) and (15-24 years). However, in the smaller (15-24 years) category, the share of women is lower than that of women in the larger category (15-59).

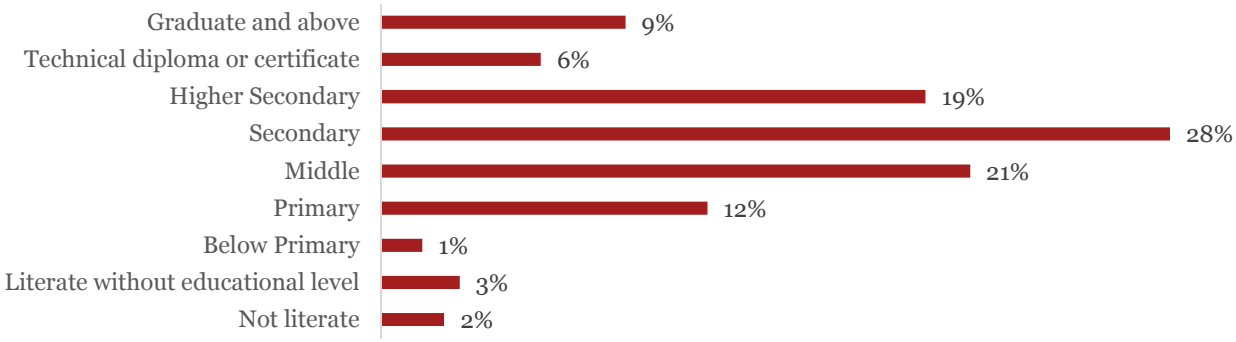
[13] Based on Census 2001 and 2011

Figure 36: Age specific education level in Thoothukudi (15-59 yr)



From the Census 2011, we understand that for the age category of 15-59 years, literacy in the working age group is 88 %. Graduates and Technical Diploma holders make only 14 % of the population. Taken together with higher secondary (12%) education only 27% of the population is educated with secondary or higher education. Moreover, 27% of the population is educated till primary and below level; and 3% is literate without any education level. The share of under educated workforce will prove to be a challenge as the availability of sufficiently educated workforce is small.

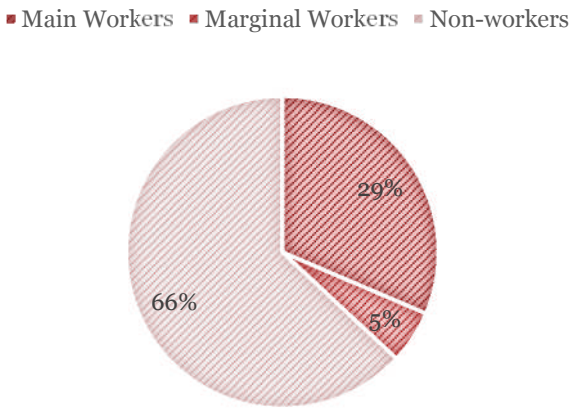
Figure 37: Age specific education level in Thoothukudi (15-24 yr)



For the age category of 15-24 years, 2% of the population of Thoothukudi is not literate, 3% are literate without any educational qualification, 1% have attended school till below primary level and 12% have completed schooling only up to primary level. Roughly, 21% of the population in 15-24 years category has done schooling up to the middle level, whereas, around 28% of the population in 15-24 years category has been educated till secondary. 6% of the population of this district has done a certificate/diploma course and 9% have at least completed graduation.

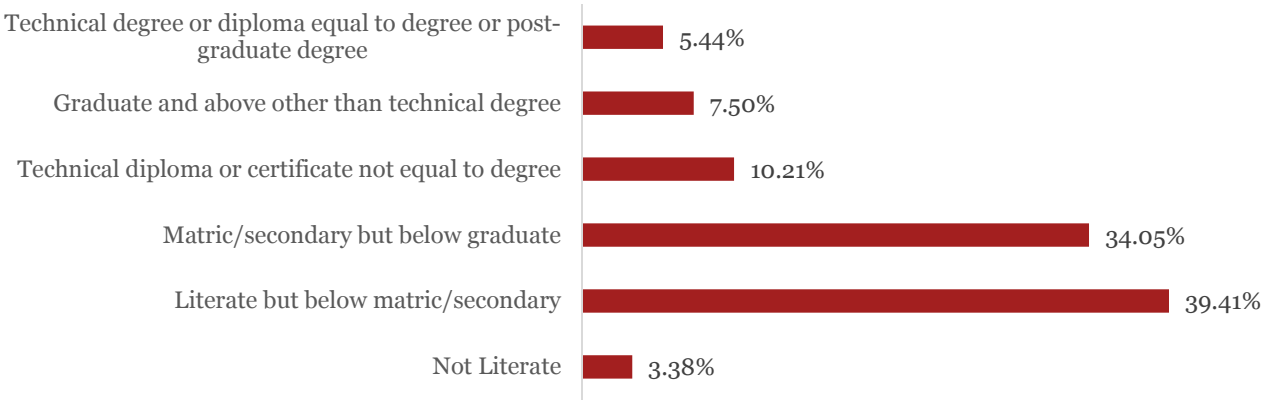
Age specific distribution of workers and educational level[14]

Figure 38: Age specific distribution of workers in Thoothukudi (15-24 yr)



The total workforce participation rate for this district, according to census 2011, is 42.74% and 66% of the population in the age group of 15-24 years are reported as non-workers. 29% of the population are main-workers, whereas 5% are engaged in marginal work i.e. working for 3-6 months during the year.

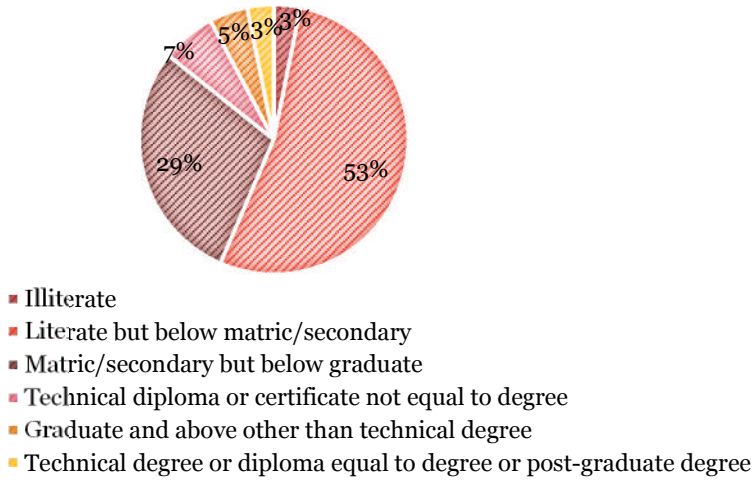
Figure 39: Education level of marginal workers available for work in Thoothukudi (15-24 year)



Amongst the 7,538 marginal workers in the age group of 15-24 years, 410 (5.44%) hold technical degree or a diploma equal to degree or post-graduate degree and 565 (7.50%) are graduate and above other than a technical degree. 770 (10.21%) have a diploma or a certificate (not equal to degree). 2567 (34.05%) are educated up to the matric/secondary level but below graduate and 2971 (39.41%) are literate with an educational qualification of below matric/secondary level. 255 (3.38%) marginal workers in this age group are not literate.

[14] Census, 2011

Figure 40: Education level of main workers (15-59 years)



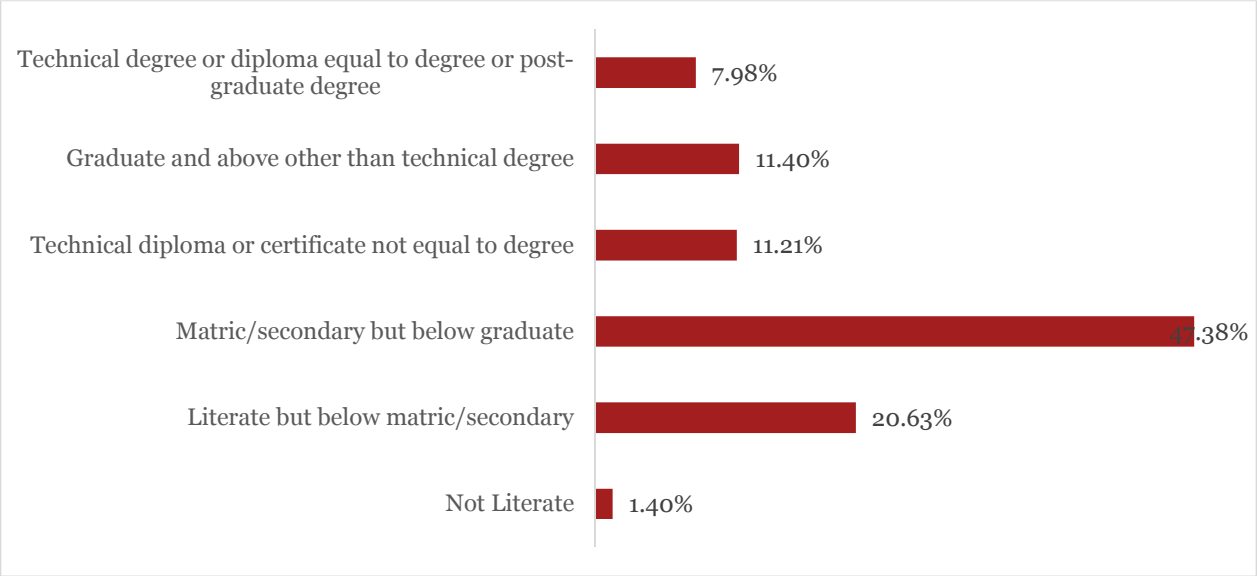
The proportion of main workers who are illiterate (*in the age category 15-24 years*) is the same as the proportion of marginal workers available for work and who are illiterate. We also find that the proportion of main workers who are literate but below matric/secondary (*in the age category 15-24 years*) is significantly more than (*14 percentage difference point between the two*) the proportion of marginal workers who are available for work and are literate but below matric/secondary.

The proportion of main workers who are matric/secondary level but below graduate (*in the age category 15-24 years*) is slightly less than (*5 percentage difference point between the two*) the proportion of marginal workers who are available for work and are matric/secondary level but below graduate.

The proportion of main workers who are graduate and above other than technical degree (*in the age category 15-24 years*) is slightly less than (*3 percentage difference point between the two*) the proportion of marginal workers who are available for work and are graduate and above other than technical degree.

The proportion of main workers who have attained an technical degree or diploma equal to degree or post-graduate degree (*in the age category 15-24 years*) is slightly less than (*3 percentage difference point between the two*) the proportion of marginal workers available for work and who have attained a technical degree or diploma equal to degree or post-graduate degree.

Figure 41: Education level of non-workers available for work in Thoothukudi (15-24 yr)

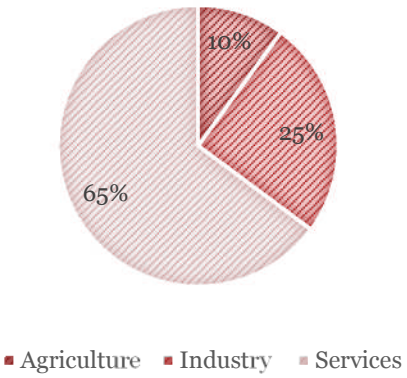


Amongst the 41,354 non- workers in the age group of 15-24 years, 3299 (7.98%) hold a technical degree or a diploma equal to degree or post graduate degree and 4,715 (11.40%) have a graduate and above other than a technical degree. 4,639 (47.38%) have a diploma or a certificate (not equal to degree). 19,592 (47.63%) are educated up to the matric/secondary level but below graduate and 8,532 (20.63%) are literate but below matric/secondary level. 577 (1.40%) marginal workers who are available for work in this age group are not literate.

1.2.2. Key Economic Drivers

According to District Economy Survey, Thoothukudi, the Gross Domestic Product of the district (at constant prices- 2004-05) was INR 1,228,778 crores in 2012-13 and it has steadily grown at a CAGR of 9.5% over the period 2004-05 to 2012-13. The sectoral break up suggests that services sector contribution to district GDP is more than half (65%) followed by industries sector (25%). Further disaggregation suggests that logistics sector has a share of 30% and manufacturing has a share of 16% in the district GDP. Other sectors driving the district economy are agriculture (8%) and construction sector (8%).

Figure 42: Sectoral breakup of Thoothukudi district GDP at constant prices (2004-05)



The key economic drivers of the district are illustrated below:

1.2.3. Priority Sectors

In Thoothukudi, the priority sectors that have been identified are **Port and Maritime sector** and other sectors: **logistics, fisheries, tourism and construction.** Other sectors that have been identified as priority sectors from the point of view of their contribution to district GDP are **manufacturing and agriculture.**

1.2.4. About Port

Ports & Maritime			
Major Ports: 1	**Minor Ports:** Nil		**Shipyards:** Nil
Details			
V.O. Chidambaranar Port Trust (VOCPT)			
Operations:	PPP (Only Container Terminal) Rest by Port Trust	*Capacity*	44.55 mn tonnes P.A
Key Cargo	Containers (36%), Dry Bulk (32%), Break Bulk (14%)	*No of berths*	13
		Draft	12.80 M
Description and key Trend	The VOC Port is an all-weather port and has been one of the important ports of India lying very close to the international sea route. The port's hinterland is southern and Western parts of Tamil Nadu and South-western parts of Karnataka. In 2015-16, it witnessed close to 14% growth in traffic which is expected to further grow in the coming years due to various projects planned in the ports and maritime sector. There are plans to expand the outer harbour and improve the efficiency of the present one which is currently at 83%.		
Terminal Operations			
	PSA Sical	Port Trust	
Annual Capacity	4,50,000 TEUs		
Type of Cargo handled	Container	Dry Bulk (Coal, Fertilizer), Liquid Bulk and Break Bulk	
Manpower	200	850 (150 on Contract)	
High Demand Job Roles	Crane Operators, Truckers, Surveyors	Mechanics for Mechanized equipment.	

1.2.5. Investments

The table below summarizes the investments that are in the pipeline over the next few years:

Table 3: Proposed Key Investments for the year 2016-22 in Thoothukudi

Sector	Proposed Investment (INR cr)	Number of Projects	Expected Employment	Key Players
Port & Maritime	11,823	10	7,000 persons	VOC Port, PSA Sical Container Terminal
Manufacturing	4,300	2	~45,000 persons	SIPCOT, TIDCO
Power	28,283	3	3,000 persons (Construction) 1,500 persons	TANGEDCO
Infrastructure	14,308	3	--	AAI, TNRSP, NHAI, TNRDC

In the port and maritime sector, the outer harbor development, construction and mechanization of various berths at the VOC Port and increasing rail based port connectivity are the major proposed projects that have been identified as key focus areas for future investments. Details of proposed investments in this sector are given below:

Table 4: Details of Investments in Port and Maritime sector in Thoothukudi

Project	Proposed Investment (INR cr)	Expected Employment	Key Players
Outer Harbour Development	10,150	-	VOC Port Trust, PSA SICAL Container Terminal
Construction of North Cargo Berth 2	332	7,000 persons[15]	
Construction of North Cargo Berths 3 & 4	1,101		IITTM Chennai, VOC Port Trust
Development of LNG Terminal	350		VOC Port Trust
Conversion of Berth No. 8 as Container Terminal	312.23		VOC Port Trust
Mechanization of Berth No. 9 (Upgradation of mechanical handling infrastructure at V.O. Chidambaranar Port Trust	49.20		VOC Port Trust
Construction of Shallow Water Berth for handling General Cargo	123		VOC Port Trust
Construction of Shallow Water Berth for handling Construction Materials	65.37		VOC Port Trust
Laying of Railway Track from Port Marshalling Yard to Hare Island at V.O. Chidambaranar Port	58.30		DCW, VOC Port Trust
Proposed making up cess from in between station Milavittan yard and TNHP marshalling yard	3.05		Southern Railways, VOC Port Trust

The new investments in the MSME category are to be seen mainly in food Production and Processing, especially sea food, apparel manufacturing and chemicals.

