

Chapter 11

Socio-economic studies and Resettlement and Rehabilitation Plan

11.0 Introduction

Water is a prime natural resource and is an essential element in all the development activities of all the living kind as well as for sustenance of the environment. Therefore, there is an imminent necessity for water to be harnessed and utilised in the most scientific manner. The main source of water in India is through precipitation which is unevenly distributed both in space and time. India receives most of its annual rainfall during monsoon months from June to October. Due to uneven occurrence of rainfall, some parts of the country receive abundant rainfall leading to floods while at the same time other parts of the country receive meagre rainfall leading to serious drought conditions. Many areas in the country reel under acute drinking water shortage during summer. In order to ensure the availability of water throughout the year for meeting various requirements, it is essential to create storage reservoirs to facilitate impounding of flood waters during monsoon. As such, construction of dams across various rivers for storage of water during the period of its availability is absolutely necessary.

Thus, river valley projects are the building blocks for nation's development. But, at the same time these projects often result in submergence/acquisition of agriculture and forest land and human habitations leading to involuntary displacement of the population residing in the area. Such adverse social impacts due to these projects which are generally unavoidable should be fairly acceptable in the broader perspective, keeping in view the immense benefits likely to be accrued in the region from them. However, it is imperative to minimize such adverse impacts and take appropriate measures to provide alternative sites for resettlement through provision of house sites, dwellings, infrastructure related to education, communication, road, drinking water, sanitation, electricity, hospital, community centre etc. and also extending suitable rehabilitation support enabling the project affected people to lead and enjoy a better quality life. Therefore, an in-depth study is essential for mapping in detail the socio-economic profile of the concerned region for probable solutions either to mitigate or minimize the adverse impacts of the project

related development. Further, the Social Impact Assessment Report depicting the present scenario will have to be prepared which shall include detailed Rehabilitation and Resettlement Plan in order to ameliorate the ill effects of displacement of people due to creation of the storages/reservoirs and/or link canal.

Accordingly, the Environmental Impact Assessment Studies of Cauvery (Kattalai) - Vaigai – Gundar link project including socio-economic surveys and preparation of Rehabilitation and Resettlement Plan (if necessary) will be taken up at a later stage. For the present, general description of socio-economic aspects in the project area and proposed approach for socio-economic studies of the link project based on similar studies carried out for other link projects as well as from secondary sources are presented in this Chapter.

11.1 Socio-economic profile and survey

The proposed Cauvery (Kattalai) - Vaigai – Gundar link project envisages diversion of 2552 Mcum from the existing Kattalai barrage on Cauvery river for extending irrigation, domestic and industrial water supply benefits in seven districts of water short region of Tamil Nadu State viz., Karur, Pudukkottai, Tiruchirapalli, Sivaganga, Ramanathapuram, Virudhunagar and Thoothukudi. The farmers in the command area of the project depend mainly on rainfall and ground water for irrigation. The link canal will immensely benefit the region by envisaging to bring additional areas to an extent of 448340 ha under irrigation utilizing 1931 Mcum. In addition, the link will provide domestic water supply to the tune of 79 Mcum in the command area. It is also planned to supply 139 Mcum to meet the demands of various industries in the region. The link project will thus bring economic prosperity to the acute water short and drought-prone command area lying in the vicinity of the link project. Besides, the project will generate immense employment opportunities to the local people during construction and operation phases.

The economic profile of the society in the vicinity of the link project will change considerably after implementation of the link project. There will be rise in agricultural income, larger scope in livelihood options, spurt in agro-based industries, animal husbandry, plantations, pisciculture, educational and health avenues and quality enhancement in the general living standards of the people in the region. All the above aspects will be assessed in detail after carrying out

the socio-economic studies of the Cauvery (Kattalai) - Vaigai – Gundar link project.

11.1.1 Regional profile from the available secondary data

The Cauvery (Kattalai) - Vaigai - Gundar link project is located in Karur, Pudukkottai, Tiruchirappalli, Sivaganga, Ramanathapuram, Virudhunagar and Thoothukudi districts of Tamil Nadu State. The link off-takes from the existing Kattalai barrage across river Cauvery, crosses on its way Vaigai and other rivers and finally terminates at Gundar river.

The Kattalai barrage across Cauvery river is located at latitude of $10^{\circ} 57' 11''$ N and longitude of $78^{\circ} 13' 56''$ E near Mayanur village in Krishnarayapuram taluk of Karur district. Mayanur itself is the nearest railway station at the head works of link project. The barrage is located about 250 m d/s of the existing Kattalai bed regulator with a pond level of 101.20 m and has 86 barrage vents and 12 scour vents of 11 m span each. The overall length of barrage is 1233.2 m.

On its path, the link canal crosses a no. of major rivers such as Punga, Koraiyar, Ariyar, Agni ar, Pambanar, Manimuttar, Vaigai etc. through major cross drainage works. The link canal terminates at the Gundar river at RD 256.82 km near Pudupatti village of Kariyapatti taluk of Virudhunagar district at latitude $9^{\circ} 38'$ N and longitude $78^{\circ} 8'$ E. From this point, Tiruchuli branch canal (Branch canal No. 12) takes off by crossing Gundar river as an aqueduct.

The command area of the link project is spread in Karur, Pudukkottai, Tiruchirappalli, Sivaganga, Ramanathapuram, Virudhunagar and Thoothukudi districts. The alignment and the proposed en-route command area of the Cauvery - Vaigai - Gundar link canal fall between latitudes $9^{\circ} 12'$ N and $10^{\circ} 58'$ N and longitudes $78^{\circ} 8'$ E and $79^{\circ} 12'$ E. Tiruchirappalli is the nearest airport to the project area.

11.1.1.1 Demography

The total population (as per census of 2011) of the districts in the Project area of Cauvery (Kattalai) - Vaigai – Gundar link project is presented in **Table 11.1**.

Table 11.1
Demographic details in the project area of
Cauvery (Kattalai) - Vaigai - Gundar link project

District	Total Population	Male Population		Female Population		Sex Ratio (no. of females/1000 males)	SC Population		ST Population	
		Number	%	Number	%		Number	%	Number	%
Karur	1064493	528184	49.62	536309	50.38	1015	221385	20.79	575	0.05
Pudukkottai	1618345	803188	49.63	815157	50.37	1015	284804	17.60	1283	0.08
Tiruchirapalli	2722920	1352284	49.67	1370006	50.33	1013	466561	17.14	18198	0.67
Sivaganga	1339101	668672	49.93	670429	50.07	1003	227746	17.01	790	0.06
Ramanathapuram	1353445	682658	50.44	670787	49.56	983	249008	18.40	1105	0.08
Virudhunagar	1942288	967709	49.82	974579	50.18	1007	399831	20.59	2294	0.12
Thoothukudi	1750176	865021	49.42	885155	50.58	1023	347895	19.88	4911	0.28

Source: District Census Handbooks, 2011

It can be seen from the above table that the male population is about 49-50% and female population is about 50-51% in all the seven districts. The sex ratio varies from 983 to 1023. The Scheduled Caste (SC) population varies from 17.01% in Sivaganga district to 20.79% in Karur district while the Scheduled Tribe (ST) population varies from 0.05% in Karur district to 0.67% in Tiruchirappalli district.

11.1.1.2 Livestock and poultry

The livestock population and poultry in the districts of the project area as per Nineteenth Livestock Census - 2012 is presented in **Table 11.2**.

Table 11.2
Livestock population and poultry in the project area of
Cauvery (Kattalai) - Vaigai - Gundar link project

Particulars	Karur	Pudukkottai	Tiruchirappalli	Sivaganga	Ramanathapuram	Virudhunagar	Thoothukudi
LIVESTOCK POPULATION							
Cattle							
(i) Indigenous	38838	302488	63922	148891	39096	42322	27240
(ii) Exotic	119448	225659	290522	97522	46747	181041	82907
Buffalo	43490	17656	21836	5088	1291	9436	7220
Sheep							
(i) Indigenous	239099	203317	131786	171092	234219	282670	155601
(ii) Exotic	8316	14148	18325	45485	8737	38773	23224
Goats	185875	383434	465832	345071	224388	363246	288684
Pigs							
(i) Indigenous	4945	2477	6058	2968	2381	6548	6331
(ii) Exotic	384	243	831	531	45	1202	708
Horses & Ponies	35	38	112	7	22	11	18
Donkeys	145	71	446	15	113	38	856
Camels	0	0	0	0	0	2	1
Total Livestock	640575	1149531	999670	816670	557039	925289	592790
Density (Nos./km²)	221	248	222	193	136	218	125
POULTRY							
Backyard Fowls	418011	932666	602013	822543	328161	474162	340446
Ducks	12640	814	6548	3248	1701	1639	2035
Turkey	664	1745	3697	2538	1772	1162	2529
Quails	102	156	271	411	537	695	490
Other Poultry	1438	2412	4925	1705	2040	2585	2413
Birds in Farms/ Hatcheries	2672289	63561	1869361	180610	26004	302230	164514
Total Poultry	3105144	1001354	2486815	1011055	360215	782473	512427
Density (Nos./km²)	1069	216	552	239	88	185	108

Source: Nineteenth Livestock Census – 2012

It can be seen from the above table that Pudukkottai district has the highest number of livestock and Ramanathapuram district has the least number. Pudukkottai district has also the highest density of livestock while Thoothukudi district has the lowest density of livestock. The livestock in the project area is dominated by cattle, goats, buffaloes and sheep. In terms of both number and density, Karur and Ramanathapuram districts have the highest and lowest poultry respectively. The poultry mainly consists of backyard fowls and birds in farms and hatcheries.

11.1.1.3 Agriculture

The population inhabiting in and around the project area is mainly dependent on agriculture. Paddy, Jowar, cumbu, cholam, groundnut, gingelly and pulses are the dominant crops grown in the command area. Banana, cotton, chillies, mango, coconut, sunflower and ragi are also grown in limited area. The agriculture in most of the areas is under rain fed as the irrigation facilities are limited.

11.1.1.4 Literacy

The district-wise literacy status as per the census 2011 is given in **Table 11.3**.