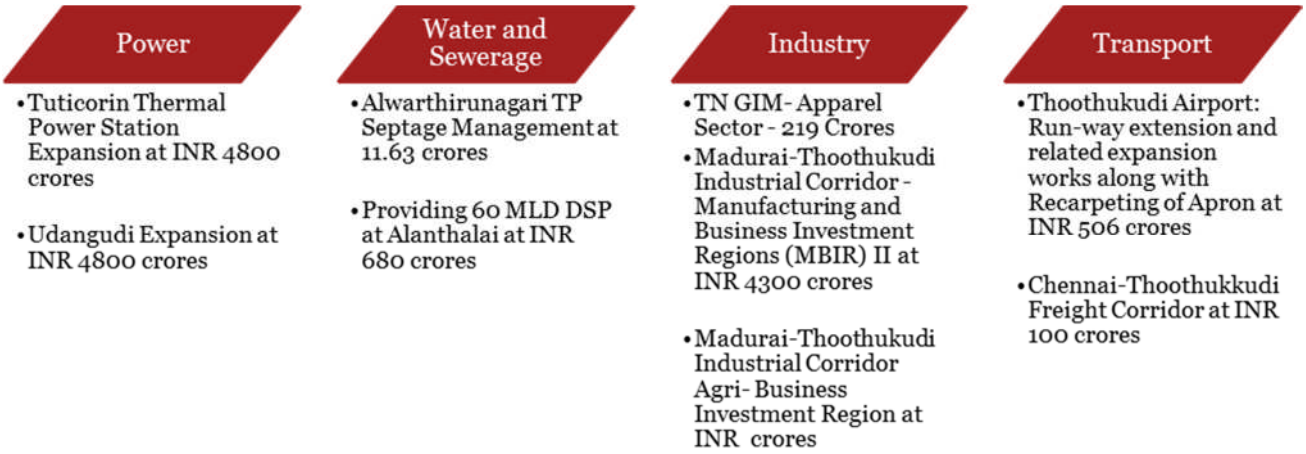
Table 5: Details of New Investments from DIC in Thoothukudi

Sector	Number of Projects	Proposed Investment (INR cr)	Expected Employment
Food Production and Processing	93	47	1,282 persons
Apparel & Textiles	71	10	582 persons
Wood Products	14	9	90 persons
Chemicals	30	20	357 persons

In Thoothukudi, with the Tamil Nadu vision 2023 plan, upgradation and urbanization plans are proposed in the sectors like power, water supply and sewerage and transport. The proposed Madurai-Thoothukudi Industrial and Agro-Business Corridor is also expected to bring about a huge boost in the district. Brief details of proposed investments across these sectors are given below:

[15] Calculated from incremental Traffic and historical utilization rates at TPT.

Figure 43: Details of proposed investments across different sectors



1.2.6. Youth Aspiration

The key findings of the youth aspirations include youths' exposure to vocational training and educational aspiration, job aspirations, training aspirations and self-employment.

Respondent Profile

The table below provides an overview of the respondent profile:

Profile	Details
Total Sample Size	386
Gender Profile	Male - 56.7% Female -43.3%
Age Group	15-24 years
Education Level (top 3)	Secondary schooling(Class 9 to 10)- 18.7% Higher secondary schooling with commerce (Class 11 to 12)- 18.7% Senior Secondary Schooling (Class 9 to 10)- 14.2%
APL/BPL/AAY/Don't know	APL -3.6 % BPL - 90.2 % AAY -3 0.8% Don't know/Can't Say - 5.4 %
Occupational Profile (top 3)	Unemployed (42.2%), Student (30.3%), Salary from employment (9.8%)

Exposure to Vocational Training and Educational Aspiration

Regarding the exposure to the vocational training most students reported that they had not completed any vocational training course. Overall, ~85% of the respondents had not enrolled in vocational training course (Figure 44).Further, the respondents were asked level about the level of education they wished to attain. Nearly, two-thirds of the respondents (68%) didn't aspire for further education. The desire to attain technical education is relatively low with only 7% aspiring for graduation in technical field as against preference to general degrees (20%) (Figure 45)

Figure 44: Respondents who completed vocational training course - Thoothukudi

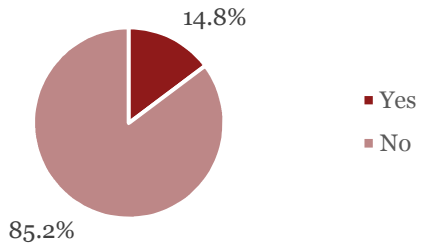
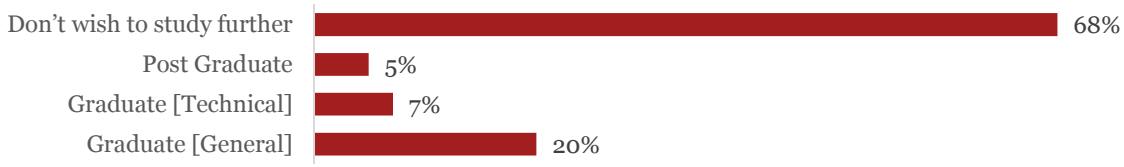
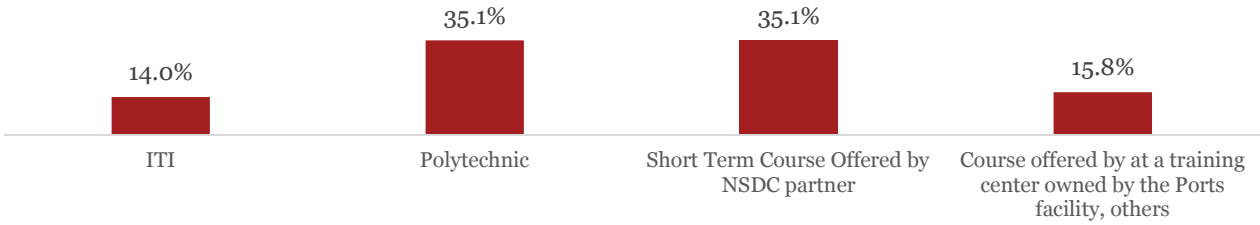


Figure 45: Desired level of education - Thoothukudi



Of the total respondents who underwent vocational training (which is ~14%), most were from Polytechnics (35.1%) and NSDC TSPs (35.1%). Figure 46 exhibits the percentage of respondents who completed different types of courses as part of their vocational training (Figure 46).

Figure 46: Respondents who completed courses in vocational training - Thoothukudi



Job Aspiration

One of the important findings of the survey has been the high preference for wage employment over self-employment among the youth of the district. About 97% of the respondents reported to have preferred wage employment over self-employment (Figure 47).

The respondents were further asked to identify the factors important for securing employment in the area of interest. Respondents identified Industry Specific skills (74%), availability of opportunities (52%) and good personality (51.5%) as important factors (Figure 48).

Figure 47: Respondents aspiring for wage and self-employment - Thoothukudi

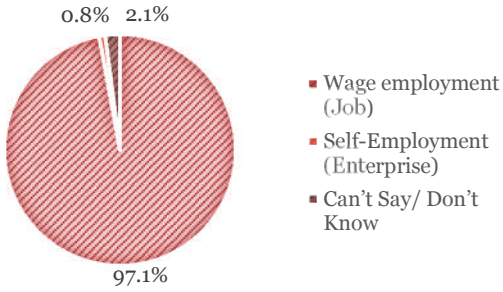


Figure 48: Factors important for securing employment in area of interest - Thoothukudi

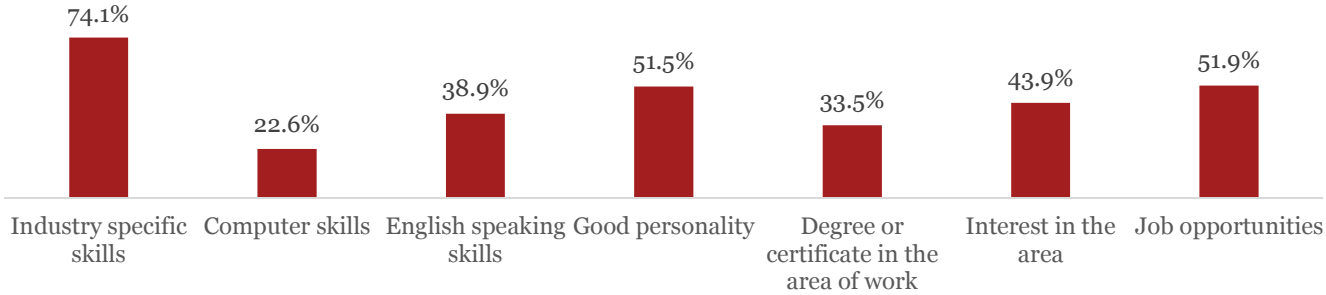
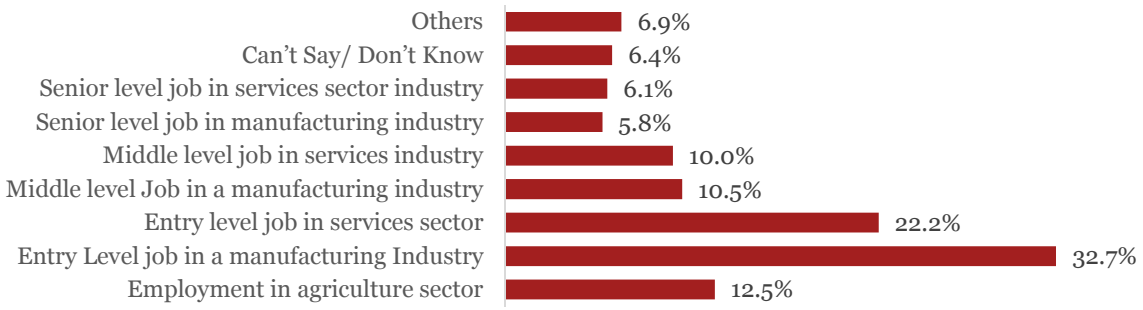


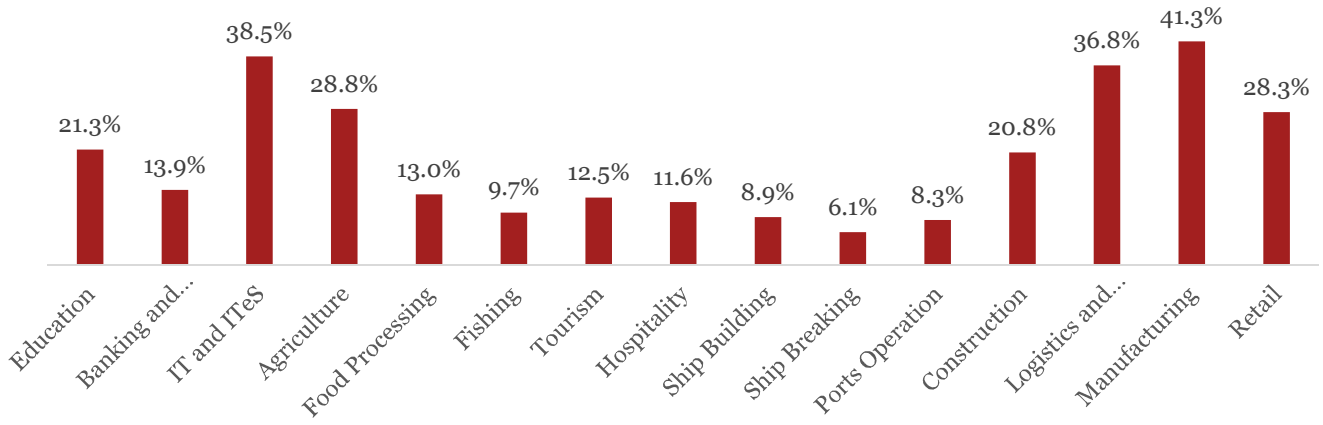
Figure 49: Desired job profile after completion of education/training - Thoothukudi



Regarding job aspiration of the respondents after completion of education or training, it can be observed that there is a demand for manufacturing sector with 33% aspiring for entry level jobs and 10% aspiring for middle level jobs. This is followed by entry level jobs (22%) and middle level jobs in services sector (10%). 12.5% also want to enter the Agriculture sector (Figure 49).

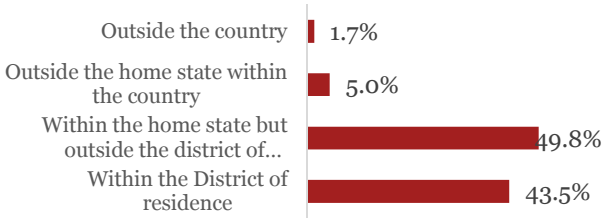
Further, Manufacturing (41.3%), IT/ITEs (38%) Logistics & transport (36.8%), Agriculture (29%) and Retail (28.3%) have been identified as sectors in which the respondents feel that they are mostly likely to get job which is in alignment with their aspiration for a job in the service sector space. The details of other sectors are mentioned in Figure 50.

Figure 50: Sectors in which respondents' foresee getting a desired job - Thoothukudi



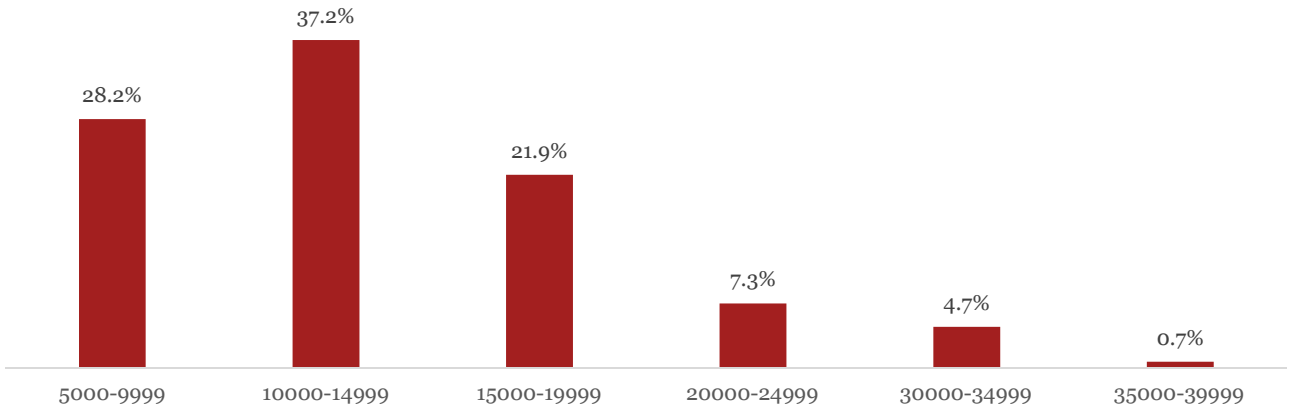
Out of total respondents, 94% preferred to work in the same state. However, less than half of the of the respondents (43.5%) preferred to work in the same district and 49% expressed willingness to migrate to other districts in the same state suggesting some flexibility among the youth of the district (Figure 51).

Figure 51: Preferred work location of candidates - Thoothukudi



For about 37.2% of the respondents, the monthly salary expectation was INR 10,000-15,000 . And for 28.2% of respondents the expected salary is reported to be range in 5,000-10,000 per month (Figure 52).

Figure 52: Monthly salary expectation of respondents - Thoothukudi



Training Aspiration

Regarding willingness of the respondents to participate in the training programme in the next one year, two thirds expressed interest (Figure 53).

Further, when enquired about the key focus areas of skill training, 84.9% of respondents reported that emphasis must be laid on technical skills followed by personality development(54.8%) and Proficiency in English and IT skills (14% each) (Figure 54).

Figure 53: Willingness to participate in trainings - Thoothukudi

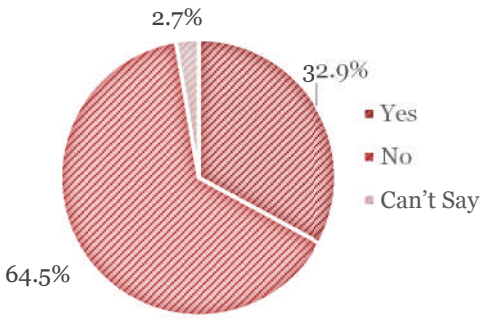
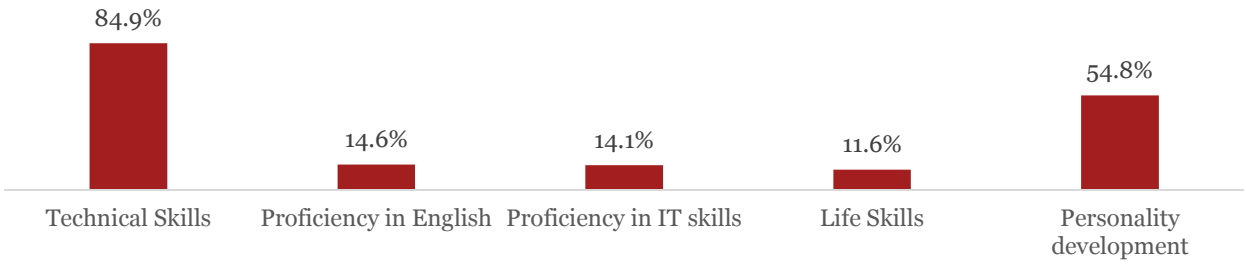
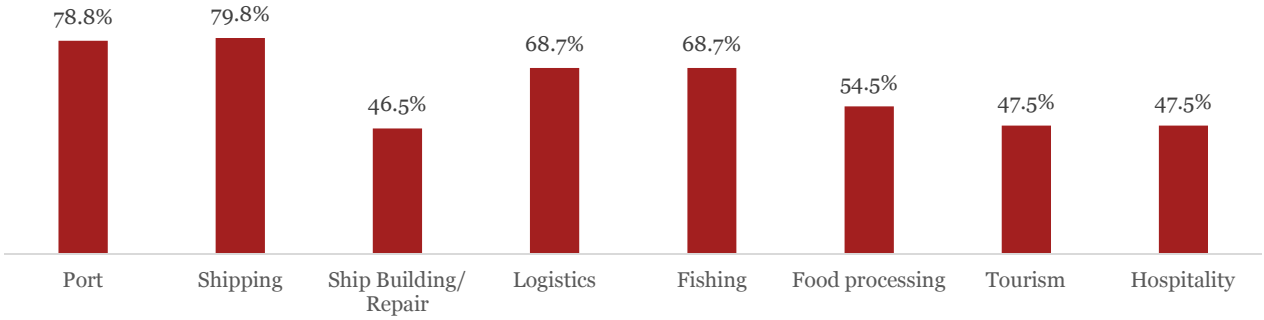


Figure 54: Focus area on skills training - Thoothukudi



Overall, there is high acceptability for training in port, logistics and shipping activities (barring ship building) related activities, fishing (68.7%) and food processing (54%) show demand for the core sectors of this study.

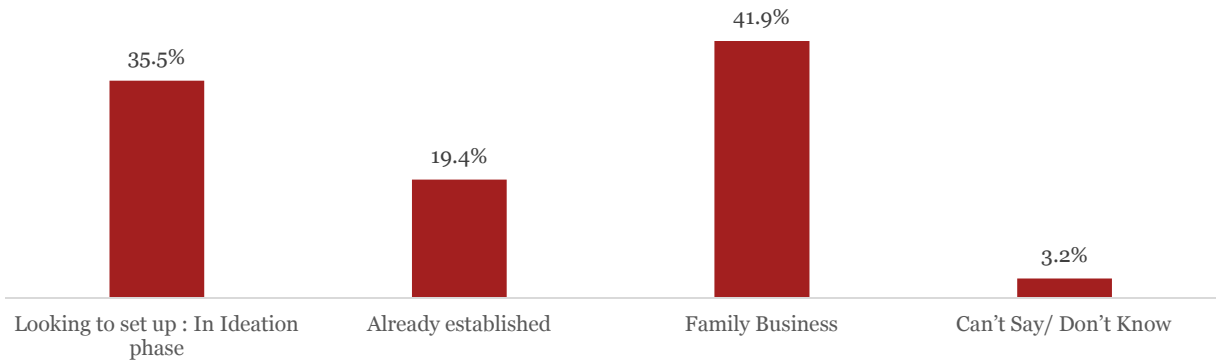
Figure 55: Willingness of respondents to participate in trainings of different sectors - Thoothukudi



Self-Employment

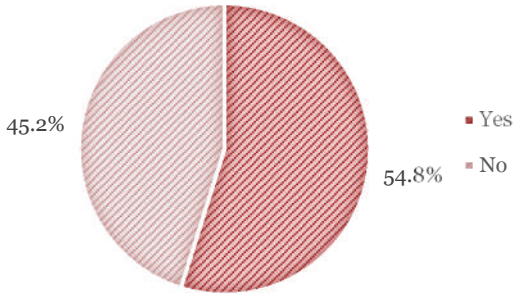
Regarding current status of the Entrepreneurial Venture of the respondents who aspired for self-employment, 41.9% were in family business and 35.5% were in their ideation stage (Figure 56).

Figure 56: Current Status of Entrepreneurial Venture - Thoothukudi



Further, 54.8% of the respondents expressed a desire to undergo a training programme for enhancing their entrepreneurial skills (Figure 57).

Figure 57: Interested in skill development for enhancing entrepreneurial skills - Thoothukudi



Retail business (92%) and hospitality (8%) are the only sectors which the respondents want to set up ventures in. IT/ITEs services, trading, manufacturing and tour operations have found no takers as most preferred sectors for setting own enterprise (Figure 58).

Figure 58: Sectors for establishing enterprise - Thoothukudi

1.2.7. Training Infrastructure

Type of training infrastructure	Total number of institutions	No of trades	Top 5 trades based on enrolment and seat capacity
ITI	17	16	Fitter, Electrician, Welder, MMV, COPA
Polytechnic	10	12	Civil Engineering, Electrical And Electronics Engineering, Mechanical Engineering, Civil Engineering, Electronics & Communication Engg.
PMKK Training Centre	1	2	
PMKVY	2	5	Home Health Aide, General Duty Assistant, Emergency Medical, Technician-Basic, Autoconer Tenter, Ring Frame Tenter.
DDU GKY	Information Unavailable	Information Unavailable	
Other State Govt. skill centres			
TNSDC	29	31	DTP and Print Publishing Assistant Accounts Assistant using Tally, Draughtsman Mechanical, Basic of Anatomy & Physiology, and Arc and Gas Welder.

The Training infrastructure in the district is dominated by the ITIs and Polytechnics. However, the trades are largely focussed on technical and enginering trades.

- ITI-s -There are 17 ITIs providing training in 16 different trades. However, according to information shared by the Dept. of Employment and Training, (GoTN), only 55% the total capacity is sactioned for conducting trainings. The actual occupation of seats is around 40% in total capacity.

- Polytechinics – Core engineering sectors like Civil, Electrical & Electronics, Electronics & Communication and Mechanical remain the most dominant trades, however, new age trades like Hotel Management, Mechatronics, Production Technology, etc. are also gaining traction. The students prefer to move to full time engineering courses post diploma.

- PMKVY & PMKK – The Trades are focussed on the Hospital and Manufacturing sectors with a santcioned strength of around 240.

- TNSDC – Through various institutions, TNSDC has santioned courses in 31 trades with a capacity of almost 900. However, the duration and levelof training vary widely and would require standardisation.

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2. Skill Gap Assessment, Job Roles and Emerging Job Roles

2.1. Thiruvallur

2.1.1. Incremental Demand[16] for Skilled & Semi Skilled Manpower

The district of Thiruvallur is witnessing increased industrialization and urbanization due to its proximity to Chennai. These are affecting the incremental demand for skilled workforce in the district, where as per our methodology, Construction, Manufacturing and Trade are going to generate the maximum demand for skilled and semi-skilled workers.

Table 6: Incremental Demand for Skilled & Semi Skilled Workers in Thiruvallur

Sector	2017	2018	2019	2020	2021	2022	Total
Core Sectors							
Ports & Allied	1,305	848	940	1,042	1,159	1,289	6,583
Logistics	1,363	1,421	1,478	1,540	1,603	1,669	9,074
Tourism	870	923	979	1,036	1,099	1,165	6,072
Construction	3,512	3,721	3,943	4,180	4,429	4,693	24,478
Other Dominant Sectors in the District							
Manufacturing	3,831	4,005	4,186	4,377	4,575	4,783	25,757
Trade (Retail & Wholesale)	1,864	1,976	2,094	2,221	2,354	2,495	13,004
BFSI	640	676	712	751	792	836	4,407
Agriculture	-228	-226	-226	-224	-223	-222	-1,349
TOTAL							88,026

Key trends in Core Sectors

- **Ports and Allied Sectors**: Expected increase in the throughput at Ennore and Kattupalli ports and the need for increased productivity to ensure competiveness are key drivers for demand of skilled labour within the Ports & Allied Sector. The gradual shifting of traffic from Chennai port to Kamarajar Port, the large quantities and share of bulk & container cargo traffic, are expected to be dominating factors for pushing the labour requirements. The higher requirement of skills makes it one of the most promising employer of skilled labour.
- **Logistics:** Ponneri is going to emerge as a node for the CBIC and CVIC. In addition to the growth of traffic from Chennai Ennore and Kattupalli ports, gradual shifting of industries to the outskirts of Chennai city and development of Sri City in Andhra Pradesh is expected to increase the demand for total employment in the logistics sector.
- **Tourism & Hospitality:** Thiruvallur District neighbours important tourist and business destinations like Chennai and Tirpuati. Trends in migration, businesses and tourists are key drivers of the incremental demand in the sector. The sector is increasingly demanding skilled workers, especially within the Hospitality segment.
- **Construction:** In addition to the increasing urbanization, major infrastructure projects on CVIC and CBIC, Smart Cities and Metro Rail are in the anvil. Thus, there is going to be a considerable construction activity in the district.

[16] Incremental Demand Estimates the additional stock of workforce that are to be created given the expected Economic Conditions in the period of study. This may help in estimating requirement for fresh trainings.

- **Fisheries:** The promotion of deep line fishing, cage culture, aquaculture etc. are expected to promote requirement of skilled workers in the fishing industry. The clusters for Fish food Processing, Ornamental Fish and Crustacean cultures are also being focussed by the Govt.

Key trends in other Dominant Sectors in the District

- **BFSI**: Thiruvallur neighbors Chennai. The increasing costs of real estate in the city and the recent rapid advancements in the Banking Sector like financial inclusion, increase in coverage through insurance can expect to drive the economy towards the financial sector.

- **Manufacturing**: Part of the extended Chennai Metropolitan Area, traditionally has been Auto and Auto-components hub. Thiruvallur is set to receive further boost in Manufacturing with the CVIC and CBIC. Heavy engineering Parks, Plastic Manufacturing park, Electronics etc. are planned.

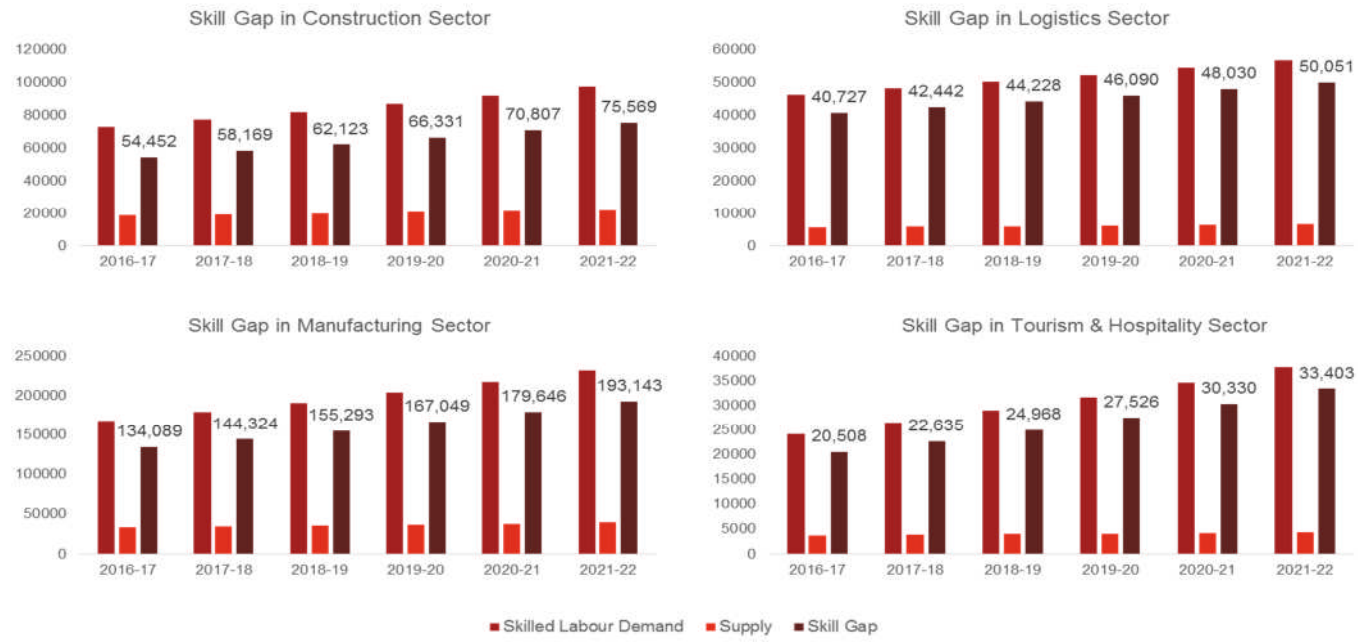
- **Trade**: The expanding nature of the urban agglomerations of Chennai and Tirupati is going to have spill-over effect on Thiruvallur's south eastern and western blocks respectively. Trade is a dominant sector in terms of both income and employment in the district and the increased formalization can expect to create a demand of reorganization and up-skilling of existing workforce.

- **Agriculture**: Increasing urbanization and relatively lower returns due to erratic weather in the district are expected to lower demand in the sector.

2.1.2. Gap between Total Demand[17] and Supply for Skilled workforce in Select Sectors

The gap in the **existing total skilled workforce connotes the gap between the total requirement of skilled manpower and workforce in the district with recognized trainings in the said sectors**.

Figure 59: Gap between Skilled Manpower Requirement and Workforce in District with Trainings in Select Sectors in Thiruvallur



[17] Total Demand refers to the total stock of workforce including the existing workforce in a sector in a district given the expected Economic Conditions in the period of study. This may help in identifying Scope for RPL and Upskilling

- **Construction Sector:** The availability of the skilled workforce is substantially higher in the district than the general levels in other districts, with a concentration of institutions. However, the percentage of total skill availability is still low. The gap is set to increase from 54,462 to 75,698 assuming present rates of growth of population and demand for skilled workforce, a jump of nearly 40 %.

- **Logistics Sector:** The logistics sector has historically been characterized by its informal nature and this is reflected in the very low levels of recognized skilled workforce with less than 5,000 people with formal recognitions to meet the nearing **total requirement of skilled manpower** of 50,000. These are very exacerbated by the limited options available of recognized trainings and certificates in the sector. However, the incremental requirement for workforce in the district is expected to increase the gap further by nearly 1/4th.

- **Manufacturing Sector:** The sector has historically been served by degrees in engineering, diplomas in polytechnics and certificates in ITIs in the region. In addition, there have been certification programs in the MSME sector as well. Though as a share, close to 30,000-40,000 people are expected to be trained as per current trends, this amounts to less than 1/4ths **total requirement of skilled manpower.**

- **Tourism and Hospitality:** Given the present trends of increased formalization and requirement of skilled workers in the sector, the gap between the **total requirement of skilled manpower** and **availability of workforce with recognized trainings** is set to increase by a whopping 55% by 2022. The requirement for initiating new trainings and recognizing prior learning in the sector is thus a priority.

2.1.3. Job Roles High in Demand

This sections captures the jobs that have been reported to be high in demand in Thiruvallur. The job roles that are listed below have been identified by the stakeholders. Across the sectors, few of job roles are susceptible to be impacted by technological disruptions and automation. The sub-sections below describes the job roles that are high in demand across the sectors.