Table 11.3
Literacy rate in the project area of
Cauvery (Kattalai) - Vaigai - Gundar link project

District	Male literacy		Female literacy		Total literacy	
	Number	%	Number	%	Number	%
Karur	401726	84.50	325318	66.90	727044	75.60
Pudukkottai	608776	85.56	501769	69.00	1110545	77.19
Tiruchirapalli	1087765	89.72	951216	76.87	2038981	83.23
Sivaganga	526304	87.92	433440	71.85	959744	79.85
Ramanathapuram	536487	87.81	442459	73.52	978946	80.72
Virudhunagar	760375	78.57	638413	65.51	1398788	72.02
Thoothukudi	703106	91.14	646591	81.33	1349697	86.16

Source: District Census Handbooks, 2011

It is observed from the above table that the total literacy rate varies from 72.02% in Virudhunagar district to 86.16% in Thoothukudi district. The male literacy rate also varies from 78.57% in Virudhunagar district to 91.14% in Thoothukudi district, whereas the female literacy rate too varies from 65.51% to 81.33% in these two districts.

11.1.2 Salient features of the link

The Cauvery (Kattalai) - Vaigai - Gundar link canal is envisaged to divert 2252 Mcum of waters from Cauvery river to the deficit areas lying towards south in Tamil Nadu. The link canal takes off from the Kattalai barrage with FSL 100.75 m, traverses a distance of 256.82km and terminates at Gundar river with FSL 72.048 m. The link canal traverses in Krishnarayapuram and Kulithalai taluks of Karur district, Srirangam taluk of Tiruchirapalli district, Kulathur, Pudukkottai, Iluppur and Tirumayam taluks of Pudukkottai district, Tirupattur, Kalayarkovil, Sivaganga and Manamadurai taluks of Sivaganga district, Tiruchuli and Kariapatti of Virudhunagar district. A total command of 448340 ha will be brought under irrigation from the link project. Besides, the link also envisages to provide domestic and industrial water supply benefits in the command to the tune of 79 Mcum and 139 Mcum respectively.

A total of 115 villages will be affected by land acquisition for the link canal. About 63 villages are being partly affected (both land and habitations) while only land pertaining to 52 villages come under acquisition. A population of 9400 as per 2011 census is likely to be affected due to the link project. The total land acquisition is 4938 ha which includes 107 ha of forest land.

11.1.3 Sample design and methodology

Total 115 villages (63 including habitations and 52 only land) are likely to be affected due to proposed land acquisition enroute the link alignment. The Socio-economic survey shall be carried out in all these affected villages. For assessment of present socio-economic status and community profile of the project area, the information from both primary and secondary sources shall be collected and used. The data from primary sources shall be collected through questionnaire. The village wise information shall be collected by the investigators from villagers and other sources in each village through a village

survey schedule covering different socio-economic parameters including demographic profile, land ownership, operational holdings, cropping pattern, agricultural practices, agriculture input pattern, animal husbandry, poultry, employment, income and expenditure, social infrastructure facilities, public health issues, gender, tourism, migration, education etc.

Like wise, the information at household level shall be collected through household interview schedule designed with specific questionnaires to facilitate interviewing the villagers in project affected as well project influenced villages, consisting the variables like family composition, education, housing facilities, drinking water, land holdings, irrigation facilities, sanitation, employment, income, occupation, migration, rehabilitation and resettlement options, rehabilitation and resettlement package, location preference, compensation, participation of the people in implementation of the project, willingness to pay by the users for assured water supply etc. Household level information shall be used to know the personal profile of the respondents and problems being faced/to be faced by them.

11.1.3.1 Selection of villages

The details of reach wise land acquisition, villages affected (with habitations and only land) are presented in **Annexure 11.1**. Socio-economic survey shall be carried out in all these villages.

11.1.3.2 Selection of households

All the households in the 115 villages likely to be affected due to the project shall be covered in the socio-economic survey.

11.1.4 Questionnaire

To collect the data on the present socio-economic status of the Project affected People, two types of questionnaire shall be developed: one for Socio-economic survey of the households and other for village level data and information.

11.1.5 Profile of the study area

As already discussed in earlier paras, the affected villages are located in Krishnarayapuram, Kulithalai and Thogamalai taluks of Karur district, Srirangam taluk of Tiruchirappalli district, Kulathur, Pudukkottai and Tirumayam talukas of Pudukkottai district, Sakkottai, Kallel, Tirupattur, Kalayarkovil, Sivaganga and Manamadurai taluks of Sivaganga district, Tiruchuli and Aruppukkottai taluks of Virudhunagar district in Tamil Nadu.

About 4938 ha area will come under land acquisition. While some habitations in 63 partly affected proper villages need to be rehabilitated; only land in the other partially affected 52 villages is to be compensated. District wise details are given in **Tables 11.4 to 11.8** respectively.

Table 11.4
Villages likely to be affected due to the
link canal in Karur district

Sl. No	Village	Taluk/block	Hab+ Land/ Only Land
1	Mayanur	Krishnarayapuram	Hab+Land
2	Thirukampuliyur		
3	Krishnarayapuram		
4	Mahadhanapuram		
5	Old Jayankondan		
6	Sithalavai		
7	Pillapalayam		
8	Karuppathur		
9	Vaiganallur	Kulithalai	Hab+Land
10	Sathiyamangalam		
11	Hiranyamangalam		
12	Panikampatti		
13	Inungur		
14	Nangavaram		
15	Neidalur	Thogamalai	Hab+Land
16	R T Malai		

In all the 16 villages in Karur district, both land and habitations will get affected due to the link canal. About 684 houses are likely to be affected in the district.

Table 11.5
Villages likely to be affected due to the link canal
in Tiruchirappalli district

Sl. No.	Village	Taluk/block	Hab+ Land/ Only Land
1	F. Keelaiyur	Srirangam	Hab+Land
2	Sanyasipatti		
3	Thathanur		
4	Nagamangalam		
5	Inampuduvadi		Only Land
6	Irapalli		

Out of six villages in Tiruchirappalli district, both land & houses (53 nos.) in four villages will get affected, while only land in other two villages will be acquired.

Table 11.6
Villages likely to be affected due to the link
canal in Pudukkottai district

Sl. No.	Village	Taluk/block	Hab+ Land/ Only Land
1	Kunnathur	Kulathur	Hab+Land
2	Singathakuruchi		Only Land
3	Mathur		
4	Mandaiyur		Hab+Land
5	Elamanam		Hab+Land
6	Chettipatti		Only Land
7	Puliyur		Hab+Land
8	Visalur		Only Land
9	Valiampatti		
10	Odugampatti		
11	Mangadevampatti		
12	Veerakudi		
13	Valamangalam		

14	Seemanur		Hab+Land
15	Senayakudi		
16	Vathanakurichi		
17	Vaithur		
18	Poongudi		
19	Vellanur	Pudukkottai	Only Land
20	Puthambur		
21	Nathampannai		
22	94 Nathampannai		
23	Kavinadumelavatt	Tirumayam	Hab+Land
24	Thekkattur		
25	Lembalakudi		
26	Ennapatti		
27	Arasampatti		
28	Tirumayam		
29	Ilanjavur		
30	Unaiyur		
31	Nedungudi		
32	Arimalam		
33	Pallatur		Only Land

Out of total 33 villages in Pudukkottai district, both land & houses (811 nos.) in 16 villages will get affected, while only land in the remaining 17 villages will be acquired.

Table 11.7
Villages likely to be affected due to the
link canal in Sivaganga district

Sl. No.	Village	Taluk/block	Hab+ Land/ Only Land
1	Kanadukattan	Sakkottai	Only Land
2	Kothamangalam		Hab+Land
3	Vadakudi		Only Land
4	Koothari		Hab+Land
5	Kottaiyur		Only Land
6	Venelgudi		Hab+Land
7	Sekkalakottai		Only Land
8	Kazhalanivasal		Hab+Land

9	Patharakudi	Kallel	Hab+Land
10	Ilangudi		Only Land
11	Nachiyarpuram		
12	Kambanur		Hab+Land
13	Veliyathur		Only Land
14	Kandaramanickam		Hab+Land
15	Keelapattamangalam		
16	Melapattamangalam		Only Land
17	Nariyangudi		
18	P. Karungulam	Tirupattur	Hab+Land
19	Vadamavali		Only Land
20	Chokkanathapuram	Kalayarkovil	Hab+Land
21	Kottakudi		
22	Ammanpatti		Hab+Land
23	Nagarampatti		
24	Kalayarmangalam		Only Land
25	Mangattendal		
26	MuthurVaniankudi		Hab+Land
27	Gouripatti		
28	SoorakkulamPudukk		Only Land
29	Natrarasonkottai		Only Land
30	Peraindaikulam		Hab+Land
31	PaiyurPillayavayal		
32	Allur	Only Land	
33	Madagupatti	Sivaganga	Only Land
34	Vaniangudi		Hab+Land
35	Arasani		
36	Panayur		
37	Pillur		Only Land
38	Kovanur		
39	Vazhuthani		
40	Periakottai	Manamadurai	
41	Pathinettankottai		Hab+Land
42	Muthanendal		
43	Kuvalaveli		
44	Vilathur		
45	Tamaraikudi		Only Land
46	Sendattiyendal		

Out of total 46 villages in Sivaganga district, both land & houses (760 nos.) in 22 villages will get affected, while only land in the remaining 24 villages will have to be acquired for the link canal.

Table 11.8
Villages likely to be affected due to the
link canal in Virudhunagar district

Sl. No.	Village	Taluk/block	Hab+ Land/ Only Land
1	Katanur	Tiruchuli	Hab+Land
2	Uluthimadai		
3	Naloor		
4	Panaikkudi		
5	Isali		Only Land
6	Melkumilangulam		
7	P. Pudupatty		
8	Manangattan	Aruppukottai	Only Land
9	Singanapuram		
10	Sooranur		
11	Esalimadai		
12	T. Chettikulam		
13	Melakanjirankulam		
14	Kudunbankulam		

Out of total 14 affected villages in Virudhunagar district, both land & houses (87 nos.) in five villages will get affected, while only land in the remaining nine villages will have to be acquired for the link canal.