Port and Maritime Sector

The port and maritime sector has reported high demand for crane operators and other skilled workers such as welders, electricians, and blasters. Safety has been underlined as one of the focus areas for training workforce in the port and maritime sector. With increasing technological disruptions that are happening in the sector, there is a need for upskilling of the workforce. Increasing automation in the sector will make few of the manual jobs redundant. Overall, the jobs in this sector will be driven by the growth in the volume of cargo.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Port & Terminal operations	**Findings**
• Berth Ship Unloaders • PLC Machine operators • Railway Engine Operator • Rail Mounted Quay Crane Operator • Rail Mounted Gantry Crane Operator • Forklift Operator • Reach Stacker Operator • Crane Mechanic • Surveyors • Conveyor Belt Mechanic • Car Drivers (Ro-Ro)	• Well trained crane operators are difficult to find in the job market • Currently, Port operators and CFSs have to train the crane operators for at least three months • Trainings required on safety issues especially in handling crane operations • Rail and Conveyor based equipment and usage is heavy in the port terminals. There is limited availability of technicians in the area. • Port & maritime sector is currently demanding skilled workforce; the shortfall is being met with migrant labour.

Other Priority Sectors

The job roles that are high in demand in the sectors and that have been identified as priority sectors are listed in this sub-section. Like port and maritime sector, sectors such as logistics, manufacturing, and construction will also be susceptible to technological disruptions and automation, which will negatively impact jobs of manual nature.

Logistics

Truckers are high in demand but the existing workforce that is engaged in trucking lacks life skills. Truckers who could be equipped with skills for handling hazardous substances will be greatly demanded by the manufacturing firms that are located in industrial areas such as Taloja. Automation will impact manual jobs in this sector.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Logistics	Findings
• Surveyors • Fork lift operators • Supervisors • Hydraulic Axle Operator • Truck Driver • Helper	• Increasing volumes of cargo is expected to be diverted to Ennore from Chennai due to faster evacuation. • Large manufacturing units are in want of logistics internally. • Skills shortages for handling hazardous substances • Life skills training required for truckers • Increased use of ICT and automation in work processes will impact the manual jobs.

Construction

Projects such as smart cities will demand skilled workforce that will be able to use smart technologies in not only building the smart cities but also maintaining them. There will also be demand for workforce that could work in renewable energy domain. Other projects such as Railways and Metro will require skilled workforce in structure design and maintenance, finishes, and electrical works for building huge infrastructural facilities.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Construction	Findings
• Solar PV installer (Civil) • Fabricator • Supervisor-Structure • Supervisor-Finishes • Supervisor - Electrical Works • Supervisor - Roads & Runways • Painter (Machine operated)	• Infrastructural development projects such as the Railways and Metro will require skilled workforce • Site workers will require skills to use new, innovative technological devices and smart systems • Skills to manage increased integration of technologies into the building structures • Demand for new age installation and maintenance skills especially in renewable energy sector • Limited apprenticeship arrangement exists, combining formal training off-the-job with on-the-job training

Manufacturing

Thiruvallur is an industrial and manufacturing hub that caters to sectors such as Petroleum and Petrochemicals, Automobiles and Auto-components, Electronics, Plastics, Heavy Engineering etc. These sub-sectors demand skilled workforce that could work in manufacturing processes. Emerging technology such as 3D or additive manufacturing will shape the manufacturing sector in next few years and the workforce engaged in manufacturing will have to upgrade its skills to be in tune with the emerging market requirements. This sector will also require technological literacy among the workers.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Manufacturing	Findings
• Production Assistants • Welder • Fitter • Mechanic • Plumber • Electrician • Turner • Motor Binding	• Industrial areas in and around the district including Ambattur, Thirumazhisai, Ennore, Ponneri (Upcoming) demand skilled workforce. • Supervisory skills are also needed in the roles of foremen, leading hands and supervisors • High preference for apprenticeship arrangements exist, combining formal training off-the-job with on-the-job training. • Industry associations design custom trainings as add-ons for the sector. • Stakeholders indicated preference for hiring ITI graduates.

Tourism

Tourism sector in Thiruvallur is buoyed by demand from the neighbouring districts of Chennai, Chittoor, Kanchipuram and Vellore. A small pool of local workforce is complemented with a migrant workforce that is working to support the tourism sector. There are opportunities to engage local youth in this sector. Training in the sector, among others, will require focus on English & Foreign language skills. Opportunity exists for boating facilities in Pazhaverkadu and Pulicat Lake.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Tourism	Findings
• Front Office Executive • Chef • Sommelier • Chauffeur • Kitchen Steward • Housekeeping Supervisor • Tour guide • Facility Store Keeper • Billing Executive • Boatman • Lifeguards	• Small pool of adequately skilled personnel at the skilled worker level results in a small pool of people from which to draw for higher positions • High migration rates result in higher turnover in employees • Requirement for foreign language skills to cater to tourists from France, Japan, etc. • General requirement of French to cater to high-end customers in culinary field. • Focus required on communication skills/public relations; reporting skills; administration skills and financial skills

Fisheries

Pockets around the coastal areas could be used for aquaculture and mariculture, especially around Ponneri, Poondi and Pazhaverkadu. Trainings imparted in aquaculture could help in providing the fishing community an insight into a more profitable way of doing business and also to make proper utilization of unused land parcels that are unfit for agriculture. Trainings in marine fish farming is necessary to make the fish farmers aware about the scientific procedure of fish farming and thereby improve upon the traditional practices. Further, shrimp and ornamental export houses in Pazhaverkadu, Kolathur area demand skilled workforce.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Fisheries	Findings
• Cold Storage Technician • Warehouse Manager • Mechanic • Glass/Tunnel/Trolley Freezer Operator • Grading supervisor • De-heading supervisor • Aquaculture Technician • Mariculture Technician	• Thiruvallur can hugely benefit from improved fisheries practices • Export potential for shrimps • Unused land parcels can be used for aquaculture and mariculture • Improved skills are particularly needed for aquaculture and mariculture

BSFI

A small pool of local workforce is engaged in this sector. There are opportunities to train the local youth in this sector. BSFI sector is very much susceptible to automation of front end and back end processes.

The matrix below captures the jobs roles that are high in demand:

Job Roles: BSFI	**Findings**
• Teller • Value banker • Debt recovery agent • Insurance agents	• Focus required on language skills • Small pool of adequately skilled personnel at the skilled worker level results in a small pool of people from which to draw for higher positions • Up-skilling (technology and business skills) will be important • Automation and software could render many lower skilled customer service roles obsolete

Agriculture

Rapid urbanization and industrialization is fast making the incentives from Agriculture far less attractive. The ever depleting water table would be a huge challenge.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Agriculture	**Findings**
• Drip Irrigation Technician • Agriculture Equipment Technician • Harvesting machine Operator	• Less returns from agriculture. • Increased use of machinery in industrialized agriculture. • Erratic rainfall and urbanization increasing demand for water. • Non availability of cheap labour. • Sustainable practices for agriculture required.

2.2. Thoothukudi

2.2.1. Incremental Demand[18] for Skilled & Semi Skilled Manpower

The district of Thoothukudi is witnessing increased industrialization with the Port and other Infrastructure related developments. These are affecting the incremental demand for skilled workforce in the district, where as per our methodology, Manufacturing, Construction, Trade with significant contributions from Port & Logistic and Tourism sectors are going to generate the maximum demand for skilled and semi-skilled workers.

Table 7: Incremental Demand for Skilled & Semi Skilled Workers in Thoothukudi

Sector	2017	2018	2019	2020	2021	2022	Total
Core Sectors							
Ports & Allied	780	810	840	810	870	930	5,040
Logistics	1,194	1,243	1,293	1,347	1,402	1,459	7,938
Tourism	907	995	1,093	1,199	1,317	1,445	6,956
Construction	4,472	4,816	5,186	5,586	6,015	6,479	32,554
Other Dominant Sectors in the District							
Manufacturing	3,450	3,594	3,745	3,904	4,068	4,239	23,000
Trade (Retail & Wholesale)	1,942	2,133	2,341	2,570	2,821	3,097	14,904
Agriculture & Fisheries	540	542	546	548	552	554	3,282
TOTAL							93,674

Key trends in Core Sectors

- **Ports and Allied Sectors**: Thoothukudi port has witnessed steady growth and is expected to continue the trend with the awaited Madurai-Thoothukudi Industrial Corridor project. With the outer harbour project and/ or the Enayam port also on the anvil, the sector is set to see an increase in demand.

- **Logistics:** The Madurai-Thoothukudi Industrial Corridor, with the development of the East Coast Road is going to be the driver of workforce requirement for logistics. Increasing manufacturing in the hinterland, including Coimbatore, Madurai and Tirunelveli and the new railway line to Madurai via Aruppukottai will increase the port's viability and demand.

- **Tourism & Hospitality:** Plans are on the anvil for the development of tourism circuit through the Swadeshi Darshan Scheme. Apart from upgrading facilities to the ever increasing tourist inflows at the Thiruchendur Murugan temple, Manapad, dotted with beaches and steeples, the district is planned to be developed as "Little Goa" while temple circuits are planned in Nava Tirupati and Nava Kailayam around Sri Vaikuntam. Plans for developing a Marina in the Thoothukudi harbour are also on the anvil.

- **Construction:** The infrastructure sector including roadway upgradation (East Coast Road), Madurai-Thoothkudi Industrial Corridor (Factories, Roadways, Power lines, Railway lines), Port Development are going to be the major drivers for the construction sector. Urban development projects in underground sewage systems, water supply, and airport expansion are other expected drivers.

- **Fisheries:** There is promotion of sustainable fishing practices to protect the sensitive bio-sensitive region of the Gulf of Mannar marine bio-reserve. The increased promotion of Fish Food Processing sector is also expected to promote requirement of skilled workers in the fishing industry, aquaculture.

[18] Incremental Demand Estimates the additional stock of workforce that are to be created given the expected Economic Conditions in the period of study. This may help in estimating requirement for fresh trainings.

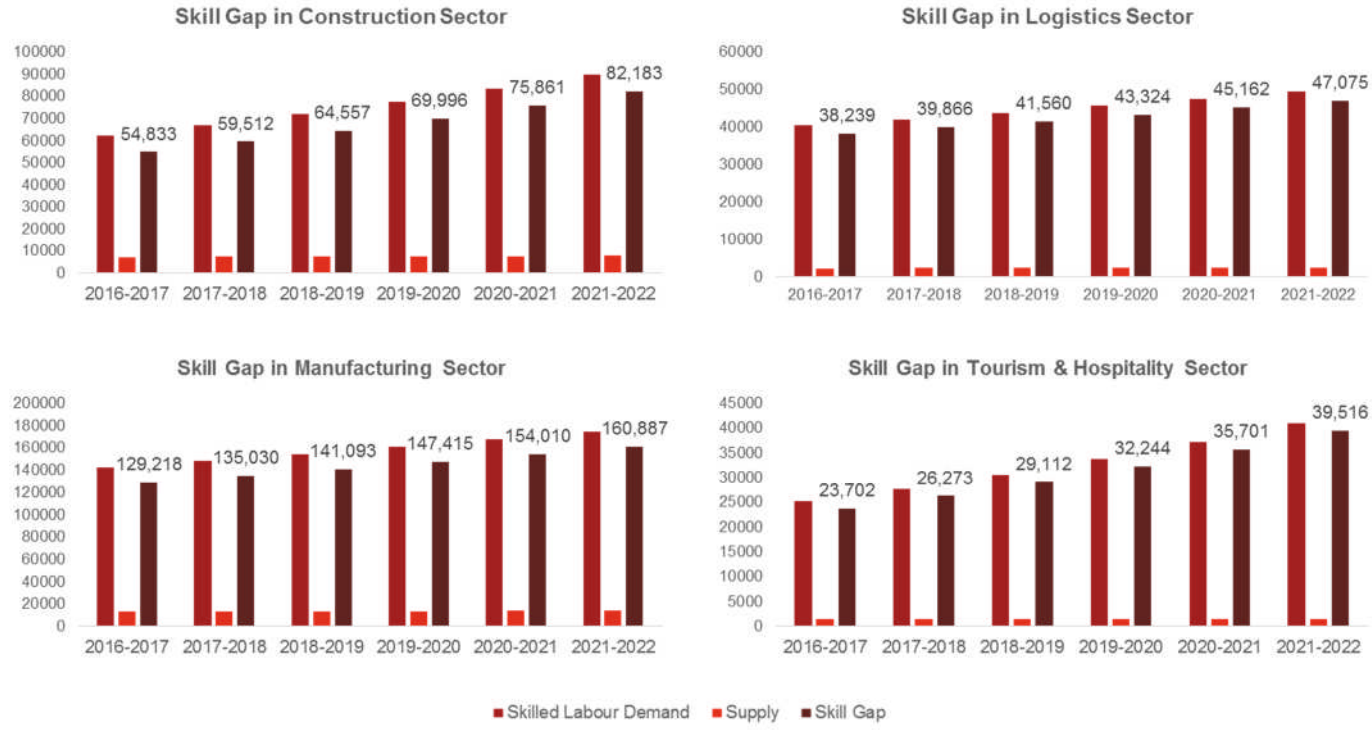
Key trends in other Dominant Sectors in the District

- **Manufacturing & Industry**: In the Madurai Thoothukudi Industrial Corridor, Petroleum, Power, Chemicals, Steel, Fish food processing, Apparel and Agro Businesses are expected to drive the demand for growth. Thermal power plants are planned by TANGEDCO.
- **Trade**: Thoothukudi has been historically known for its marine trade links. The sector continues to be dominant in the district and is expected to increasingly formalize.
- **Agriculture & Fisheries**: The decreased landholdings and erratic rainfalls have affected employment prospects. However, fisheries have seen continuous increase in output and will be boosting employment in the sector.

2.2.2. Gap between Total Demand[19] and Supply for Skilled workforce in Select Sectors

The gap in the **existing total skilled workforce connotes the gap between the total requirement of skilled manpower and workforce in the district with recognized trainings in the said sectors**.

Figure 60: Gap between Skilled Manpower Requirement and Workforce in District with Trainings in Select Sectors in Thoothukudi



- **Construction Sector:** The percentage of total skill availability is still low. The gap is set to increase from 54,833 to 82,183 assuming present rates of growth of population and demand for skilled workforce, a jump of nearly 40 %.
- **Logistics Sector:** Less than 2000 skilled workers are available to meet the **total requirement of skilled manpower** of 40,000. These are very exacerbated by the limited options available of recognized trainings and certificates in the sector. However, the incremental requirement for workforce in the district is expected to increase the gap further by nearly half.

[19] Total Demand refers to the total stock of workforce including the existing workforce in a sector in a district given the expected Economic Conditions in the period of study. This may help in identifying Scope for RPL and Upskilling

- **Manufacturing Sector:** The manufacturing sector faces high skill gap owing to lack of sufficient training infrastructure in the district, with the gap exceeding 1 lakh.

- **Tourism and Hospitality:** Given the present trends of increased formalization and requirement of skilled workers in the sector, the gap between the **total requirement of skilled manpower** and **availability of workforce with recognized trainings** is set to increase by a more than 70% by 2022. The requirement for initiating new trainings and recognizing prior learning in the sector is thus a priority.

2.2.3. Job Roles High in Demand

This sections captures the jobs that have been reported to be high in demand in Thoothukudi. The job roles that are listed below have been identified by the stakeholders. Across the sectors, few of job roles are susceptible to be impacted by technological disruptions and automation. The sub-sections below describes the job roles that are high in demand across the sectors.

Port and Maritime Sector

The sector is facing uncertainty due to the current slump in international shipping and international economic slowdown. The investments are also awaiting policy decisions on the proposed Industrial Corridors, port developments in Thoothukudi, Enayam and Vizhinjam (Kerala). PPP implementation is in its infancy, and will push for further requirement of labour in the near future.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Port & Terminal operations	**Findings**
• PLC Machine operators • Railway Engine Operator • Rail Mounted Quay Crane Operator • Rail Mounted Gantry Crane Operator • Forklift Operator • Reach Stacker Operator • Crane Mechanic • Surveyors • Conveyor Belt Mechanic	• Current slump in shipping has distorted market. • Automation of Bulk cargo movement affecting lower skilled jobs in stevedoring. • Middle level jobs in Customs and Clearance are sufficiently available. • Currently, Port operators and CFSs have to train the crane operators for at least two-three months • Trainings required on safety issues especially with Truck Drivers. • PPP mode is expected to take off in the near future. Current operations is managed by Port Trust with existing and contractual labour.

Other Priority Sectors

The job roles that are high in demand in the sectors and that have been identified as priority sectors are listed in this sub-section. Like port and maritime sector, sectors such as logistics, manufacturing, and construction will also be susceptible to technological disruptions and automation, which will negatively impact jobs of manual nature.

Logistics

Truckers are high in demand but the existing workforce that is engaged in trucking lacks life skills. Truckers who could be equipped with skills for handling hazardous substances will be greatly demanded by the manufacturing firms that are located in industrial areas in and around Thoothukudi and the nearby Tirunelveli and Kanyakumari Districts.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Logistics	**Findings**

• Surveyors • Fork lift operators • Supervisors • Truck Driver • Helper	• Increasing volumes of cargo is expected with port expansion and Enayam Project • Skills shortages for handling hazardous substances • Life skills training required for truckers • Increased use of ICT and automation in work processes will impact the manual jobs.

Construction

Setting up of new age industries, power plants and urban sanitation and renewable energy projects would necessitate skill and knowledge up-gradation. There is a deficiency in availability of resources in these sectors.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Construction	Findings
• Supervisor-Finishes • Supervisor - Electrical Works • Supervisor - Roads & Runways • Solar Panel Technician • Painter (Machine operated) • Plumbers • Sanitation Technicians	• Presently, the work force is largely unskilled • Safety is a key area of requirement. Awareness about safety equipment requires adequate orientation. • Skills to adapt to new technologies in building construction. • Demand for new age installation and maintenance skills especially in renewable energy sector

Manufacturing

Thoothukudi is an industrial hub that caters to sectors such as Petroleum and Petrochemicals, Apparel, Food Processing, Safety Matchstick Making etc. These sub-sectors demand skilled workforce that could work in manufacturing processes. This sector will also require technological literacy among the workers.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Manufacturing	Findings
• Production Assistants • Welder • Fitter • Mechanic • Plumber • Electrician • Turner • Motor Binding • Tailoring • Marketing Professionals	• Demand is driven by large scale industries, and there is immense potential through the Madurai Thoothukudi Industrial Corridor • Apparel industry is widespread as an MSME industry and is largely driven by women from their homes or small factories in the vicinity. • Food processing industry with a sizable women workforce is also a key driver. • Currently, chemicals, engineering works are witnessing saturation.

Tourism & Trade

Tourism sector is set to further develop on the back bone of the Swadeshi Darshan Scheme. Employment is to increase in formal and self-employment providing higher end services. The small scale manufacturers also need to handle the trade of their produce and require marketing skills.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Tourism	Findings
• Front Office Executive • Chef • Kitchen Steward • Housekeeping Supervisor • Tour guide • Facility Store Keeper • Billing Executive	• Limited availability of adequately skilled personnel at the skilled worker level results in a smaller pool of people from which to draw for higher positions • High migration rate of employees results in higher turnover in of workforce • Requirement for English Language skills • Entrepreneurship skills for

• Boatman • Lifeguards • Food and Beverage Executive	• Focus required on communication skills/public relations; reporting skills; administration skills and financial skills

Fisheries & Sea Food Processing

The presence of the sensitive bio-diversity in the marine eco-system, are both an opportunity and challenge in the district. On the one hand, rich varieties with high demand, both nationally and internationally are available, the threat to endangered species and sustainability due to over fishing are also threats in the foreseeable future. Threats of crossing international boundaries and borders are a constant issue in the northern blocks of the district. Inland fishing and aquaculture hold sizable opportunities. Packaged sea products are also widely exported.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Fisheries	**Findings**
• Deep Sea Fisherman • Engine & Boat Mechanics • Inland Fishing • Prawn & Crab Farmer • Cold Storage Technician • Warehouse Manager • Mechanic • Glass/Tunnel/Trolley Freezer Operator • Grading supervisor • De-heading supervisor • Aquaculture Technician • Mariculture Technician	• Requirement of safety trainings, handling communication equipment while at sea. • Necessity for boat repairers, fish net mending. • Potential for employment for women in sea food processing. • Export potential for produce • Unused land parcels can be used for aquaculture with appropriate skill up-gradation.

3. District Action Plan

3.1. Background

An actionable roadmap is one of the deliverables to be submitted to MoS for implementing skill training programmes in each of the districts. To develop these District specific plans, the team has mapped the emerging skilling opportunities across the 13 districts. Further, similar training opportunities or training requirements from the same sector have been clubbed into one programme to ensure optimal use of resources and to build economies of scale for delivery partners. This has been proposed to improve the chances of developing and proposing feasible and viable training delivery models.

Further, the team has also estimated the broad capital and operational expenditure expected to be incurred in operationalizing the training initiatives in the districts. Apart from this, critical operational aspects such as training delivery mechanisms, availability of curriculum and employers have also been explored. The current status of these critical aspects will help ascertain the feasibility of initiating these trainings immediately and assess the gaps that need to be bridged before these trainings can be rolled out.

3.2. Objective of developing the plan

The District action plans have been developed with an overall objective of providing a step by step skill implementation plan to the Ministry of Shipping in the six coastal districts. The specific objectives include the following:

- Mapping various skilling opportunities available in the district, keeping in mind the requirements of Port led development and emergence of CEZs.
- Mapping the current status of various pre-requisites such as availability of qualifications, curriculum, funding for training, potential training delivery partners, availability of assessors and certification processes and institutions for the training programmes.
- Identifying the potential/target beneficiaries for the training courses.
- Mapping the infrastructure and the investment that may be required to deliver the training programmes in the district.
- Providing an estimate of the investment required to create/hire the skilling infrastructure.
- Providing a step by step action plan for MoS to implement the skilling initiatives.

3.3. Methodology

Stakeholder consultations[20] were held at national, state and district level and that included stakeholders from government, industries, associations, and private firms. A separate plan has been prepared for each of the 13 districts. The plan has been divided into several sections and includes sections on training delivery, potential partners, and investments. The investments component has been divided into two broad heads: capital expenditure and operational expenditure. Capital expenditure has only been proposed in cases in which there were very limited possibilities of using existing institutional framework for partnership and for using existing infrastructure and equipment. Operational expenditure includes the cost of running the training programmes including the salary of the instructors. The common cost norms inform the calculation of the operational expenditure. Capital expenditure has been worked out bearing in mind the infrastructure requirements of the programme and duration of training programmes. Wherever feasible, partnership with existing programmes such as DDU-GKY and PMKVY has been suggested in the plan.

[20] Roughly 300 primary consultations inform the development of this plan

3.4. Summary for Thiruvallur

SN	Project Name	Job Roles	Type of training	No. of people to be trained
1.	Skill Development Centre for Ports and Logistics	Truck and heavy vehicle operators, Crane operators, Truck Drivers-cum-Hazardous Materials Handler, Surveyors	Fresh and Upskilling	5,850 persons in next 5 years
2.	Fisheries and Sea Food Culture	Aquaculture & Mariculture Ornamental fish culture Sea Weed Culture	Fresh Training	1,800 persons in next 5 years
3.	Training for Food Technicians	Food Dehydration Technician, Quality assurance Manager/Lab Technician, Food microbiologist/ Food Processing Worker, Processed Food Entrepreneur	Fresh and Upskilling	1,500 persons in next 5 years
4.	Trainings in Manufacturing and Construction	Welders, Mechanics, Electrician, Fitters, Fabricators, Machinist, CNC aided manufacturing, Commercial vehicle drivers	Fresh Training	4,500 persons in next 5 years
5.	Skill Development in tourism and hospitality Sector	Taxi Drivers, Sommeliers/Wine Stewards, Bartenders, Tour Operators	Fresh Training and Upskilling	2,600 persons in next 5 years
6.	Mechanization Training to Agriculturalists – power tilling, micro irrigation	Micro Irrigation Technician, Harvesting Machine Operator	Upskilling	600 persons in next 5 years
7.	Sustainable Fishing and Safety Training	Sorters, fish handling, spotters (Pagi), Mechanics, fish handlers, Technician	Fresh Training	7,000 persons in next 5 years

3.5. Action Plan for Thiruvallur

<table>
<tr><td colspan="6">Project 1: Skill Development Center for Ports and Logistics</td></tr>
<tr><td colspan="2">Key economic drivers</td><td colspan="4">• Two Major ports in proximity – Kamarajar Port Limited (KPL) & Chennai Port Trust
• One minor port and a shipyard at Kattupalli
• Existing industrial cluster (Ambattur and SIDCO Industrial Estate) catering to auto components, engineering products, textiles and rubber products
• Upcoming CVIC, CBIC, Heavy Engineering Industrial Park</td></tr>
<tr><td colspan="2">Rationale for a Training Center</td><td colspan="4">The ports and associated logistics service providers such as the CFS, transport operators, custom houses, survey agencies etc. are located in close proximity. Also, there is internal requirement within the manufacturing industries in and around the district. MoS can explore the opportunity for establishing a Center for Excellence in Ports and Maritime sector. The proximity of the many industrial clusters also drives the need for internal logistics services for individual units.

The recent oil spill in the port necessitates an urgent look at handling and disposal of oil and other hazardous chemicals in a safe and secure manner. The coastal communities could be engaged further to protect themselves and the environment from such risks in the future.</td></tr>
<tr><td colspan="2" rowspan="8">Trainings</td><td>Training courses</td><td>Target Beneficiaries</td><td>Type of Trainings</td><td>Total Number of beneficiaries</td></tr>
<tr><td rowspan="2">Truck and heavy vehicle operators</td><td rowspan="2">• Existing Truckers
• Unemployed Youth</td><td>Upskilling (120 Hours)</td><td>1000 persons in next 5 years</td></tr>
<tr><td>Fresh Training (240 Hours)</td><td>800 persons in next 5 years</td></tr>
<tr><td rowspan="2">Crane operators</td><td rowspan="2">• Existing Truckers
• Coastal communities</td><td>Upskilling (120 Hours)</td><td>300 persons in next 5 years</td></tr>
<tr><td>Fresh Training (360 Hours)</td><td>150 persons in next 5 years</td></tr>
<tr><td rowspan="2">Handling hazardous cargo and Chemicals</td><td rowspan="2">• Port workers
• Local Communities
• Truckers
• Fishermen</td><td>Upskilling (120 Hours)</td><td>2000 persons in next 5 years</td></tr>
<tr><td>Fresh Training (240 Hours)</td><td>1000 persons in next 5 years</td></tr>
<tr><td>Surveyors</td><td>• Coastal communities</td><td>Fresh Training (300 Hours)</td><td>600 persons in next 5 years</td></tr>
<tr><td rowspan="3">Availability of curriculum</td><td>Job Roles</td><td>Target Groups</td><td>Available QP/NOS</td><td>MES</td><td>CTS</td></tr>
<tr><td>Truck and heavy vehicle operators</td><td>Truck Drivers</td><td>• Reach Truck Operator</td><td>Course available for:
• Driver HMV
• Driver LMV</td><td>No course available</td></tr>
<tr><td>Crane operators</td><td>Crane operators</td><td>QP available for:
• Crawler crane operator
• Hydra crane operator
• Tyre mounted crane operator
• Junior crane operator
• Overhead crane operator</td><td>Course available for:
• Truck Mounted/Crawler/Rough Terrain Crane Operator</td><td>No course available</td></tr>
</table>

	Handling hazardous cargo	Truck Drivers-cum-Hazardous Materials Handler	• QP does not exist	No course available	No course available
	Surveyors	Surveyors	QP available for: • Warehouse Supervisor • Warehouse Quality Checker • Warehouse Claims Coordinator • Consignment Booking Assistant • Shipment Classification Agent • Clearance Support Agent	No course available	No course available

Investment (INR In lakhs)	**Truck and heavy vehicle operators**	
	Operational Expenditure	126.2
	Crane operators	
	Operational Expenditure	35.3
	Handling hazardous cargo	
	Operational Expenditure	197.6
	Surveyors	
	Operational Expenditure	66
	Total Operational Expenditure	**425.4**
	Capital Expenditure for training centre	**270**
Potential Partners	**Partner**	**Areas of Support**
	KPL	• Space and infrastructure for establishing the training center • Access to port facilities for practical training • Guest faculty • Input for designing curriculum • Provision of used equipment for training • Facilitate implementation of RPL for existing work force • Provide guest faculty and facilitate on the job training
	Industry Associations (SIDCO /TIDCO and Ambattur Industrial Estate)	• Industry interface • On the job training • Facilitate implementation of RPL for existing workforce
	Training Partner (KPL/TSP)	• Training delivery • Co-management of the training facility
	Logistic Sector Skill Council	• Development of QPs for the identified job roles • Develop model training programmes for the identified Job Roles • Identification and certification of Trainers

		• Identification and certification of assessors • Assessment of trainees • Certification of Trainees
Training Delivery	**Option 1** • KPL or MoS creates the training facility • Training facility to be managed and maintained by KPL or MoS • KPL to deliver the training and provide qualified trainers and mobilize trainees **Option 2** • Private training provider to rent/develop the training facility and deliver the training programme	

Work Plan

Port and Logistics	**in Months**								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Partnership with SSC, Industry Partners and Knowledge partners									
Development of QPs									
Establishment of Training infrastructure and facility									
Furnishing of the training centre									
Purchase and installation of lab equipment									
Appointment of staff members (instructors, counsellors, mobilization in-charge, placement officers, administrative staff etc.)									
Mobilization of prospective trainees									
Enrolment of students									
Roll-out of training programme									

Project 2: *Fisheries and Sea Food Culture*				
Key economic drivers	• Huge tracts of land parcels that are available could be used for aqua-culture and mariculture • Huge demand for shrimps, crabs , and ornamental fish • Processing and exports of shrimps			
Rationale	In Thiruvallur, people have land holdings that could be used for aquaculture and mariculture due to the high salinity of soil and water. Trainings imparted in aquaculture could help in providing the fishing community the opportunity for improved livelihoods. There is a huge demand for shrimps and crabs in food sub segment (with a cluster in Ponneri) and for ornamental fish in non-food segment (with a cluster in Kolathur); and high quality produce could be exported. Around 10,000 people are involved in fishing and allied activities. This provides a sizable population to conduct short term trainings for value addition. Tamil Nadu Fisheries University with the partnership of TNSDC is already conducting trainings. This could be expanded in scope and standardized as per national standards. Such trainings will help them to get loans from the banks to engage/ venture into self-employment prospects.			
Trainings	**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**
	Aquaculture & Mariculture	• Existing workforce engaged in fishery • Agriculturalists • Coastal communities	Fresh Training (200 -240 Hours)	1000 persons in next 5 years

		Ornamental fish culture	• Coastal communities		600 persons in next 5 years
		Sea Weed Culture	• Coastal communities		200 persons in next 5 years
Availability of curriculum	**Job Roles**	**Target groups**	**Available QP/NOS**	**MES**	**CTS**
	Aquaculture/ Mariculture Technicians Brackish water aquaculture farmer	Fishermen community Unemployed youth Agriculturalists	QP available for: • Aquaculture technician • Aquaculture worker • Brackish water aquaculture farmer • Mariculture operator • Shrimp farmer • Crab fattening farmer	No course available	No course available
	Ornamental fish culture	Fishermen community Unemployed youth	QP available for: • Aquaculture technician • Aquaculture worker • Freshwater aquaculture farmer • Fish Retailer • Ornamental Fish Technician	No course available	No course available
	Sea Weed Culture	Fishermen community	QP available for: • Mariculture operator • Aquaculture technician	No course available	No course available

Investment (INR In lakhs)	**Incubation and training centre**	
	Aquaculture & Mariculture	
	Operational Expenditure	92
	Ornamental fish culture	
	Operational Expenditure	57.5
	Sea Weed Culture	
	Operational Expenditure	20.7
	Total Operational Expenditure	**170**