Out of 115 villages identified for land acquisition, the houses affected from 63 villages are to be rehabilitated and resettled. The socio-economic survey shall be conducted as part of the proposed Comprehensive Environmental Impact Assessment (CEIA) studies of the project to be taken up in these villages to facilitate in-depth understanding of the present socio-economic status of people, perception of the people regarding implementation of the project and also their attitude towards Rehabilitation and Resettlement of the affected families, so that suitable Rehabilitation and Resettlement measures

can be suggested to minimise the adverse impact of the project on the project affected families. These villages have been identified based on the district wise information available on the website www.nirt.in. Some of these villages are not however, found in the Census data. Therefore, for the present DPR, the Socio-economic profile of the affected villages of the project area based on the available information in the District Census Hand Books-2011 is described in the following paragraphs.

11.1.5.1 Karur district

In Karur district, 16 villages are partly affected in terms of land and habitations. Out of these, the information in respect of only 12 villages is available in District Census Handbook-2011. The villages ‘Old Jayankondan’ and ‘Panikampatti’ could not be found, while the villages ‘Vaiganallur’ and ‘Neidalur’ are available in two parts (North & South) in the Census. Hence, the socio-economic profile is discussed based on the available information.

i) **Demography:** Total population of 12 villages is 84164 spread over 21793 households. Thus, the average number of members per household is about 4. Population of males in affected villages is 41727, while that of the females is 42437. The average sex ratio in the affected area is 1017. Details are given in **Table 11.9**.

Table 11.9
Demographic details in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	No. of House holds	Household Members			Sex Ratio
				Male	Female	Total	
1	Mayanur	Krishnara yapuram	1240	2254	2320	4574	1029
2	Thirukampuliyur		1708	3246	3241	6487	1002
3	Krishnarayapuram		2946	5326	5466	10792	1026
4	Mahadhanapuram		1409	2670	2726	5396	1021
5	Old Jayankondan		NA	NA	NA	NA	NA
6	Sithalavai		1004	1859	1847	3706	994
7	Pillapalayam		1206	2363	2308	4671	977
8	Karuppathur		1558	3038	2930	5968	964
9	Vaiganallur	Kulithalai	NA	NA	NA	NA	NA

10	Sathiyamangalam		1565	2985	2964	5949	993
11	Hiranyamangalam		1110	2081	2243	4324	1078
12	Panikampatti		NA	NA	NA	NA	NA
13	Inungur		2066	3893	3973	7866	1021
14	Nangavaram		4477	8614	9015	17629	1047
15	Neidalur	Thogamal	NA	NA	NA	NA	NA
16	R T Malai	ai	1504	3398	3404	6802	1002
	Total		21793	41727	42437	84164	1017

Source: District Census Hand Book -2011, Karur

ii) **Caste:** The number of Schedule Caste (SC) and Scheduled Tribe (ST) population in the project affected villages are 21415 and 29 respectively. It indicates that the ST population in the project area is negligible. Details are given in **Table 11.10**.

Table 11.10
SC and ST population in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	Population			
			SC	ST	Total	
1	Mayanur	Krishnara yapuram	1773	13	1790	
2	Thirukampuliyur		1044	-	1044	
3	Krishnarayapuram		2255	15	2270	
4	Mahadhanapuram		2087	-	2087	
5	Old Jayankondan		NA	NA	NA	
6	Sithalavai		779	-	779	
7	Pillapalayam		2029	1	2030	
8	Karuppathur		1059	-	1059	
9	Vaiganallur	Kulithalai	NA	NA	NA	
10	Sathiyamangalam		564	-	564	
11	Hiranyamangalam		1299	-	1299	
12	Panikampatti		NA	NA	NA	
13	Inungur		2462	-	2462	
14	Nangavaram		4833	-	4833	
15	Neidalur		Thogamal	NA	NA	NA
16	R T Malai		ai	1231	-	1231
	Total		21415	29	21444	

Source: District Census Hand Book -2011, Karur

iii) Literacy: The total literacy rate in the 12 affected villages varies from 53% to 72%. The male literacy rate is higher than that of female literacy rate. While the male literacy rate varies from 60% to 80%, the female literacy rate ranges from 46% to 65%. Details are given in **Table 11.11**

Table 11.11
Literates in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	Male literacy		Female literacy		Total literacy	
			No.	%	No.	%	No.	%
1	Mayanur	Krishnara yapuram	1809	80	1501	65	3310	72
2	Thirukampuliyur		2443	75	1900	59	4343	67
3	Krishnarayapuram		4058	76	3371	62	7429	69
4	Mahadhanapuram		2085	78	1738	64	3823	71
5	Old Jayankondan		NA	-	NA	-	NA	-
6	Sithalavai		1298	70	914	49	2212	60
7	Pillapalayam		1849	78	1514	66	3363	72
8	Karuppathur		2117	70	1478	50	3595	60
9	Vaiganallur	Kulithalai	NA	-	NA	-	NA	-
10	Sathiyamangalam		2102	70	1588	54	3690	62
11	Hiranyamangalam		1607	77	1396	62	3003	69
12	Panikampatti		NA	-	NA	-	NA	-
13	Inungur		2690	69	2052	52	4742	60
14	Nangavaram		6301	73	5170	57	11471	65
15	Neidalur	Thogamalai	NA	-	NA	-	NA	-
16	R T Malai		2042	60	1577	46	3619	53

Source: District Census Hand Book -2011, Karur

iv) Educational Facilities: All the 12 affected villages have at least three primary schools each. Also, all the villages except Hiranyamangalam have minimum one middle school each. The nearest middle school to Hirnyamangalam is available within 5 km. About nine villages have a secondary school as well. For the villages ‘Mahadhanapuram’, ‘Sithalavai’ and ‘Hiranyamangalam’, the secondary school is available within 5 km. Only one village ‘Sathiyamangalam’ has a college. ‘R.T. Malai’ has this facility within a

reach of 5 km. While the students from the villages ‘Thirukampuliyur’, ‘Krishnarayapuram’ and ‘Karuppathur’ are to commute between 5-10 km to reach a college, those from the villages ‘Mayanur’, ‘Mahadhanapuram’, ‘Sithalavai’, Pillalalayam, ‘Hiranyamangalam’, ‘Inungur’ and ‘Nangavaram’ are required to travel for more than 10 km to reach a college. Details are given in **Table 11.12**.

Table 11.12
Details of schools available in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	No. of Schools/ facility within			College/ within range
			Primary	Middle	Secondary	
1	Mayanur	Krishnarayapuram	5	2	2	>10 km
2	Thirukampuliyur		6	2	1	5-10 km
3	Krishnarayapuram		9	5	1	5-10 km
4	Mahadhanapuram		3	2	<5 km	>10 km
5	Old Jayankondan		NA	NA	NA	NA
6	Sithalavai		5	1	<5 km	>10 km
7	Pillalalayam		4	2	1	>10 km
8	Karuppathur		5	1	1	5-10 km
9	Vaiganallur	Kulithalai	NA	NA	NA	NA
10	Sathiyamangalam		6	4	2	2
11	Hiranyamangalam		7	<5 km	<5 km	>10 km
12	Panikampatti		NA	NA	NA	NA
13	Inungur		5	4	2	>10 km
14	Nangavaram		9	4	2	>10 km
15	Neidalur	Thogamalai	NA	NA	NA	NA
16	R T Malai		4	1	1	<5 km

Source: District Census Hand Book -2011, Karur

v) **Land use pattern:** It is seen from the available information that in the affected villages of the project area, about 48.2% is agriculture land, 0.2% is forest land and remaining 51.6% land belongs to other categories like permanent pastures, current and other fallows, culturable waste land etc. Details are given in **Table 11.13**.

Table 11.13
Land use pattern in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	Land use (ha)			
			Agricult	Forest	Others	Total
1	Mayanur	Krishnara yapuram	173.7	36.6	524.1	734.4
2	Thirukampuliyur		622.3	-	850.7	1473
3	Krishnarayapuram		NA	NA	NA	NA
4	Mahadhanapuram		425.6	-	268.6	694.2
5	Old Jayankondan		NA	NA	NA	NA
6	Sithalavai		1066	-	751	1817
7	Pillapalayam		620.9	-	470.7	1091.6
8	Karuppathur		739.9	-	1020.5	1760.4
9	Vaiganallur	Kulithalai	NA	NA	NA	NA
10	Sathiyamangalam		743.8	-	920.1	1663.9
11	Hiranyamangalam		833.6	-	467.5	1301.1
12	Panikampatti		NA	NA	NA	NA
13	Inungur		1306.2	-	788.8	2095
14	Nangavaram		NA	NA	NA	NA
15	Neidalur	Thogamal ai	NA	NA	NA	NA
16	R T Malai		713.1	-	1690.6	2403.7
	Total		7245.1	36.6	7752.6	15034.3
	Percentage		48.2	0.2	51.6	100

Source: District Census Hand Book -2011, Karur

vi) Sources of water: All the 12 villages have tap water facility. Wells are also available in all these villages. Hand pumps are also available in 9 of the 12 villages except ‘Mayanur’, Pillapalayam’ and ‘Karuppathur’. In addition, all the 12 villages have tube/bore well facility as well. All these sources of water are being used by the villagers for other purposes also like sanitation, washing utensils, bathing of cattle etc. Details are given in **Table 11.14**.

Table 11.14
Sources of water in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	Source of Water for Drinking and Other			
			Tap	Hand pump	Wells	Tube/ Bore well
1	Mayanur	Krishnara yapuram	✓	X	✓	✓
2	Thirukampuliyur		✓	✓	✓	✓
3	Krishnarayapuram		✓	✓	✓	✓
4	Mahadhanapuram		✓	✓	✓	✓
5	Old Jayankondan		NA	NA	NA	NA
6	Sithalavai		✓	✓	✓	✓
7	Pillapalayam		✓	X	✓	✓
8	Karuppathur		✓	X	✓	✓
9	Vaiganallur	Kulithalai	NA	NA	NA	NA
10	Sathiyamangalam		✓	✓	✓	✓
11	Hiranyamangalam		✓	✓	✓	✓
12	Panikampatti		NA	NA	NA	NA
13	Inungur		✓	✓	✓	✓
14	Nangavaram		✓	✓	✓	✓
15	Neidalur	Thogamalai	NA	NA	NA	NA
16	R T Malai		✓	✓	✓	✓

Source: District Census Hand Book -2011, Karur

vii) Power Supply: Power supply in ten villages except Krishnarayapuram and Sathiyamangalam is available for domestic, agricultural, commercial and all other purposes. In Krishnarayapuram, power supply is not available for other than domestic, agricultural and commercial purposes while in Sathiyamangalam, the same is available for domestic and agricultural purposes only. Details are given in **Table 11.15**.