Potential Partners	**Partner**	**Areas of Support**
	Tamil Nadu Fisheries University, Ponneri campus	• Provide infrastructure for training • Training delivery • Support in setting up/scaling up the training centre as per the required SSC norms • Provide faculty members • Integrate the proposed trainings in its training plan
	Central Marine Fisheries Research Institute	• Input for designing the curriculum • Guest faculty
	Industry Associations (Shrimp and ornamental fish clusters)	• Industry interface • Facilitate sourcing of shrimps to different export houses
	Agriculture Sector Skill Council	• Develop model training programmes for the identified Job Roles • Identification and certification of Trainers

		• Identification and certification of assessors • Assessment of trainees • Certification of Trainees
	Tamil Nadu Fisheries Development Board, TNSDC, NFDB	• Supply funds for training, infrastructure development,
Training Delivery	• Thiruvallur Fishery Training Institute will provide the infrastructure and deliver the training programmes • Agriculture Sector Skill Council will certify the training programmes • Department of Fisheries and MoS through TNSDC could fund the training	

Work Plan

Fisheries	**in Months**			
	1	**2**	**3**	**4**
Upgradation of training centre				
Affiliation of Training centre with ASCI				
Purchase of consumables				
Appointment of additional staff members				
Mobilization of prospective trainees				
Enrolment of students				
Roll-out of training programme				

Project 3: Training for Food Technicians				
Key economic drivers	• Presence of a huge market in nearby cities and towns. • Decreasing returns from agriculture – need for diversification and value addition			
Rationale for Training	More than 10,000 acres of mango plantations are present in the district and there is also a huge market around Thiruvallur. There will be potential demand for food technicians in the next 2-3 years. Thiruvallur also has a great opportunity for sea food processing, being one of the most prominent producers of sea food in the state. The District Agricultural Marketing Society is already conducting such trainings for women farmers to augment their incomes. These could be standardized and certificates could be provided to the trainees on completion, enabling easy access to loans for self-employment. Trainings at the entrepreneurial level have to be made NOS-based.			
Trainings	**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**
	Food Dehydration Technician	• Local youth • SHGs	Fresh Training (200 Hours)	1500 persons in next 5 years
	Quality assurance Manager/Lab Technician	• Local youth • Agriculturalists • SHGs		
	Food microbiologist/ Food Processing Worker	• Local youth • Agriculturalists • SHGs		
	Processed Food Entrepreneur	• Local youth • Agriculturalists • SHGs		
			Upskilling	

				(120 Hours)	
Availability of curriculum	**Job Role**	**Target Group**	**QP/NOS**	**MES**	**CTS**
	Food Dehydration	Graduates in the district, women entrepreneurs, SHGs	• Fruits and Vegetables Drying or Dehydration Technician	• Fruits & Vegetables Processing • Meat and Meat Products Processing	• Craftsman – Fruits and Vegetables • Agro Processing
	Quality assurance Manager/Lab Technician	Graduates in the district, women entrepreneurs, SHGs	• Quality Assurance Manger	Fruits & Vegetables Processing	No course available
	Food microbiologist/ Food Processing Worker	Graduates in the district, women entrepreneurs, SHGs	• Food microbiologist	Fruits & Vegetables Processing	No course available
	Processed Food Entrepreneur	Existing and Potential Food Processing Workers, SHGs	• Industrial Production Worker – Food Processing	No course available	No course available
Investment (INR In lakhs)		**Incubation and training center**			
		Operational Expenditure	136.8		
		Capital Expenditure	20		
Potential Partners		**Partner**	**Areas of Support**		
		Industries/ MSME	• Classification of Food processing Cluster in Thiruvallur		
		Industry Associations (Food Processing)	• Industry interface • Facilitate recruitment		
		Training Partner	• Training delivery • Co-management of the training facility		
		Food Processing Sector Skill Council	• Develop model training programmes for the identified Job Roles • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees		
		PMKVY, TNSDC	• Funding		
Training Delivery		• The training center will be setup by a training provider in an existing and underutilized infrastructure in Thiruvallur. The TSP has to be empaneled with FICSI and provide trainings under DDU-GKY/ PMKVY/ Schemes under DET- Tamil Nadu			

Work Plan

Food Technician	**in Months**			
	1-3	**4**	**5**	**6**
Cluster Development				
TSP Affiliation				
Center setup				
Appointment of additional staff members				

Food Technician	in Months			
	1-3	4	5	6
Mobilization of prospective trainees				
Enrolment of trainees				
Roll-out of training programme				

Project 4: Training in manufacturing and construction					
Key economic drivers	• Manufacturing and industrial hubs • Manufacturing contributes 25% of GDP • Investments like Heavy Engineering Industrial Park and Plastics Park in the district				
Rationale	Industrial areas located in Thiruvallur district and associations such as Ambattur Industrial Estate Manufacturing Association (AIEMA) demand skilled workforce. AIEMA consists of more than 800 industrial units that engage in economic activities in a wide range of sectors including Auto Components, Electrical goods, Engineering products, Pharmaceuticals, Plastics, Glass, Rubber, and Chemicals. The training centre could provide training in jobs roles that are of high demand among the industries in and around the local geography; job roles such as CNC operator, electrician, plumber, welder, CAD and CAM are the most common vocations in which training could be provided. The TN Vision 2023 projects that are lined up in Thiruvallur such as the Heavy Engineering Industrial Park, Plastics Park and Industrial Parks for SMEs at Chengarai, Enambakkam and Kaverirajapuram will also require a workforce skilled in the above mentioned job roles. Construction sector is also rapidly growing in Thiruvallur due to its proximity to metropolitan areas and the demand for skills in this sector is also increasing with the Smart Cities project set to start in Chennai. The existing ITI infrastructure in Ambattur can be utilized to provide industry oriented advanced training to supply job-ready candidates.				
Trainings	**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**	
	Skilling of Entry Level Workforce in Manufacturing Sector	• Existing workforce engaged in manufacturing sector • ITI Graduates from Ambattur ITI	Fresh Training (480 Hours)	3,000 persons in next 5 years	
	Skilling for Construction Workers of Infrastructural Facilities	• Existing workforce engaged in construction sector • ITI Graduates from Ambattur ITI	Fresh Training (360 Hours)	1500 persons in next 5 years	
Availability of curriculum	**Job Roles**	**Target groups**	**Available QP/NOS**	**MES**	**CTS**
	Welders, Mechanics, Electrician, Fitters, CNC aided manufacturing, Commercial vehicle drivers	• Potential workforce willing to get engaged in manufacturing sector	QP available for: • Fitters • Electricians • Welding & Quality Technician • Service Mechanic, • Machining & Quality Technician • Commercial vehicle driver	Various Courses under Automobile Sector, Fabrication, Electrical, Electronics and hardware,	Various Courses under Automobile Sector, Fabrication, Electrical, Electronics and hardware

	Mason, carpenter, bar bender, supervisor, land surveyor, scaffolder	• Potential workforce willing to get engaged in construction sector	QP available for: • Mason • Carpenter • Bar bender • Supervisor • Land surveyor • Scaffolder	Course available for mason, carpenter, bar bender, supervisor, scaffolder	Course available for mason, carpenter, bar bender, supervisor, scaffolder

Investment (INR In lakhs)	**Training centre for skilling in manufacturing and construction sector**	
	Skilling of Entry Level Workforce in Manufacturing Sector	
	Operational Expenditure	685.8
	Skilling for Construction Workers of Infrastructural Facilities	
	Operational Expenditure	350
	Total Operational Expenditure	**715.8**
	Total Capital Expenditure	**300**
Potential Partners	**Partner**	**Areas of Support**
	Govt. ITI, Ambattur	• Provide infrastructure for training • Training delivery
	Industry Associations (AIEMA)	• Advanced Training in Campus • Industry interface for Apprenticeship Training • Facilitate On-Job-Training • Facilitate in identifying the firms that could recruit the trained graduates in Thiruvallur and nearby areas
	RDAT	• Facilitate Apprentice ship training scheme for on the job training.
	Industry Associations (TIDCO)	• Industry interface • Facilitate On-Job-Training • Facilitate in identifying the firms that could recruit the trained graduates in Thiruvallur
	TNSDC / NSDC	• NSDC – Empanelment of AIEMA (process underway) • TNSDC – Funding of Training
	Plumbing Sector Skill Council Automotive Sector Skill Council Construction Skill Development Council of India	• Develop model training programmes for the identified Job Roles • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees
Training Delivery	The Training would be inclusive of a 3 month long on the job training, for select candidates from the ITIs in and around Thiruvallur district. AIEMA or other industry players could identify candidates, provide inputs on curriculum and also utilize existing internal training infrastructure at AIEMA for additional inputs. RDAT in partnership with TIDCO, AIEMA etc. should facilitate the implementation through the Apprenticeship Training Scheme.	

Work Plan

Manufacturing and construction	**in Months**					
	1-2	3	4	5	6	7
AIEMA empanelment with NSDC & SSCs						
Readying of Infrastructure						
Curriculum Preparation						

Manufacturing and construction	in Months					
	1-2	3	4	5	6	7
Mobilization of prospective trainees						
Enrolment of trainees						
Roll-out of training programme						

Project 5: Skill Development in tourism and hospitality Sector – Chauffeurs and Sommeliers						
Key economic drivers		• Proximity to Chennai, attracting large number of foreign tourist and visits for commercial purposes. • Increasing manufacturing in and around Thiruvallur & Nellore attracting foreign investors • Located in between religious tourist hubs				
Rationale		With Thiruvallur emerging as one of the major investment areas for foreign capital, the need for high quality business tourism hotels has grown. In this regard, it becomes very necessary to provide basic hygiene training to the drivers so as to improve customer satisfaction. There is a need for sophisticated services like chauffeurs, bartenders and sommeliers with knowledge of more than just the local language.				
Trainings		**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**	
		Training for Taxi Drivers	• Existing Taxi Driver • Unemployed Youth	Upskilling (120 Hours)	1,000 persons in next 5 years	
				Fresh Training (200 Hours)	1,000 persons in next 5 years	
		Training for Sommeliers/Wine Stewards, Bartenders	• Graduates • Unemployed Youth	Fresh Training (360 Hours)	300 persons in next 5 years	
		Training for Tour Operators	• Tour Guide, • Counter Sales Executives (Tickets) • Travel Consultant	Upskilling (120 Hours)	300 persons in next 5 years	
Availability of curriculum	**Job Roles**	**Target groups**	**Available QP/NOS**	**MES**	**CTS**	
	Training for Taxi Drivers	• Truck Driver	QP available for: • Taxi Driver	• Driver HMV	Not Available	
	Training for Sommeliers/Wine Stewards, Bartenders	• Graduates • Unemployed Youth	QP available for: • Bartender	No course available	No course available	
	Training for Tour Operators	• Graduates • Unemployed Youth	QP available for: • Tour Guide	• Tour Agent and Travel Operator • Tour Guide for International Tourist • Tourism & Travel Executive	• Travel and Tour Assistant	
Investment (INR In lakhs)		**Training for Taxi Drivers**				

	Operational Expenditure	190
	Training for Tour Operators	
	Operational Expenditure	77.5
	Training for Bartenders	
	Operational Expenditure	36.4
	Total Operational Expenditure	304
Potential Partners	**Partner**	**Areas of Support**
	Driving Schools and Private Taxi Agencies, IITTM	• Input for designing curriculum • Guest faculty
	Tourism SSC, Tamil Nadu Tourism Development Corporation	• Develop model training programs • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees
	Training Partner	• Provide the infrastructure and lab for training • Training delivery
Training Delivery	• IITTM, NSDC Training Centers to deliver training for Tour Operators • Driving Schools, NSDC Training Centers to deliver training for Taxi Operator • NSDC Training Centers to deliver training for Bartending • The empaneled TSP could be from PMKVY	

Work Plan

Smart City	**in Months**					
	1	**2**	**3**	**4**	**5**	**6**
Partnership between Tamil Nadu Tourism Development Corporation, Tourism SSC, IITTM for development and finalization of the curriculum						
Partnership between Driving schools and Tourism SSC for development and finalization of the curriculum						
Appointment of staff members (instructors, counsellors, mobilization in-charge, placement officers, administrative staff etc.)						
Mobilization of prospective trainees						
Enrolment of students						
Roll-out of training programme						

Project 6: Mechanization Training to Agriculturalists – power tilling, micro irrigation				
Key factors	• Decreasing returns from agriculture – need for mechanization • Rapid industrialization has decreased the availability of agricultural labourers			
Rationale for Training	Having suffered the worst effects of the cyclone, Thiruvallur is gearing to face one of the worst droughts ever. In light of the rapid industrialization and the non-availability of laborers in the district, farmers need to adopt methods of mechanized agriculture such as drip irrigation, machine planting and power tilling to conserve water and targeted irrigation of the crop to increase productivity and provide self-employment for youth.			
Trainings	**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**

		Training in adopting mechanized agriculture	• Agriculturalists	RPL / Up Skilling (120 Hours)	600 persons in next 5 years
Availability of curriculum	**Job Role**	**Target Groups**	**QP/NOS**	**MES**	**CTS**
	Training in adopting mechanized agriculture	Farmers, Secondary Education completed youth in the district	• Micro Irrigation Technician • Harvesting Machine Operator	No course available	No course available

Investment (INR In lakhs)	**Incubation and training center**	
	Capital Expenditure	5
	Operational Expenditure	36.4
Potential Partners	**Partner**	**Areas of Support**
	Agriculture Dept./ Pradhan Mantri Krishi Sichalan Yojana	• Design of Scheme • Awareness Generation on Micro Irrigation among farmers • Funding of Training through RSETI
	Tamil Nadu Agricultural University	• Knowledge partnership and identification of conducive stretches • Promotion of micro irrigation among farmers
	TSP	• Mobilization and Training of beneficiaries
	ASCI (SSC)	• Develop model training programs for the identified Job Roles • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees
Training Delivery	• The training center will be setup by a training provider in an existing and underutilized infrastructure in the District with access to agricultural land preferably an RSETI Extension Training Centre • SSC to design curriculum • SSC Empaneled TSP to be Selected by Agriculture Dept. / Rural Development Dept.	