Table 11.15
Power supply in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	Power Supply for			
			Domestic	Agricul tural	Commerci al	All Purpose
1	Mayanur	Krishnara yapuram	✓	✓	✓	✓
2	Thirukampuliyur		✓	✓	✓	✓
3	Krishnarayapuram		✓	✓	✓	X
4	Mahadhanapuram		✓	✓	✓	✓
5	Old Jayankondan		NA	NA	NA	NA
6	Sithalavai		✓	✓	✓	✓
7	Pillapalayam		✓	✓	✓	✓
8	Karuppathur		✓	✓	✓	✓
9	Vaiganallur	Kulithalai	NA	NA	NA	NA
10	Sathiyamangalam		✓	✓	X	X
11	Hiranyamangalam		✓	✓	✓	✓
12	Panikampatti		NA	NA	NA	NA
13	Inungur		✓	✓	✓	✓
14	Nangavaram		✓	✓	✓	✓
15	Neidalur	Thogamal ai	NA	NA	NA	NA
16	R T Malai		✓	✓	✓	✓

Source: District Census Hand Book -2011, Karur

viii) Health facilities: Primary Health Centre/Sub-Centres are available in all the 12 villages. Maternity and Child Welfare Centres are also available in nine villages and for the remaining three villages, this facility is within a reach of 5 km. Allopathic Hospital facilities are also available in ‘Krishnarayapuram’ and ‘Nangavaram’. This facility is available for two villages ‘Mayanur’ and ‘Thirukampuliyur’ within 5 km, whereas three villages ‘Mahadhanapuram’, ‘Sithalavai’ and ‘Sathiyamangalam’ have to commute for between 5-10 km to avail the facility. The facility is more than 10 km away for the remaining five villages. Details are given in **Table 11.16**.

Table 11.16
Hospitals in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	Medical Facilities Available		
			Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre/Sub Centre
1	Mayanur	Krishnara yapuram	< 5 km	1	1
2	Thirukampuliyur		< 5 km	< 5 km	1
3	Krishnarayapuram		2	1	1
4	Mahadhanapuram		5-10km	1	1
5	Old Jayankondan		NA	NA	NA
6	Sithalavai		5-10km	< 5 km	1
7	Pillapalayam		>10 km	< 5 km	1
8	Karuppathur		>10 km	1	1
9	Vaiganallur	Kulithalai	NA	NA	NA
10	Sathiyamangalam		5-10 km	1	2
11	Hiranyamangalam		>10km	1	3
12	Panikampatti		NA	NA	NA
13	Inungur		>10km	1	2
14	Nangavaram		1	1	1
15	Neidalur	Thogamalai	NA	NA	NA
16	R T Malai		>10 km	1	1

Source: District Census Hand Book -2011, Karur

ix) Post and telephones: All the villages except 'Pillapalayam' have post/sub-post offices. Such facility is within 5 km reach for 'Pillapalayam'. Like wise, except the villages 'Pillapalayam' and 'Karuppathur' all other villages have Telephone (Landline) facility. In these three villages, the facility of telephone is of course available within 5 km. Details are given in **Table 11.17**.

Table 11.17
Post office and telephone facilities in the
affected villages in Karur district

Sl. No.	Village	Taluk/ block	Facilities available	
			Post /Sub Post office	Telephone
1	Mayanur	Krishnara yapuram	✓	✓
2	Thirukampuliyur		✓	✓
3	Krishnarayapuram		✓	✓
4	Mahadhanapuram		✓	✓
5	Old Jayankondan		NA	NA
6	Sithalavai		✓	✓
7	Pillapalayam		<5 km	<5 km
8	Karuppathur		✓	<5 km
9	Vaiganallur	Kulithalai	NA	NA
10	Sathiyamangalam		✓	✓
11	Hiranyamangalam		✓	✓
12	Panikampatti		NA	NA
13	Inungur		✓	✓
14	Nangavaram		✓	✓
15	Neidalur	Thogamalai	NA	NA
16	R T Malai		✓	✓

Source: District Census Hand Book -2011, Karur

x) Transport facility: Transport facility including plying of private/ government buses is available in all the 12 villages. ‘Mayanur’ and ‘Mahadhanapuram’ have railway stations as well. The nearest railway station is within 5 km to three villages, between 5-10 km reach for 5 villages and more than 10 km for the remaining two villages. While four villages are connected to National Highway (NH), two more villages are connected to State Highway (SH) and one village is connected to major district road (MDR). Also, NH is within 5 km to one village and between 5-10 km from two other villages. Details are given in **Table 11.18**.

Table 11.18
Transport facilities in the affected villages in Karur district

Sl. No.	Village	Taluk/ block	Transport facilities			
			Bus (Privat/ Public)	Railway	Connected to	Nearest town
1	Mayanur	Krishnara yapuram	✓	✓	NH	Krishnara yapuram
2	Thirukampuliyur		✓	< 5 km	NH	
3	Krishnarayapuram		✓	5-10 km	NA	
4	Mahadhanapuram		✓	✓	NH	
5	Old Jayankondan		NA	NA	NA	NA
6	Sithalavai		✓	5-10 km	NH	P.J.Chola puram
7	Pillapalayam		✓	<5 km	NH < 5 km	
8	Karuppathur		✓	5-10 km	NH 5-10 km	Kulithalai
9	Vaiganallur	Kulithalai	NA	NA	NA	NA
10	Sathiyamangalam		✓	5-10 km	NH 5-10 km	Maruthur
11	Hiranyamangalam		✓	>10 km	SH	
12	Panikampatti		NA	NA	NA	NA
13	Inungur		✓	5-10 km	MDR	Nangava ram
14	Nangavaram		✓	< 5 km	NA	
15	Neidalur	Thogamalai	NA	NA	NA	NA
16	R T Malai		✓	>10 km	SH	Nangava ram

Source: District Census Hand Book -2011, Karur

xi) Banking and credit societies facilities: Four villages viz. ‘Mayanur’, ‘Mahadhanapuram’, ‘Krishnarayapuram’ and ‘Nangavaram’ have at least one national/commercial bank. While six other villages have this facility within 5 km, two villages have a bank within a reach of 5-10 km. There are agricultural credit societies in six villages. Four other villages have this facility within 5 km, while the remaining two villages have to commute between 5-10 km to avail the facility. Two villages viz. ‘Mayanur’ and ‘Krishnarayapuram’ have ATMs. Two villages have this facility within 5 km, while two other villages have the same within 5-10 km. The people of the remaining six villages have to travel for more than 10 km to avail ATM facility. Details are given in **Table 11.19**.

Table 11.19
Banking and credit society facilities in the
affected villages in Karur district

Sl. No.	Village	Taluk/ block	Banking / Credit Society Facilities		
			Banking	Agri. Credit Society	ATMs
1	Mayanur	Krishnara yapuram	✓	< 5 km	> 10 km
2	Thirukampuliyur		< 5 km	✓	< 5 km
3	Krishnarayapuram		✓	✓	✓
4	Mahadhanapuram		✓	✓	> 10 km
5	Old Jayankondan		NA	NA	NA
6	Sithalavai		<5 km	5-10 km	>10 km
7	Pillalalayam		<5 km	<5 km	5-10 km
8	Karuppathur		5-10 km	5-10 km	>10 km
9	Vaiganallur	Kulithalai	NA	NA	NA
10	Sathiyamangalam		5-10 km	<5 km	5-10 km
11	Hiranyamangalam		<5 km	✓	>10 km
12	Panikampatti		NA	NA	NA
13	Inungur		<5 km	✓	<5 km
14	Nangavaram		✓	✓	✓
15	Neidalur	Thogamalai	NA	NA	NA
16	R T Malai		<5 km	<5 km	>10 km

Source: District Census Hand Book -2011, Karur

11.1.5.2 Tiruchirapalli district

In Tiruchirappalli district, four villages are partly affected for both land and habitations. Out of these, information for 3 villages is available in District Census Handbook-2011. The village ‘Sanyasipatti’ could not be found in the Census. Hence, the socio-economic profile is discussed based on the available information.

i) **Demography:** Total population of all the 3 villages is 12518 spread over 2993 households. Thus, the average number of members per household is about

4. Population of males in affected villages is 6145, while that of the females is 6302. The average sex ratio in the affected villages is 1037. Details are given in **Table 11.20**.

Table 11.20
Demographic details in the affected villages in Tiruchirappalli district

Sl. No.	Village	Taluk/ block	No. of House Holds	Household Members			Sex Ratio (no. of Females / 1000 Males)
				Male	Female	Total	
1	F. Keelaiyur	Srirangam	940	2207	2262	4469	1025
2	Sanyasipatti		NA	NA	NA	NA	NA
3	Thathanur		492	1107	1157	2264	1045
4	Nagamangalam		1561	2831	2954	5785	1043
Total			2993	6145	6373	12518	1037

Source: District Census Hand Book -2011, Tiruchirappalli

ii) **Caste:** The number of Schedule Caste (SC) and Scheduled Tribe (ST) population in the project affected villages are 1999 and 427 respectively. Details are given in **Table 11.21**.

Table 11.21
SC and ST Population in the affected villages in Tiruchirappalli district

Sl. No.	Village	Taluk/ block	Population		
			SC	ST	Total
1	F. Keelaiyur	Srirangam	779	1	780
2	Sanyasipatti		NA	NA	NA
3	Thathanur		227	0	227
4	Nagamangalam		993	426	1419
Total			1999	427	2426

Source: District Census Hand Book -2011, Tiruchirappalli

iii) **Literacy:** The total literacy rate in the three affected villages vary from 59% to 67%. The male literacy rate is higher than that of female literacy rate, in all the villages. While the male literacy rate varies from 71% to 73%, the female literacy rate ranges from 47% to 61%. Details are given in **Table 11.22**.