Work Plan

Micro Irrigation	in Months				
	1	**2**	**3**	**4**	**5**
Partnership with SSC, Industry Partners and Knowledge partners					
TSP Affiliation					
Center setup					
Appointment of additional staff members					
Mobilization of prospective trainees					
Enrolment of trainees					
Roll-out of training programme					

Project 7: *Sustainable Fishing and Safety Training*

<table>
<tr><td colspan="2">Key economic drivers</td><td colspan="4">• Purse fishing activities produce large amounts of by-catch (unintentionally caught fish).
• Destruction of corals due to unsustainable fishing practices.</td></tr>
<tr><td colspan="2">Rationale</td><td colspan="4">The intention to catch large quantities of fish often results in following of unsustainable and destructive methods of fishing. Fishermen need to be trained to move from a capture-based approach to a culture-based one, thereby resulting in an increase in fish population as well.
The amount that a crew can catch, depends on their skillset. The spotter is the person who spots the fishes in the sea without any scientific training. Training can be given on spotting fish, safety mechanisms to be followed, including basic navigation, reading the VPS (Vehicle Positioning systems) and basic health and hygiene training on handling the fish post-harvest.
In addition to this, fisherman are also unable to fetch good price for their produce. Most of the good quality fishes caught by fisherman are bought by suppliers (agents of exporters) at cheap rates and the fisherman incurs a loss due to lack of expertise on exporting the fish and not having direct contacts with exporters in order to bypass the intermediaries. The members of the cooperative should be given the training regarding the rules and regulations in exporting, the quality requirements, availing facilities (like cold storage) to ensure quality of fish. This will increase the returns to the fisherman and will provide a more sustainable means of income.</td></tr>
<tr><td colspan="2" rowspan="4">Trainings in high demand</td><td>Training courses</td><td>Target Beneficiaries</td><td>Type of Trainings</td><td>Total Number of beneficiaries</td></tr>
<tr><td>Sustainability Training</td><td>• Fisherman and crew members</td><td>Upskilling (120 Hours)</td><td>3,000 persons in next 5 years</td></tr>
<tr><td>Safety Training</td><td>• Local fishing community
• Fish cooperative Members</td><td>Up Skilling (120 Hours)</td><td>3,000 persons in next 5 years</td></tr>
<tr><td>Export based training for fisherman cooperative</td><td>• Members of Fisherman cooperatives</td><td>Fresh Training (200 Hours)</td><td>1,000 persons in next 5 year</td></tr>
<tr><td rowspan="3">Availability of curriculum</td><td>Job Roles</td><td>Target Group</td><td>QP/NOS</td><td>MES</td><td>CTS</td></tr>
<tr><td>• Sorters, fish handling, spotters (Pagi), Mechanics, fish handlers</td><td>• Sorters, fish handling, spotters (Pagi), Mechanics, fish handlers</td><td>Fishing Boat Mechanic, Marine Capture Fisherman</td><td>Not Available</td><td>Not Available</td></tr>
<tr><td>• Technician</td><td>• Local fishing community
• SHG members
• Fish cooperative Members</td><td>Not Available</td><td>Not Available</td><td>Not Available</td></tr>
<tr><td colspan="2" rowspan="6">Investment (INR In lakhs)</td><td colspan="4">Sustainable Fishing</td></tr>
<tr><td colspan="3">Operational Expenditure</td><td>159</td></tr>
<tr><td colspan="4">Safety Training</td></tr>
<tr><td colspan="3">Operational Expenditure</td><td>159</td></tr>
<tr><td colspan="4">Export based training for fisherman cooperative</td></tr>
<tr><td colspan="3">Operational Expenditure</td><td>78</td></tr>
<tr><td colspan="3">Total Operational Expenditure</td><td>397</td></tr>
<tr><td colspan="2" rowspan="2">Potential Partners</td><td colspan="2">Partner</td><td colspan="2">Areas of Support</td></tr>
<tr><td colspan="2">Tamil Nadu Fisheries University (TNFU)and Fisherman Cooperatives</td><td colspan="2">• Providing Trainers
• Providing technical expertise to ASCI, FICSI SSC</td></tr>
</table>

		• Space and infrastructure for establishing training • Practical training • Input for designing curriculum
	ASCI ,FICSI	• Develop model training programs • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees
Training Delivery	• TNFU to provide training infrastructure and deliver training	

Work Plan

Fisheries	**in Months**			
	1	**2**	**3**	**4**
Development and finalization of the curriculum by TNFU				
Purchase of consumables				
Appointment of additional staff members				
Mobilization of prospective trainees				
Enrolment of students				
Roll-out of training programme				

3.7. Additional Training Courses

During the interaction with the State Skill Development mission, some additional training courses were also suggested with an objective to cater the requirement in the Chennai Metropolitan Area.

The training courses have been offered traditionally by various TSPs under different schemes and programmes and have been listed in the tale below.

S. No	Sector	Trade - QPs	Qualification
1.	IT-ITES	Application Development, IT Support Services, Testing and QA	Graduate
2.	Healthcare	Home Health Aid, General Duty Assistant, Frontline Health Worker, Emergency Medical Technician	Matriculate

3.8. Summary for Thoothukudi

SN	Project Name	Job Roles	Type of training	No. of people to be trained
1	Skill Development Centre for Ports and Logistics	Truck and heavy vehicle operators, Crane operators, Truck Drivers-cum-Hazardous Materials Handler, Surveyors.	Fresh / Up-Skilling	3,100 persons in next 5 years
2	Training for Food Technicians & Sea Food Processing	Food Dehydration Technician, Quality assurance Manager/Lab Technician, Food microbiologist/ Food Processing Worker, Fish Value Added Products, Processed Food Entrepreneur.	Fresh / Up-Skilling	1,750 persons in next 5 years
3	Sustainable Marine Fishing and Safety Training	Sustainability , Modern Fishing & Safety Training, Boat & Ship Repair, Export based training for fisherman cooperative	Fresh / Up-Skilling	1,700 persons in next 5 years
4	Training for Travel and Tourism	Tour Guides, Life Guard, Boat Jetty In-charge, Counter Sales Executives, Adventure sports, Tour Guide/Manager, Travel Consultant, Counter Sales Executive, Tour Vehicle Drivers	Fresh	1,000 persons in next 5 years
5	Training in Marketing and Export Training for Tiny and Small Scale Businesses	Digital Marketing, Entrepreneurship training, Export Training	Fresh	900 persons in next 5 years
6	Training in Apparel Sector	Sewing machine operator, Embroiderer ,Fabric washing, cutting and packing	Fresh	2,400 persons in next 5 years

3.9. Action Plan for Thoothukudi

Project 1: Skill Development Center for Ports and Logistics	
Key economic drivers	• One major port – V.O. Chidambaranar Port Trust (VOCPT) • Existing industrial clusters (SIPCOT Industrial Complex and clusters in Kovilpatti) catering to chemicals, cement, textiles and processed food.
Rationale for a Training Center	The ports and associated logistics service providers such as the CFS, transport operators, custom houses, survey agencies etc. are located in close proximity. MoS can explore the opportunity for establishing a Center for Excellence in Ports and Maritime sector. The proximity of many industrial clusters also drives the need for internal logistics services for individual units. Skilled Heavy vehicle drivers are in huge demand for shipping and logistics agencies. Truckers are in short supply to move the containers and goods to and from the port site. Over 80-90% of truckers are unskilled in handling large vehicles and are chosen only based on experience. Thus, trucker's training for

		logistics sector can be taken up to supply professionally trained drivers. Further, an RPL can be planned for the existing Trucking workforce. Some of the competencies that need be developed include: a) Understanding the paper-work carried out at CFS/Ports; b) Safety and security; c) Understanding different types of containers and cargo transported from/to ports; d) Cargo safety measures associated with hazardous cargos; e) Safe driving.			
Trainings		**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**
		Truck and heavy vehicle operators	• Existing Truckers • Coastal communities	Upskilling (120 Hours)	1,000 persons in next 5 years
		Crane / Fork Lift Operators	• Existing Truckers • Coastal communities	Fresh Training (300 Hours)	300 persons in next 5 years
		Handling hazardous cargo and materials	• Existing crane operators • Coastal communities	Up-Skilling (120 Hours)	1,500 persons in next 5 years
		Surveyors	• Coastal communities	Fresh Training (120 Hours)	300 persons in next 5 years
Availability of curriculum	**Job Roles**	**Target Groups**	**Available QP/NOS**	**MES**	**CTS**
	Truck and heavy vehicle operators	Truck Drivers	• Reach Truck Operator	Course available for: • Driver HMV • Driver LMV	No course available
	Crane operators	Crane operators	QP available for: • Crawler crane operator • Hydra crane operator • Tyre mounted crane operator • Junior crane operator • Overhead crane operator	Course available for: • Truck Mounted/Crawler/ Rough Terrain Crane Operator	No course available
	Handling hazardous cargo	Truck Drivers-cum-Hazardous Materials Handler	• QP does not exist	No course available	No course available
	Surveyors	Surveyors	QP available for: • Warehouse Supervisor • Warehouse Quality Checker • Warehouse Claims Coordinator • Consignment Booking Assistant • Shipment Classification Agent • Clearance Support Agent	No course available	No course available
Investment (INR In lakhs)		**Truck and heavy vehicle operators**			
		Operational Expenditure			53

	Crane operators	
	Operational Expenditure	38.8
	Handling hazardous cargo	
	Operational Expenditure	79.7
	Surveyors	
	Operational Expenditure	38.8
	Total Operational Expenditure	**210**
	Capital Expenditure for training centre[21]	**100**
Potential Partners	**Partner**	**Areas of Support**
	VOCPT	• Space and infrastructure for establishing the training center • Access to port facilities for practical training • Guest faculty • Input for designing curriculum • Provision of used equipment for training • Facilitate implementation of RPL for existing work force • Provide guest faculty and facilitate on the job training
	Industry Associations (SIPCOT and Thoothukudi District Tiny and Small Scale Industries Association)	• Industry interface • On the job training • Facilitate implementation of RPL for existing workforce
	Training Partner (VOCPT/TSP)	• Training delivery • Co-management of the training facility
	Logistic Sector Skill Council	• Development of QPs for the identified job roles • Develop model training programmes for the identified Job Roles • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees
Training Delivery	**Option 1** • VOCPT or MoS creates the training facility • Training facility to be managed and maintained by VOCPT or MoS • VOCPT to deliver the training and provide qualified trainers and mobilize trainees **Option 2** • Private training provider to rent/develop the training facility and deliver the training programme	

Work Plan

Port and Logistics	**in Months**								
	1	2	3	4	5	6	7	8	9
Partnership with SSC, Industry Partners and Knowledge partners									
Development of QPs									

[21] The cost of procuring three crane stimulators and ten truck stimulators.

Establishment of Training infrastructure and facility									
Furnishing of the training centre									
Purchase and installation of lab equipment									
Appointment of staff members (instructors, counsellors, mobilization in-charge, placement officers, administrative staff etc.)									
Mobilization of prospective trainees									
Enrolment of students									
Roll-out of training programme									

Project 2: Training for Food Technicians				
Key economic drivers	• Presence of a huge market in nearby cities and towns. • Decreasing returns from agriculture – need for diversification and value addition			
Rationale for Training	Thoothukudi has great opportunity for sea food processing, being one of the most prominent producers of sea food in the state. The huge number of sea food processing industries in the district also result in demand for skilled workforce in the area. Women fisher folk handle most of the sale of fish, so any loss of fish during handling causes a substantial financial and social cost. These losses could be minimized by providing training on fish food processing to these women. These could be standardized and certificates could be provided to the trainees on completion, enabling easy access to loans for self-employment. Around 27,000 people are involved in fishing and allied activities, which is one of the highest in the state. Despite this, only 500 from the community are engaged in curing and processing of fish. This provides a sizable population to conduct short term trainings for value addition.			
Trainings	**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**
	Food Dehydration Technician	• Local youth • SHGs	Fresh Training (180-200 Hours)	200 persons in next 5 years
	Quality assurance Manager/Lab Technician	• Local youth • SHGs	Fresh Training (180-200 Hours)	200 persons in next 5 years
	Food microbiologist/ Food Processing Worker	• College Graduates • SHGs	Fresh Training (180-200 Hours)	200 persons in next 5 years
	Fish Value Added Products	• Fisherwomen • Local Community Members	Fresh Training (180-200 Hours)	750 persons in next 5 years
	Processed Food Entrepreneur	• Local youth • SHGs • Local Community Members	Fresh Training	200 persons in next 5 years
			Upskilling (120 Hours)	200 persons in next 5 years

Availability of curriculum	Job Role	Target Group	QP/NOS	MES	CTS
	Food Dehydration	Graduates in the district, women entrepreneurs, SHGs	• Fruits and Vegetables Drying or Dehydration Technician	• Fruits & Vegetables Processing • Meat and Meat Products Processing	• Craftsman – Fruits and Vegetables • Agro Processing
	Quality assurance Manager/Lab Technician	Graduates in the district, women entrepreneurs, SHGs	• Quality Assurance Manger	• Fruits & Vegetables Processing	No course available
	Food microbiologist/ Food Processing Worker	Graduates in the district, women entrepreneurs, SHGs	• Food microbiologist	• Fruits & Vegetables Processing	No course available
	Fish Value Added Products	Fisherwomen, Local Community Members	• Fish and Sea Food Processing Technician	• Processing of Fishes and their By-products	Not Available
	Processed Food Entrepreneur	Existing and Potential Food Processing Workers, SHGs	• Industrial Production Worker – Food Processing	No course available	No course available
Investment (INR In lakhs)		**Incubation and training center**			
		Operational Expenditure	200		
		Capital Expenditure	5-10		
Potential Partners		**Partner**	**Areas of Support**		
		Fisheries College and Research Institute (FC&RI)	• Providing Trainers • Providing technical expertise to ASCI, FICSI SSC • Space and infrastructure for establishing training • Practical training • Input for designing curriculum • Training delivery • Co-management of the training facility		
		Banks & Sea Food Companies in and Around Industrial Estate	• Credit Facilitation - Banks • Recruitment – Units in Food Port SEZ, SIPCOT Industrial Estate		
		Food Processing Sector Skill Council	• Develop model training programmes for the identified Job Roles • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees		
		TNSDC, Tamil Nadu Fisheries Development Board	• Funding		
Training Delivery	• The Fisheries College and Research Institute has existing infrastructure and conducts extension training in the sector. Funding of operational expenses for trainees and trainers would be the primary expenditure. Also, large amount of training would need to be practical and extended over a period of time to ensure the livelihood of fisher folk is not affected.				

Work Plan

Food Technician	in Months			
	1-3	4	5	6
Cluster Development				
Center setup				
Appointment of additional staff members				
Mobilization of prospective trainees				
Enrolment of trainees				
Roll-out of training programme				

Project 3: *Sustainable Marine Fishing and Safety Training*				
Key economic drivers	• Prominence of marine fishing (one of the largest in the state) • Purse fishing activities produce large amounts of by-catch (unintentionally caught fish) • Destruction of corals due to unsustainable fishing practices in the Bio-Reserve Around 27,000 people are involved in fishing and allied activities[22], which is the 4th highest in the state. This provides a sizable population to conduct short term trainings for value addition.			
Rationale	The intention to catch large quantities of fish, often results in adoption of unsustainable and destructive methods of fishing. Fishermen need to be trained to move from a capture-based approach to a culture-based one, thereby resulting in an increase in fish population as well. The amount that a crew can catch, depends on their skillset and the condition of their boats. The spotter, the person who spots the fishes in the sea, does so without any scientific training. Training can be given on spotting fish, safety mechanisms to be followed including basic navigation, reading the VPS (Vehicle Positioning systems) and basic health and hygiene on handling the fish post-harvest. In addition, boat repair, both on-shore and off shore repair can support the requirements of more than 3000 boats in the district. Threats of crossing international boundaries and borders are a constant issue in the northern blocks of the district. Training can include these aspect as well. In addition to this, fisherman are also unable to fetch good price for their produce. Most of the good quality fishes caught by fisherman are bought by suppliers (agents of exporters) at cheap rates and the fisherman incurs a loss due to lack of expertise on exporting the fish and not having direct contact with exporters in order to bypass the intermediaries. The members of the cooperative should be given training, regarding the rules and regulations in exporting, the quality requirements, availing facilities (like cold storage) to ensure quality of fish. This will increase the returns to the fisherman and will provide a more sustainable means of income.			
Trainings in high demand	**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**

[22] Fisheries census , 2010
Human Resource and Skill requirement study for 21 Coastal Districts of India- Tamil Nadu: Thiruvallur, Thoothukudi

		Sustainability , Modern Fishing & Safety Training	• Fisherman and crew members	Upskilling (120 Hours)	1000 persons in next 5 years
		Boat & Ship Repair	• Local fishing community • Fish cooperative Members	Upskilling (120 Hours)	500 persons in next 5 years
		Export based training for fisherman cooperative	• Members of Fisherman cooperatives	Upskilling (120 Hours)	200 persons in next 5 years
Availability of curriculum	**Job Roles**	**Target Group**	**QP/NOS**	**MES**	**CTS**
	• Sorters, fish handling, spotters (Pagi), Mechanics, fish handlers	• Sorters, fish handling, spotters (Pagi), Mechanics, fish handlers	Fishing Boat Mechanic, Marine Capture Fisherman	Not Available	Not Available
	• Technician	• Local fishing community • SHG members • Fish cooperative Members	Not Available	Not Available	Not Available

Investment (INR In lakhs)	**Sustainability Training**	
	Operational Expenditure	59.4
	Boat Repair Training	
	Operational Expenditure	29.7
	Export based training for fisherman cooperative	
	Operational Expenditure	11.89
	Total Operational Expenditure	**101.9**
	Capital Expenditure	**10**
Potential Partners	**Partner**	**Areas of Support**
	Fisheries College and Research Institute (FC&RI)	• Providing Trainers • Space and infrastructure for establishing training • Practical training • Input for designing curriculum
	Agriculture Sector Skill Council	• Develop model training programs • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees
Training Delivery	The Fisheries College and Research Institute has existing infrastructure and conducts extension training in the sector. Funding of operational expenses for trainees and trainers would be the primary expenditure. Also, large amount of training would need to be practical and extended over a period of time to ensure the livelihood of fisher folk is not affected.	