Table 11.22
Literacy rate in the affected villages in Tiruchirappalli district

Sl. No.	Village	Taluk/block	Male literacy		Female literacy		Total literacy	
			Number	%	Number	%	Number	%
1	F. Keelaiyur	Srirangam	1664	75	1261	56	2925	65
2	Sanyasipatti		NA	-	NA	-	NA	-
3	Thathanur		784	71	549	47	1333	59
4	Nagamangalam		2063	73	1810	61	3873	67

Source: District Census Hand Book -2011, Tiruchirappalli

iv) **Educational facilities:** There is at least a primary school in all the three villages. Villages ‘F. Keelaiyur’ and ‘Nagamangalam’ have middle schools while this facility for Thathanur village is available within 5 km. Secondary school is within the range of 5 km for ‘Thathanur’ and ‘Nagamangalam’ and for ‘F. Keelaiyur’, it is at a distance of 5-10 km. College education is available for Nagamangalam inhabitants within a range of 5-10 km, while students from other two villages have to go beyond 10 km to reach a college. Details are given in **Table 11.23**.

Table 11.23
Details of schools available in the affected villages in Tiruchirappalli district

Sl. No.	Village	Taluk/block	No. of Schools/facility within			College
			Primary	Middle	Secondary	
1	F. Keelaiyur	Srirangam	5	2	5-10 km	>10 km
2	Sanyasipatti		NA	NA	NA	NA
3	Thathanur		1	<5 km	<5 km	>10 km
4	Nagamangalam		7	1	<5 km	5-10 km

Source: District Census Hand Book -2011, Tiruchirappalli

v) **Land use pattern:** It is observed from the available information on land use in the affected villages, that agricultural land constitutes 37%, forest accounts for about 9% and the remaining 54% land belongs to other categories like permanent pastures, current and other fallows, culturable waste land etc. Details are given in **Table 11.24**.

Table 11.24
Land use pattern in the affected villages in Tiruchirappalli district

Sl. No.	Village	Taluk/block	Land use (ha)			
			Agriculture	Forest	Others	Total
1	F. Keelaiyur	Srirangam	509.3	0	731.3	1240.6
2	Sanyasipatti		NA	NA	NA	NA
3	Thathanur		267.9	200	396.6	864.5
4	Nagamangalam		NA	NA	NA	NA
Total			777.2	200	1127.9	2105.1
Percentage			36.9	9.5	53.6	100

Source: District Census Hand Book -2011, Tiruchirappalli

vi) **Sources of water:** All the three villages have tap water facility. Wells are also available in all these villages. Hand pumps too are available in each of the villages. Further, all the three villages are supplemented with tube/bore well facility. All these sources of water are being used by the villagers for other purposes also like sanitation, washing utensils, bathing of cattle etc. Details are given in **Table 11.25**.

Table 11.25
Sources of water in the affected villages in Tiruchirappalli district

Sl. No.	Village	Taluk/block	Source of water for drinking			
			Tap	Wells	Hand pump	Tube/Bore well
1	F. Keelaiyur	Srirangam	✓	✓	✓	✓
2	Sanyasipatti		NA	NA	NA	NA
3	Thathanur		✓	✓	✓	✓
4	Nagamangalam		✓	✓	✓	✓

Source: District Census Hand Book -2011, Tiruchirappalli

vii) Power supply: All the villages have power supply for all purposes viz. domestic, agricultural, commercial and other purposes. Details are given in **Table 11.26**.

Table 11.26
Power supply in the affected villages in Tiruchirappalli district

Sl. No.	Village	Taluk/block	Power supply for			
			Domestic	Agricultural	Other Purpose	All Purpose
1	F. Keelaiyur	Srirangam	✓	✓	✓	✓
2	Sanyasipatti		NA	NA	NA	NA
3	Thathanur		✓	✓	✓	X
4	Nagamangala		✓	✓	✓	✓

Source: District Census Hand Book -2011, Tiruchirappalli

viii) Health facilities: All the villages have at least one Primary Health Centre/ Sub Centre. Nagamangalam village has a Maternity and Child Welfare Centre and this facility is available within a range of 5-10 km for other two villages. Nagamangalam also has an Allopathic Hospital. Whereas this facility for F. Keelaiyur village is available at a distance of 5-10 km and for Thathanur village it is beyond 10 km. Details are given in **Table 11.27**.

Table 11.27
Hospitals in the affected villages in Tiruchirappalli district

Sl. No.	Village	Taluk/block	Medical facilities available		
			Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre/Sub Centre
1	F. Keelaiyur	Srirangam	5-10 km	5-10 km	1
2	Sanyasipatti		NA	NA	NA
3	Thathanur		>10 km	5-10 km	2
4	Nagamangalam		1	1	1

Source: District Census Hand Book -2011, Tiruchirappalli

ix) Post and Telephones: All the three villages have telephone facilities. While F. Keelaiyur and Nagamangalam villages have a post office each, for

Thathanur the facility is available within 5 km distance. Details are given in **Table 11.28**.

Table 11.28
Post Office and telephone facilities in the affected villages in Tiruchirapalli district

Sl. No.	Village	Taluk/block	Facilities available (Within)	
			Post Office	Telephone
1	F. Keelaiyur	Srirangam	✓	✓
2	Sanyasipatti		NA	NA
3	Thathanur		<5 km	✓
4	Nagamangalam		✓	✓

Source: District Census Hand Book -2011, Tiruchirappalli

x) Transport facility: Transport facility including plying of private/ government buses is available for all the three villages. The nearest railway station is within 5 km for F. Keelaiyur village while it is more than 10 km away to other two villages. F. Keelaiyur is connected to State Highway while Thathanur is connected to Other District Roads (ODR). Manapparai is the nearest town to all the three villages. Details are given in **Table 11.29**.

Table 11.29
Transport facilities in the affected villages in Tiruchirapalli district

Sl. No.	Village	Taluk/block	Transport facilities			
			Bus (Private /Public)	Railway	Connected to	Nearest town
1	F. Keelaiyur	Sriran gam	✓	5-10 km	SH	Manapparai
2	Sanyasipatti		NA	NA	NA	NA
3	Thathanur		✓	> 10 km	ODR	Manapparai
4	Nagamangalam		✓	> 10 km	NA	Manapparai

Source: District Census Hand Book -2011, Tiruchirappalli

xi) Banking and credit societies facilities: Nagamangalam has a bank, while this facility is at a distance of 5-10 km for F. Keelaiyur and beyond 10 km for Thathanur. F. Keelaiyur is endowed with an Agricultural Credit Society, whereas Thathanur has it at a distance of 5-10 km. F. Keelaiyur has access to

ATM within a range of 5 -10 km, while Thathanur villagers have to commute beyond 10 km to avail this facility. Details are given in **Table 11.30**.

Table 11.30
Banking and credit society facilities in the affected villages in Tiruchirapalli district

Sl. No.	Village	Taluk/block	Banking / Credit Society Facilities		
			Banking	Agri. Credit Society	ATMs
1	F. Keelaiyur	Srirangam	5-10 km	✓	5-10 km
2	Sanyasipatti		NA	NA	NA
3	Thathanur		>10 km	5-10 km	>10 km
4	Nagamangalam		✓	X	NA

Source: District Census Hand Book -2011, Tiruchirapalli

11.1.5.3 Pudukkottai district

In Pudukkottai district, 16 villages are partly affected for both land and habitations. Out of these, information for 13 villages is available in District Census Handbook-2011. The villages ‘Elamanam’, ‘94Nathampannai’ and ‘Kavinadumelavattam’ could not be found in the Census. Hence, the socio-economic profile is discussed based on the available information.

i) Demography: Total population of all the 13 villages is 60560 spread over 14794 households. Thus, the average number of members per household is about 4. Population of males in affected villages is 30305, while that of the females is 30255. The average sex ratio in the affected area is almost even at 998. Details are given in **Table 11.31**.

Table 11.31
Demographic details in the affected villages in Pudukkottai district

Sl. No.	Village	Taluk/ block	No. of House Holds	Household Members			Sex Ratio (no. of Females / 1000 Males)
				Male	Female	Total	
1	Kunnathur	Kulathur	706	1683	1616	3299	960
2	Mandaiyur		854	1696	1743	3439	1028
3	Elamanam		NA	NA	NA	NA	NA
4	Puliyur		862	1816	1771	3587	975
5	Vathanakurichi		520	1128	1182	2310	1048
6	Vaithur		817	1669	1676	3345	1004
7	Puthambur	Pudukkottai	716	1580	1452	3032	919
8	Nathampannai		2261	4454	4461	8915	1002
9	94 Nathampannai		NA	NA	NA	NA	NA
10	Kavinadumelavattam		NA	NA	NA	NA	NA
11	Thekkattur	Tirumayam	1932	3845	3787	7632	985
12	Lembalakudi		1090	2257	2282	4539	1011
13	Ennapatti		109	260	230	490	885
14	Tirumayam		2225	4445	4543	8988	1022
15	Unaiyur		518	1007	1029	2036	1022
16	Arimalam		2184	4465	4483	8948	1004
Total			14794	30305	30255	60560	998

Source: District Census Hand Book -2011, Pudukkottai

ii) Caste: The number of Schedule Caste (SC) and Scheduled Tribe (ST) population in the affected villages in the district are 10004 and 34 respectively, which indicates negligible presence of tribal community in the project area. Details are given in **Table 11.32**.

Table 11.32
SC and ST Population in the affected villages
in Pudukkottai district

Sl. No.	Village	Taluk/block	Population		
			SC	ST	Total
1	Kunnathur	Kulathur	644	-	644
2	Mandaiyur		191	-	191
3	Elamanam		NA	NA	NA
4	Puliyur		234	-	234
5	Vathanakurichi		547	-	547
6	Vaithur		181	-	181
7	Puthambur	Pudukkottai	937	1	938
8	Nathampannai		1535	9	1544
9	94 Nathampannai		NA	NA	NA
10	Kavinadumelavattam		NA	NA	NA
11	Thekkattur	Tirumayam	867	1	868
12	Lembalakudi		678	15	693
13	Ennapatti		207	-	207
14	Tirumayam		2995	8	3003
15	Unaiyur		330	-	330
16	Arimalam		658	-	658
		Total	10004	34	10038

Source: District Census Hand Book -2011, Pudukkottai

iii) Literacy: The total literacy rate in the affected villages varies from 59% to 76%. The male literacy rate is higher than that of female literacy rate. While the male literacy rate varies from 64% to 81%, the female literacy rate ranges from 53% to 72%. Details are given in **Table 11.33**.

Table 11.33
Literacy rate in the affected villages in Pudukkottai district

Sl. No.	Village	Taluk/block	Male		Female		Total	
			Number	%	Number	%	Number	%
1	Kunnathur	Kulathur	1322	79	1070	66	2392	73
2	Mandaiyur		1221	72	1020	59	2241	65
3	Elamanam		NA	NA	NA	NA	NA	NA

4	Puliyur		1171	64	938	53	2109	59
5	Vathanakurichi		849	75	732	62	1581	68
6	Vaithur		1292	77	999	60	2291	68
7	Puthambur	Pudukkottai	1215	77	869	60	2084	69
8	Nathampannai		3617	81	3194	72	6811	76
9	94 Nathampannai		NA	NA	NA	NA	NA	NA
10	Kavinadumelavattam		NA	NA	NA	NA	NA	NA
11	Thekkattur	Tirumayam	3019	79	2310	61	5329	70
12	Lembalakudi		1681	74	1332	58	3013	66
13	Ennapatti		209	80	142	62	351	72
14	Tirumayam		3564	80	3026	67	6590	73
15	Unaiyur		773	77	632	61	1405	69
16	Arimalam		3518	79	2846	63	6364	71

Source: District Census Hand Book -2011, Pudukkottai

iv) Educational facilities: All the 13 villages have at least one primary school each. All the villages except Ennapatti have minimum one middle school each. For Ennapatti, a middle school is available within 5 km. While a secondary school is also available in 11 out of 13 villages, Ennapatti has it within 5 km distance and Vaithur has it at a distance between 5-10 km. Two villages Thekkatur and Tirumayam have a college too. While five villages have a college within 5 km, five other villages have it at a range of 5-10 km and only Vaithur has a college beyond 10 km distance. Details are given in **Table 11.34**.

Table 11.34

Details of schools available in the affected villages in Pudukkottai district

Sl. No.	Village	Taluk/block	Number of Schools			College
			Primary	Middle	Secondary	
1	Kunnathur	Kulathur	2	2	2	5 - 10 km
2	Mandaiyur		5	1	1	<5 km
3	Elamanam		NA	NA	NA	NA
4	Puliyur		4	1	1	5 - 10 km
5	Vathanakurichi		2	2	1	5 - 10 km
6	Vaithur		2	1	5-10 km	>10 km
7	Puthambur	Pudukkottai	5	1	1	5-10 km
8	Nathampannai		6	2	2	<5 km
9	94 Nathampannai		NA	NA	NA	NA

10	Kavinadumelavattam		NA	NA	NA	NA
11	Thekkattur	Tirumayam	8	4	2	1
12	Lembalakudi		6	1	1	<5 km
13	Ennapatti		1	<5 km	<5 km	<5 km
14	Tirumayam		9	3	2	1
15	Unaiyur		1	1	1	<5 km
16	Arimalam		6	2	2	5-10 km

Source: District Census Hand Book -2011, Pudukkottai

v) **Land use pattern:** It is observed from the available information on land use in the affected villages, that agricultural land constitutes to only 19%, forest accounts for just 3% and the remaining 78% land belongs to other categories like permanent pastures, current and other fallows, culturable waste land etc. Details are given in **Table 11.35**.

Table 11.35
Land use pattern in the affected villages in Pudukkottai district

Sl. No.	Village	Taluk/block	Land use (ha)			
			Agriculture	Forest	Others	Total
1	Kunnathur	Kulathur	260.8	-	2335.8	2596.6
2	Mandaiyur		286.8	-	1727.5	2014.3
3	Elamanam		NA	NA	NA	NA
4	Puliyur		736.4	190	684.9	1611.3
5	Vathanakurichi		243.9	-	417.5	661.4
6	Vaithur		106	-	950.1	1056.1
7	Puthambur	Pudukkottai	196.8	2	841.2	1040
8	Nathampannai		NA	NA	NA	NA
9	94 Nathampannai		NA	NA	NA	NA
10	Kavinadumelavattam		NA	NA	NA	NA
11	Thekkattur	Tirumayam	538.6	79.8	1546.4	2164.8
12	Lembalakudi		228.3	-	1884.0	2112.3
13	Ennapatti		38.1	-	97.6	135.7
14	Tirumayam		193.2	-	1334.0	1527.2
15	Unaiyur		147.9	145.7	387.1	680.7
16	Arimalam		NA	NA	NA	NA
		Total	2976.8	417.5	12206.1	15600.4
		Percentage	19.1	2.7	78.2	100.0

Source: District Census Hand Book -2011, Pudukkottai

vi) Sources of water: All the villages have tap facility. Ten out of 13 villages have all the four sources of water viz. Tap, well, hand pump & tube/bore well for drinking and other purposes. Vathanakurichi has only tap & well facility whereas Ennapatti has only tap facility and Unaiyur has both tap & tube/bore well facility. All these sources of water are being used by the villagers for other purposes also like sanitation, washing utensils, bathing of cattle etc. Details are given in **Table 11.36**.

Table 11.36
Sources of water in the affected villages in Pudukkottai district

Sl. No.	Village	Taluk/block	Source of Water for Drinking and Other Purposes			
			Tap	Hand pump	Wells	Tube/Bore well
1	Kunnathur	Kulathur	✓	✓	✓	✓
2	Mandaiyur		✓	✓	✓	✓
3	Elamanam		NA	NA	NA	NA
4	Puliyur		✓	✓	✓	✓
5	Vathanakurichi		✓	X	✓	X
6	Vaithur		✓	✓	✓	✓
7	Puthambur	Pudukkottai	✓	✓	✓	✓
8	Nathampannai		✓	✓	✓	✓
9	94 Nathampannai		NA	NA	NA	NA
10	Kavinadumelavattam		NA	NA	NA	NA
11	Thekkattur	Tirumayam	✓	✓	✓	✓
12	Lembalakudi		✓	✓	✓	✓
13	Ennapatti		✓	X	X	X
14	Tirumayam		✓	✓	✓	✓
15	Unaiyur		✓	X	X	✓
16	Arimalam		✓	✓	✓	✓

Source: District Census Hand Book -2011, Pudukkottai

vii) Power supply: Power supply in ten out of 13 villages is available for domestic, agricultural, commercial and all other purposes. While Kunnathur and Puliyur have power supply for domestic and agricultural purposes, Vathanakurichi doesn't have power supply for all purposes other than commercial purpose. Details are given in **Table 11.37**.

Table 11.37
Power Supply in the affected villages in Pudukkottai district

Sl. No.	Village	Taluk/block	Power Supply for			
			Domestic	Agricultural	Commercial	All Purpose
1	Kunnathur	Kulathur	✓	✓	X	X
2	Mandaiyur		✓	✓	✓	✓
3	Elamanam		NA	NA	NA	NA
4	Puliyur		✓	✓	X	X
5	Vathanakurichi		✓	✓	X	✓
6	Vaithur		✓	✓	✓	✓
7	Puthambur	Pudukkottai	✓	✓	✓	✓
8	Nathampannai		✓	✓	✓	✓
9	94 Nathampannai		NA	NA	NA	NA
10	Kavinadumelavattam		NA	NA	NA	NA
11	Thekkattur	Tirumayam	✓	✓	✓	✓
12	Lembalakudi		✓	✓	✓	✓
13	Ennapatti		✓	✓	✓	✓
14	Tirumayam		✓	✓	✓	✓
15	Unaiyur		✓	✓	✓	✓
16	Arimalam		✓	✓	✓	✓

Source: District Census Hand Book -2011, Pudukkottai

viii) Health facilities: Among the villages for which information is available, all the villages except Ennapatti have at least one Primary Health Centre/ Sub Centre. For Ennapatti, the nearest PHC/PHSC is within 5 km. Further, four villages have minimum one Maternity and Child Welfare Centre, while four other villages have this facility within 5 km and four more villages have the facility at a distance between 5-10 km. Only Arimalam has an Allopathic Hospital. This facility is available within 5 km for three villages, between 5 -10 km for four villages and beyond 10 km for another four villages. Details are given in **Table 11.38**.

Table 11.38**Details of hospitals in the affected villages in Pudukkottai district**

Sl. No.	Village	Taluk/block	Medical Facilities Available		
			Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre/ Sub-Centre
1	Kunnathur	Kulathur	>10 km	<5 km	1
2	Mandaiyur		>10 km	1	2
3	Elamanam		NA	NA	NA
4	Puliyur		5-10 km	5-10 km	1
5	Vathanakurichi		>10 km	1	2
6	Vaithur		>10 km	<5 km	1
7	Puthambur	Pudukkottai	5-10 km	5-10 km	1
8	Nathampannai		NA	NA	NA
9	94 Nathampannai		NA	NA	NA
10	Kavinadumelavattam		NA	NA	NA
11	Thekkattur	Tirumayam	5-10 km	5-10 km	3
12	Lembalakudi		5-10 km	<5 km	1
13	Ennapatti		<5 km	<5 km	<5 km
14	Tirumayam		<5 km	1	1
15	Unaiyur		<5 km	5-10 km	1
16	Arimalam		2	2	1

Source: District Census Hand Book -2011 Pudukkottai

ix) Post and telephones: Eleven out of 13 villages both post office and Telephone facilities. The remaining two villages also do have telephone facility. While for Ennapatti, a post office is within 5 km, for Vathanakurichi, the same is at a distance of 5-10 km. Details are given in **Table 11.39**.

Table 11.39
Post office and Telephone facilities in the affected
villages in Pudukkottai district

Sl. No.	Village	Taluk/block	Facilities available (Within one km radius)	
			Post/Sub-Post Office	Telephone
1	Kunnathur	Kulathur	✓	✓
2	Mandaiyur		✓	✓
3	Elamanam		NA	NA
4	Puliyur		✓	✓
5	Vathanakurichi		5-10 km	✓
6	Vaithur		✓	✓
7	Puthambur		✓	✓
8	Nathampannai	Pudukkottai	✓	✓
9	94 Nathampannai		NA	NA
10	Kavinadumelavattam		NA	NA
11	Thekkattur		✓	✓
12	Lembalakudi	✓	✓	
13	Ennapatti	Tirumayam	<5 km	✓
14	Tirumayam		✓	✓
15	Unaiyur		✓	✓
16	Arimalam		✓	✓

Source: District Census Hand Book -2011 Pudukkottai

x) Transport facility: Transport facility including plying of private/ government buses is available in all the villages. Tirumayam has a railway station. The nearest railway station within 5 km for Nathampannai, in the range of 5-10 km for seven other villages and is more than 10 km away to the remaining four villages. As many as six villages are connected to National Highways and two villages are connected to major district roads (MDR). Besides, while Kunnathur is within 5 km to NH, two other villages are within similar range to a MDR. Details are given in **Table 11.40**.