Work Plan

Fisheries	**in Months**			
	1	**2**	**3**	**4**

Fisheries	in Months			
Development and finalization of the curriculum by TNFU				
Purchase of consumables				
Appointment of additional staff members				
Mobilization of prospective trainees				
Enrolment of students				
Roll-out of training programme				

Project 4: *Training for Travel and Tourism*					
Key economic drivers	• Huge potential for investments in Heritage Tourism, Religious Circuits, Eco Tourism, Beach and Water based tourism, Marine water sports etc.				
Rationale	Thoothukudi has plans on the anvil for the development of tourism circuit through the Swadeshi Darshan Scheme. Apart from upgrading facilities to the ever increasing tourist inflows at the Thiruchendur Murugan temple, Manapad, dotted with beaches and steeples, the district is planned to be developed as "Little Goa" while temple circuits are planned in Nava Tirupati and Nava Kailayam around Sri Vaikuntam. Plans for developing a Marina in the Thoothukudi harbour are also in process. Skilled cab drivers, tourist guides and life guards would be in demand when these plans are executed.				
Trainings in high demand		**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**
		Training for Marine Tourism and Hospitality trades	• Fisherman population, coastal community members	Fresh Training (240 Hours)	500 persons in next 5 years
		Training for Travel and Tourism	• Graduates	Fresh Training (240 Hours)	500 persons in next 5 years
Availability of curriculum	**Job Role**	**Target groups**	**QP/NOS**	**MES**	**CTS**
	• Tour Guides • Life Guard • Boat Jetty In-charge • Counter Sales Executives • Adventure sports	• Coastal community members	QP available for: • Tour Guide • Boat Jetty In-charge • Counter Sales Executives	MES available for: • Tour Assistant • Ticket Reservation Assistant	Course available for: • Travel Tour Assistant • Tour Guide
	• Tour Guide/Manager • Travel Consultant • Counter Sales Executive • Tour Vehicle Drivers	• Coastal community members	QP available for: • Tour Guide • Travel Consultant • Counter Sales Executive • Tour Vehicle Driver	MES available for: • Tour Assistant • Ticket Reservation Assistant • Tour Agent/Travel Operator	Course available for: • Travel Tour Assistant • Tour Guide
Investment (INR In lakhs)		**Training for Marine Tourism and Hospitality**			
		Operational Expenditure	64.6		
		Training for Travel and Tourism			
		Operational Expenditure	64.6		
		Total operational Expenditure	129.3		
		Capital Expenditure	25		
Potential Partners		**Partner**	**Areas of Support**		

	TSP	• Space and infrastructure for establishing training • Training delivery/training facility
	Hotel Management Institutes (HMIs)	• Input for designing curriculum • Guest faculty
	Industry Association (Hotel)	• Facilitate On-Job-Training • Facilitate placements
	Travel and Hospitality Sector Skill Council (THSSC)	• Development of QPs for the identified job roles • Develop model training programmes for the identified Job Roles • Identification and certification of Trainers • Identification and certification of assessors • Assessment of trainees • Certification of Trainees
Training Delivery	• Engage a new TSP affiliated with DDU-GKY and PMKVY to deliver the training as neither scheme has presence in the sector in the District. • The training centre will be setup by a training provider who will be engaged	

Work Plan

Travel and Hospitality Trades	**in Months**					
	1	**2**	**3**	**4**	**5**	**6**
TSP enplanement						
Training centre setup						
Appointment of trainers						
Mobilization of prospective trainees						
Enrolment of trainees						
Roll-out of centre and training programme						

Project 5: Training in Marketing and Export Training for Tiny and Small Scale Businesses				
Key economic drivers	• Existence of several manufacturing clusters of tiny and small scale industries			
Rationale	With decreasing returns in small scale and tiny industries, there is a need to adopt new methods of marketing by these business units. Thoothukudi has several clusters in small scale niche products like coco peat, senna leaves, safety matches (in Kovilpatti) and readymade garments. Digital/online marketing and export training can be given for these units as they also have a huge market abroad. The safety match cluster in Kalugumalai and Kovilpatti has more than 600 units and gain over 55 lakhs from exports. Further, inputs on entrepreneurship can be provided to the community members interested in establishing small enterprises. This will include inputs on business planning, market linkages and bank linkages.			
Trainings	**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**
	Digital Marketing, Entrepreneurship training	• Existing clusters • Unemployed youth	Fresh Training (200 Hours)	400 persons in next 5 years

		Export Training	• Existing clusters • Unemployed youth	Fresh Training (200 Hours)	500 persons in next 5 years
Availability of curriculum	**Job Roles**	**Target groups**	**Available QP/NOS**	**MES**	**CTS**
	Entrepreneurs, Digital Marketing	Existing clusters, unemployed youth	QP available for: • Social Media & Digital Marketing Manager	No course available	No course available
	Exporter	Existing clusters, unemployed youth	QP available for: • Export Assistant	No course available	No course available

Investment (INR In lakhs)	**Incubation and training centre**	
	Digital Marketing, Entrepreneurship training	
	Operational Expenditure	36
	Export Training	
	Operational Expenditure	46
	Total Operational Expenditure	**82**
	Capital Expenditure[23]	34.5
Potential Partners	**Partner**	**Areas of Support**
	Thoothukudi District Tiny and Small Scale Industries Association, CII, Thoothukudi	• Space and infrastructure for establishing the training center • Training delivery • Provision of used equipment for training • Marketing support
	MSME, Entrepreneurship Development Institute	• Guest faculty • Developing the training curriculum
	DDUGKY, TNSDC	• Funding
Training Delivery	• Thoothukudi District Tiny and Small Scale Industries Association, CII, Thoothukudi will provide the infrastructure and deliver the training programmes	

Work Plan

Entrepreneurship, Marketing and Export	**in Months**			
	1	**2**	**3**	**4**
Development and finalization of the curriculum by MSME				
Purchase of consumables				
Appointment of guest faculty				
Mobilization of prospective trainees				
Enrolment of students				
Roll-out of training programme				

Project 7: *Training in the Apparel Sector*	
Key economic drivers	• Textiles is a key manufacturing segment in the district • Presence of the readymade garments cluster in Puthiamputhoor
Rationale	The Puthiamputhoor Readymade Garment Consortium Pvt. Ltd. is a cluster of over 350 units with a total turnover of INR 100 crore. There is a constant demand for jobs like sewing machine operator, embroiderer, packer, washer

[23] Includes the cost of building the incubation centre

		and cutting supervisor. The textile industry in Thoothukudi is also a major one with several textile mills in the region. The training can also be given as means of self-employment for men and women in the district.			
Trainings		**Training courses**	**Target Beneficiaries**	**Type of Trainings**	**Total Number of beneficiaries**
		Sewing machine operator	• Local community • Unemployed women	Fresh Training (240 Hours)	800 persons in next 5 years
		Embroiderer	• Local community • Unemployed women	Fresh Training (240 Hours)	800 persons in next 5 years
		Fabric washing, cutting and packing	• Local community • Unemployed youth	Fresh Training (240 Hours)	800 persons in next 5 years
Availability of curriculum	**Job Roles**	**Target groups**	**Available QP/NOS**	**MES**	**CTS**
	Sewing machine operator	• Local community • Unemployed youth	QP available for: • Self Employed Tailor • Sewing machine operator • Sampling Tailor	Industrial Sewing Mechanic Technician	Sewing technology
	Embroiderer	• Local community • Unemployed youth	QP available for: • Embroidery Machine Operator • Hand Embroiderer • Hand Embroiderer (Addawala)	Traditional embroidery	Surface Ornamentation Techniques (Embroidery)
	Fabric washing, cutting and packing	• Local community • Unemployed youth	QP available for: • Packer • Garment Cutter • Fabric Cutter • Washing Machine Operator	No course available	No course available
Investment (INR In lakhs)		**Incubation and training centre**			
		Sewing machine operator			
		Operational Expenditure			73.05
		Embroiderer			
		Operational Expenditure			73.05
		Fabric washing, cutting and packing			73.05
		Total Expenditure			**219.15**
		Capital Expenditure			30
Potential Partners		**Partner**		**Areas of Support**	
		Thoothukudi District Tiny and Small Scale Industries Association, CII, Thoothukudi		• Space and infrastructure for establishing the training center • Provision of used equipment for training • Marketing support	
		MSME, Apparel Sector Skill Council		• Guest faculty • Training curriculum	
		Training Partner		• Training delivery • Co-management of the training facility	
		DDUGKY, PMKVY, TNSDC		• Funding	

Training Delivery	• Engage a TSP that is affiliated with DDU-GKY and PMKVY to deliver the training at Industry Association Infrastructure

Work Plan

Apparel Sector Training	**in Months**					
	1	**2**	**3**	**4**	**5**	**6**
TSP empanelment						
SSC affiliation						
Training centre setup						
mobilization of prospective trainees						
Enrolment of trainees						
Roll-out of training programme						

4. Consultations

4.1. State level consultations- Tamil Nadu

SN	Stakeholder	Person	E-mail	Cell/ Phone
1	Directorate of Economics and Statistics	Joint Director, State Income, ASI	desiu@gmail.com	24321189
2	Pudhuvazhvu – Tamil Nadu Mahalir	Joint Director, PVP		
3	Directorate of Employment and Training	Addl. Director, General		044 22501002
4	Directorate of Technical Education	Addl. Director, Polytechnic	tndote@gmail.com	044 2235 1018
5	Tamil Nadu Skill Development Corporation	Project Director	dettnsdm@gmail.com	04422500107
6	Department of Fisheries	Joint Director Fisheries - Research	jdrfisheries1@gmail.com	
7	Department of Tourism	Commissioner of Tourism	cot2016.chennai@gmail.com	
8	Leather Sector Skill Council	CEO	info1@leatherssc.org	Priya – 7358076876
9	Logistics Sector Skill Council	CEO	ramanujam@lsc-india.com	
10	Tamil Nadu Hotels Association	Secretary	tamilnaduhotelsassociation@gmail.com	044 2859 1500
11	Directorate of Economics and Statistics	Joint Director, State Income, ASI	desiu@gmail.com	24321189
11	Regional Directorate of Apprenticeship Training	R. Senthil Kumar, Regional Director	rsenthil62@nic.in, rdatchen@nic.in	044 22500091, 9445563389

4.2. District level consultations- Thiruvallur

SN	Stakeholder	Person	E-mail	Cell/ Phone
1	Additional Collector	S.S. Kumar, Additional Collector	drdatlr@nic.in	044 27663731
2	Fisheries Department	M Chandramani	mchandramani@gmail.com	044 27972457
3	Tourism Department	John Britto, District Tourism Officer		8939955178
4	Agriculture Department	Deputy Director	agritlr@gmail.com	+(91)-44-27662852
5	Forest Department	Arumugam	tvrdfo@gmail.com	+(91)-44-27660487
6	Tamilnadu Fisheries university	Dr. S. Felix, Dean	felix@tnfu.ac.in	044 2797 1556, 94431 31025
7	DIC	Manager	tvlrdic@gmail.com	044 2766 6787
8	Tamilnadu Fisheries university, Department of Fishing Technology and Fisheries Engineering	M. Kalaiarasan, Assistant Professor	kalaimuthu2010@gmail.com	96775 38211
9	Agricultural Engineering Department	Raman, Assistant Engineer		044 27661737
10	Tamilnadu Fisheries university, Department of Fish Processing Technology	Dr. S. Balasundari, Professor	balasundari69@gmail.com	9443704190, 044 27971557
11	Ambattur Industrial Estate Manufacturers Association (AIEMA)		mail@aiema.net	044-26258619
12	Japan Development Service (JDS)	Mr. Akira Doi,Chief Adviser, Training Management	doi@jds21.com	81335808247
13	DDUGKY Project Director, Tiruvallur	P. Krishnammal		9445034209
14	Gandhi Foundation – Training Provider	Dr. T.L Nandagopal	gftrust2020@gmail.com	9994140160, 04427600537
15	International Maritime Academy	Dr. G. Hemapriya, Principal	imachennai41@gmail.com	
16	JMB	HR - Usha	ushad@jmbaxi.com	044 4525 2600
17	KFC	Ranjith, Assistant Store Manager		044 2627 2222
18	L& T Shipbuilding	HR – Mr Rajesh	rajesh.a@larsentoubro.com	044- 22706585
19	Malas Aquarium Fish Farms Breeder & Wholesaler	Anand, Manager	malasfarms@yahoo.in, gmail.com	08071599628, 9940244222
20	Ringo Cargo	Ringo	ringo@ringocargo.com	
21	GRT Regency, Tiruttani	HR		044 2788 0234
22	Sri Hari Industries	A.N.Sujeesh	sriharichn@gmail.com	+91 44-26255228/26256204, +91 9444014469
23	Apparel Training and Design Centre	Radhika, Teacher		

24	MRV Industries	Mr. T. Ramesh - Managing Partner	mrvindustries@gmail.com	+91 44-42189301

4.3. District level consultations- Thoothukudi

SN	Stakeholder	Person	E-mail	Cell/Phone
1	VOC Port	Secretary	secretary@vocport.gov.in	0461 23522322
2	VOC Port	Chief Civil Engineer	ce@vocport.gov.in	0461 2352252
3	VOC Port	Traffic Manager	tm@vocport.gov.in	0461 2352221
4	PSA-Sical	Jenita, HR Manager	jenita@psasical.co.in	09842196262
5	District Agriculture Office	Joint Director	jdatoothukudi@yahoo.com	
6	District Forest Office	Range Officer	dfotoothukudi@gmail.com	04612346600
7	District Industries Centre	R. Venkatesan, Assistant Director	venkatesanpraven@gmail.com	09443608755
8	District Tourism Office	Tourism Officer	totoothukudi@gmail.com	04612341010
9	Fisheries College	Dr. R. Santhakumar Chair, Extension Training,	soodasujan@yahoo.co.in	0461 2340554 09894530161
10	Dharangadhara Chemical Works Ltd	Vijay, Head HR	office@shpm.dcwltd.com	9843763388
11	Britto Seafood Exports Pvt Ltd	Jeyaraj		Tel: +91-461-2341318 Mob: 9787536489
12	Venus Home Appliances	R.Murali	murali@venushomeappliances.com	0461 2271891/94
13	Sahayamatha Salterns (Salt Pans)	Ramesh Rajkumar	jeffrin.rajkumar@gmail.com	9443126456
14	Kamal Healthcare Products (Unit of AVM Polybags)	S Sankar Marimuthu	sankar@kamalhealthcare.com	9442614709
15	CII, Southern Region	S George Berose	ciithoothukudi@cii.in	04612312177, 9688318699
16	Hi-tech Flyash Pvt. Ltd	T.Seenivasan, GM	exports@hitechflyash.co.in	9842133040, 04612355318
17	Chakiat Agencies – Shipping and logistics services	Jeyanth Thomas	jeyanth_thomas@chakiat.net	04614252666
18	Thoothukudi District Tiny and Small Scale Industries Association (Thuditssia)	S. Karthikeyan, Manager	thuditssia@gmail.com	04612347005
19	Kalpaka Chemicals	S. Ganesan	kcpld@dataone.in, ganesan@kalbonusa.com	04612345638
20	Miller's Super Market	Fredrick Rayen, Managing Partner	Millers_supermarket@yahoo.com	0461 – 2322075

				9443174540
21	Continental Warehousing Corporation (Nhava Sheva)	M Raghukumar, Deputy General Manager	raghukumar@cwcnsl.com	07373786700
22	GRT Regency	Karthik, HR Manager	kkan742@gmail.com	7708003195
23	SRM Hotel	HR Manager	srmhotel.tcr@gmail.com	0461 22 444 44
24	KFC	Sathish Kumar HR Manager	sathishkumar.tuticorin@outlook.com	9786604656
25	Container Corporation of India	R. Sekar, Terminal Manager		0461 2340116