Table 11.40
Transport facilities in the affected villages in Pudukkottai district

Sl. No.	Village	Taluk/block	Transport facilities			
			Bus (Private/Public)	Railway	Connected to	Nearest town
1	Kunnathur	Kulathur	✓	>10 km	NH <5 km	Tiruchirappalli
2	Mandaiyur		✓	5-10 km	NH	Keeranur
3	Elamanam					
4	Puliyur		✓	5-10 km	MDR	Keeranur
5	Vathanakurichi		✓	>10 km	MDR<5 km	Keeranur
6	Vaithur		✓	>10 km	MDR<5 km	Pudukkottai
7	Puthambur	Pudukkottai	✓	5-10 km	MDR	
8	Nathampannai		✓	<5 km	NA	Pudukkottai
9	94 Nathampannai					
10	Kavinadumelavattam					
11	Thekkattur	Tirumayam	✓	5-10 km	NH	Arimalam
12	Lembalakudi		✓	5-10 km	NH	Pudukkottai
13	Ennapatti		✓	5-10 km	NH	Pudukkottai
14	Tirumayam		✓	✓	NH	Pudukkottai
15	Unaiyur		✓	5-10 km	NH	Pudukkottai
16	Arimalam		✓	>10 km	NA	Arimalam

Source: District Census Hand Book -2011, Pudukkottai

xi) Banking and credit societies facilities: Three villages, Nathampannai, Tirumayam and Arimalam have banks/ATM as well as Agriculture credit societies. Among other villages, three have bank facility within 5 km reach while seven have bank facility at a distance of 5-10 km. Three villages, Kunnathur, Puliyur and Puthambur do have Agriculture credit societies. This facility is available within 5 km for three villages, within 5-10 km for three more villages and more than 10 km for only one village. and Banks are not available in any of the affected villages. In order to avail ATM facility, people in five villages have to commute for 5 to 10 km while people in another two villages have to travel for more than 10 km, while ATM is available to three more villages within a reach of 5 km. Details are given in **Table 11.41**.

Table 11.41
Banking and credit society facilities in the
affected villages in Pudukkottai district

Sl. No.	Village	Taluk/block	Banking / Credit Society Facilities Available (Within Range in km)		
			Banking	Agri. Credit Society	ATMs
1	Kunnathur	Kulathur	5-10 km	✓	5-10 km
2	Mandaiyur		<5 km	<5 km	<5 km
3	Elamanam		NA	NA	NA
4	Puliyur		5-10 km	✓	5-10 km
5	Vathanakurichi		<5 km	<5 km	>10 km
6	Vaithur		5-10 km	>10 km	>10 km
7	Puthambur	Pudukkottai	5-10 km	✓	5-10 km
8	Nathampannai		✓	✓	✓
9	94 Nathampannai		NA	NA	NA
10	Kavinadumelavattam		NA	NA	NA
11	Thekkattur	Tirumayam	5-10 km	5-10 km	5-10 km
12	Lembalakudi		5-10 km	5-10 km	5-10 km
13	Ennapatti		<5 km	<5 km	<5 km
14	Tirumayam		✓	✓	✓
15	Unaiyur		5-10 km	5-10 km	5-10 km
16	Arimalam		✓	✓	✓

Source: District Census Hand Book -2011, Pudukkottai

11.1.5.4 Sivaganga district

In Sivaganga district, 22 villages are partly affected for both land and habitations. Out of these, information for 12 villages is available in District Census Handbook-2011. Ten villages as listed in the **Tables 11.42 to 11.52** below could not be found in the Census. One village ‘Pirandakulam’ is reported as ‘uninhabited’ in the Census. Hence, the socio-economic profile of the affected villages in the district is discussed based on the available information.

i) Demography: Total affected population in the 11 villages is 40241 spread over 10237 households. Thus, the average number of members per household is about 4. Population of males in affected villages is 19995, while

that of the females is 20246. The average sex ratio in the affected area is 1013. Details are given in **Table 11.42**.

Table 11.42
Demographic details in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	No. of Households	Household Members			Sex Ratio	
				Male	Female	Total		
1	Kothamangalam	Sakkottai	903	1775	1776	3551	1001	
2	Vadakudi		NA	NA	NA	NA	NA	
3	Kottaiyur		3803	7402	7364	14766	995	
4	Venelgudi		NA	NA	NA	NA	NA	
5	Kazhalanivasal		NA	NA	NA	NA	NA	
6	Patharakudi	Kallel	NA	NA	NA	NA	NA	
7	Kambanur		480	934	982	1916	1051	
8	Kandaramanickam		NA	NA	NA	NA	NA	
9	Keelapattamangalam		425	795	833	1628	1048	
10	Karungulam(P)	Tirupattur	91	138	153	291	1109	
11	Chokkanathapuram	Kalayarkovil	NA	NA	NA	NA	NA	
12	Kottakudi		NA	NA	NA	NA	NA	
13	Ammanpatti		184	248	321	569	1294	
14	MuthurVaniankudi		NA	NA	NA	NA	NA	
15	Gouripatti		269	484	530	1014	1095	
16	Pirandakulam		---- Un inhabited ----					
17	Paiyaurpillaiavayal		2664	5321	5318	10639	999	
18	Vaniangudi	Sivaganga	525	1088	1097	2185	1008	
19	Periakottai	Mana Madurai	714	1445	1484	2929	1027	
20	Pathinettankottai		NA	NA	NA	NA	NA	
21	Muthanendal		NA	NA	NA	NA	NA	
22	Kuvalaiveli		179	365	388	753	1063	
	Total		10237	19995	20246	40241	11690	

Source: District Census Hand Book -2011, Sivaganga District

ii) Caste: The number of Schedule Caste (SC) and Scheduled Tribe (ST) population in the project affected villages are 4435 and 13 respectively, which indicates that the tribal population is very marginal in the area. Details are given in **Table 11.43**.

Table 11.43
SC and ST population in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	Population			
			SC	ST	Total	
1	Kothamangalam	Sakkottai	256	--	256	
2	Vadakudi		NA	NA	NA	
3	Kottaiyur		1551	5	1556	
4	Venelgudi		NA	NA	NA	
5	Kazhalanivasal		NA	NA	NA	
6	Patharakudi	Kallel	NA	NA	NA	
7	Kambanur		63	--	63	
8	Kandaramanickam		NA	NA	NA	
9	Keelapattamangalam	Tirupattur	126	--	126	
10	Karungulam(P)		11	--	11	
11	Chokkanathapuram		NA	NA	NA	
12	Kottakudi		NA	NA	NA	
13	Ammanpatti		Kalayarkovil	125	--	125
14	MuthurVaniankudi			NA	NA	NA
15	Gouripatti			162	--	162
16	Pirandakulam	---- Un inhabited ----				
17	Paiyaurpillaiavayal		1517	8	1525	
18	Vaniangudi	Sivaganga	222	--	222	
19	Periakottai	Mana	272	--	272	
20	Pathinettankottai		NA	NA	NA	
21	Muthanendal	Madurai	NA	NA	NA	
22	Kuvalaiveli		130	--	130	
	Total		4435	13	4448	

Source: District Census Hand Book -2011, Sivaganga

iii) Literacy: The total literacy rate in the eleven affected villages varies from 53% to 81%. The male literacy rate is higher than that of female literacy rate. While the male literacy rate varies from 61% to 84%, the female literacy rate ranges from 46% to 79%. Details are given in **Table 11.44**.

Table 11.44
Literacy Rate in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	Male literacy		Female literacy		Total literacy		
			No.	%	No.	%	No.	%	
1	Kothamangalam	Sakkottai	1357	77	1116	63	2473	70	
2	Vadakudi		NA	NA	NA	NA	NA	NA	
3	Kottaiyur		6229	84	5788	79	12017	81	
4	Venelgudi		NA	NA	NA	NA	NA	NA	
5	Kazhalanivasal		NA	NA	NA	NA	NA	NA	
6	Patharakudi	Kallel	NA	NA	NA	NA	NA	NA	
7	Kambanur		724	77	595	61	1319	69	
8	Kandaramanickam		NA	NA	NA	NA	NA	NA	
9	Keelapattamangalam		647	81	544	65	1191	73	
10	Karungulam(P)	Tirupattur	109	79	92	60	201	69	
11	Chokkanathapuram	Kalayarkovil	NA	NA	NA	NA	NA	NA	
12	Kottakudi		NA	NA	NA	NA	NA	NA	
13	Ammanpatti		183	74	179	56	362	64	
14	MuthurVaniankudi		NA	NA	NA	NA	NA	NA	
15	Gouripatti		293	61	246	46	539	53	
16	Pirandakulam		---- Un inhabited ----						
17	Paiyaurpillaivayal		4168	78	3684	69	7852	74	
18	Vaniangudi	Sivaganga	905	83	678	62	1583	73	
19	Periakottai	Mana Madurai	1026	71	738	50	1764	60	
20	Pathinettankottai		NA	NA	NA	NA	NA	NA	
21	Muthanendal		NA	NA	NA	NA	NA	NA	
22	Kuvalaiveli		290	80	189	49	479	64	

Source: District Census Hand Book -2011, Sivaganga

iv) Educational facilities: There are primary schools in all the villages. There are middle schools in nine villages except Kambanur and Karungulam (P) for which middle school is available within 5 km. Five villages have secondary schools while five other villages have this facility within 5 km. Vaniangudi village has access to secondary schools at a distance from 5 to 10 km. The nearest college is within 5 km for Kothamangalam and Paiyaurpillaivayal villages. A college is at a distance of 5- 10 km for the residents of four other

villages and beyond 10 km for the remaining five villages. Details are given in **Table 11.45**.

Table 11.45
Schools available in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	No. of Schools/facility within			College
			Primary	Middle	Secondary	
1	Kothamangalam	Sakkottai	2	2	1	< 5 km
2	Vadakudi		NA	NA	NA	NA
3	Kottaiyur		2	2	1	5 -10km
4	Venelgudi		NA	NA	NA	NA
5	Kazhalanivasal		NA	NA	NA	NA
6	Patharakudi	Kallel	NA	NA	NA	NA
7	Kambanur		1	< 5 km	< 5 km	5 -10km
8	Kandaramanickam		NA	NA	NA	NA
9	Keelapattamangalam		2	1	1	5 -10km
10	Karungulam(P)	Tirupattur	2	< 5 km	< 5 km	5 -10km
11	Chokkanathapuram	Kalayarkovil	NA	NA	NA	NA
12	Kottakudi		NA	NA	NA	NA
13	Ammanpatti		1	1	< 5 km	> 10 km
14	MuthurVianankudi		NA	NA	NA	NA
15	Gouripatti		3	1	< 5 km	> 10 km
16	Pirandakulam		---- Un inhabited ----			
17	Paiyaurpillaivayal		5	1	3	< 5 km
18	Vaniangudi	Sivaganga	3	2	5 -10km	> 10 km
19	Periakottai	Mana Madurai	4	1	1	> 10 km
20	Pathinettankottai		NA	NA	NA	NA
21	Muthanendal		NA	NA	NA	NA
22	Kuvalaiveli		2	1	< 5 km	> 10 km

Source: District Census Hand Book -2011, Sivaganga

v) **Land use pattern:** It is observed from the available information on land use in the affected villages, that agricultural land constitutes to only 19%, forest accounts for just over 3% and the remaining 78% land belongs to other categories like permanent pastures, current and other fallows, culturable waste land etc. Details are given in **Table 11.46**.

Table 11.46
Land use pattern in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	Land Use (ha)			
			Agriculture	Forest	Others	Total
1	Kothamangalam	Sakkottai	47.4	5.1	1172.5	1225
2	Vadakudi		NA	NA	NA	NA
3	Kottaiyur		48.7	74.3	582	705
4	Venelgudi		NA	NA	NA	NA
5	Kazhalanivasal		NA	NA	NA	NA
6	Patharakudi	Kallel	NA	NA	NA	NA
7	Kambanur		228.8	130.8	689.4	1049
8	Kandaramanickam		NA	NA	NA	NA
9	Keelapattamangalam		123	0	643.6	766.6
10	Karungulam(P)	Tirupattur	12.5	0	447.2	459.7
11	Chokkanathapuram	Kalayarkovil	NA	NA	NA	NA
12	Kottakudi		NA	NA	NA	NA
13	Ammanpatti		48.3	0	359.8	408.1
14	MuthurVaniankudi		NA	NA	NA	NA
15	Gouripatti		202.9	105	754.1	1062
16	Pirandakulam		83.1	52.6	157.9	293.6
17	Paiyaurpillaiyaval		139.6	0	1465.4	1605
18	Vaniangudi	Sivaganga	566.6	0	661.4	1228
19	Periakottai	Manamadurai	208	0	565	773
20	Pathinettankottai		NA	NA	NA	NA
21	Muthanendal		NA	NA	NA	NA
22	Kuvalaiveli		269.1	0	634.9	904
	Total			1978	367.8	8133.2
	Percentage		18.9	3.5	77.6	100.0

Source: District Census Hand Book -2011, Sivaganga

vi) **Sources of water:** Six villages have all four sources of water viz. tap, well, hand pump and tube/bore well. Also, all the villages except Kottaiyur have tap facility. Likewise, in nine out of 11 villages hand pumps are available barring Kothamangalam and Kottaiyur. Similarly, wells are available in nine villages except Ammanpatti and Gouripatti. Also, nine of

the villages have tube well/bore well facility barring Kottaiyur and Karungulam (P). All these sources of water are being used by the villagers for other purposes also like sanitation, washing utensils, bathing of cattle etc. Details are given in **Table 11.47**.

Table 11.47
Sources of water in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	Source of Water for Drinking and Other Purposes			
			Tap	Hand pump	Wells	Tube/Bore well
1	Kothamangalam	Sakkottai	✓	X	✓	✓
2	Vadakudi		NA	NA	NA	NA
3	Kottaiyur		X	X	✓	X
4	Venelgudi		NA	NA	NA	NA
5	Kazhalanivasal		NA	NA	NA	NA
6	Patharakudi	Kallel	NA	NA	NA	NA
7	Kambanur		✓	✓	✓	✓
8	Kandaramanickam		NA	NA	NA	NA
9	Keelapattamangalam		✓	✓	✓	✓
10	Karungulam(P)	Tirupattur	✓	✓	✓	X
11	Chokkanathapuram	Kalayarkovil	NA	NA	NA	NA
12	Kottakudi		NA	NA	NA	NA
13	Ammanpatti		✓	✓	X	✓
14	MuthurVaniankudi		NA	NA	NA	NA
15	Gouripatti		✓	✓	X	✓
16	Pirandakulam		---- Un inhabited ----			
17	Paiyaurpillaiyaval		✓	✓	✓	✓
18	Vaniangudi	Sivaganga	✓	✓	✓	✓
19	Periakottai	Mana Madurai	✓	✓	✓	✓
20	Pathinettankottai		NA	NA	NA	NA
21	Muthanendal		NA	NA	NA	NA
22	Kuvalaiveli		✓	✓	✓	✓

Source: District Census Hand Book -2011, Sivaganga

vii) Power supply: Power supply for all purposes viz. domestic, agricultural & other purposes is available in six villages. In the remaining five villages,

power supply is available for domestic and agricultural purposes only. Details are given in **Table 11.48**.

Table 11.48
Power supply in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	Power Supply for			
			Domestic	Agricultural	Commercial	All Purpose
1	Kothamangalam	Sakkottai	✓	✓	✓	✓
2	Vadakudi		NA	NA	NA	NA
3	Kottaiyur		✓	✓	✓	✓
4	Venelgudi		NA	NA	NA	NA
5	Kazhalanivasal		NA	NA	NA	NA
6	Patharakudi	Kallel	NA	NA	NA	NA
7	Kambanur		✓	✓	✓	✓
8	Kandaramanickam		NA	NA	NA	NA
9	Keelapattamangalam		✓	✓	✓	✓
10	Karungulam(P)	Tirupattur	✓	✓	X	X
11	Chokkanathapuram	Kalayarkovil	NA	NA	NA	NA
12	Kottakudi		NA	NA	NA	NA
13	Ammanpatti		✓	✓	X	X
14	MuthurVaniankudi		NA	NA	NA	NA
15	Gouripatti		✓	✓	X	X
16	Pirandakulam		---- Un inhabited ----			
17	Paiyaurpillaiavayal		✓	✓	✓	✓
18	Vaniangudi	Sivaganga	✓	✓	X	X
19	Periakottai	Manamadurai	✓	✓	✓	✓
20	Pathinettankottai		NA	NA	NA	NA
21	Muthanendal		NA	NA	NA	NA
22	Kuvalaiveli		✓	✓	X	X

Source: District Census Hand Book -2011, Sivaganga

viii) Health facilities: Seven villages have at least one Primary Health Centre. This facility is available within 5 km reach for the remaining four villages. Maternity and Child Welfare Centres are available in four villages. While this facility is available within a distance of 5 km for five villages, people of the remaining two villages will have to commute for 5-10 km in order to avail this facility. No Allopathic Hospital is available in any of the villages. The nearest

allopathic hospital is within 5 km for Paiyaurpillaivayal. Five villages have this facility at a distance of 5-10 km, while the people of the remaining five villages have to go beyond 10 km for availing similar facility. Details are given in **Table 11.49**.

Table 11.49
Details of hospitals in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	Medical Facilities Available		
			Allopathic Hospital	Maternity and Child Welfare Centre	Primary Health Centre/Sub Centre
1	Kothamangalam	Sakkottai	> 10 km	1	1
2	Vadakudi		NA	NA	NA
3	Kottaiyur		5 -10km	1	2
4	Venelgudi		NA	NA	NA
5	Kazhalanivasal		NA	NA	NA
6	Patharakudi	Kallel	NA	NA	NA
7	Kambanur		5 -10km	< 5 km	< 5 km
8	Kandaramanickam		NA	NA	NA
9	Keelapattamangalam		5 -10km	5 -10km	2
10	Karungulam(P)	Tirupattur	5 -10km	< 5 km	< 5 km
11	Chokkanathapuram	Kalayarkovil	NA	NA	NA
12	Kottakudi		NA	NA	NA
13	Ammanpatti		> 10 km	< 5 km	1
14	MuthurVaniankudi		NA	NA	NA
15	Gouripatti		5 -10km	< 5 km	< 5 km
16	Pirandakulam		---- Un inhabited ----		
17	Paiyaurpillaivayal		< 5 km	2	7
18	Vaniangudi	Sivaganga	> 10 km	5 -10km	< 5 km
19	Periakottai	Manamurai	> 10 km	1	1
20	Pathinettankottai		NA	NA	NA
21	Muthanendal		NA	NA	NA
22	Kuvalaiveli		> 10 km	< 5 km	1

Source: District Census Hand Book -2011, Sivaganga

ix) Post and telephones: Both post office and telephone (Landline) are available in eight villages. Only telephone facility is available in Ammanpatti,

Paiyaurpillaivayal and Kuvalaiveli villages, for which the nearest post office is within a distance of 5 km. Details are given in **Table 11.50**.

Table 11.50
Post office and telephone facilities in the
affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	Facilities Available	
			Post /Sub Post Office	Telephone
1	Kothamangalam	Sakkottai	✓	✓
2	Vadakudi		NA	NA
3	Kottaiyur		✓	✓
4	Venelgudi		NA	NA
5	Kazhalanivasal		NA	NA
6	Patharakudi	Kallel	NA	NA
7	Kambanur		✓	✓
8	Kandaramanickam		NA	NA
9	Keelapattamangalam		✓	✓
10	Karungulam(P)	Tirupattur	✓	✓
11	Chokkanathapuram	Kalayarkovil	NA	NA
12	Kottakudi		NA	NA
13	Ammanpatti		< 5 km	✓
14	MuthurVaniankudi		NA	NA
15	Gouripatti		✓	✓
16	Pirandakulam		---- Un inhabited ----	
17	Paiyaurpillaivayal		< 5 km	✓
18	Vaniangudi	Sivaganga	✓	✓
19	Periakottai	Manamaduurai	✓	✓
20	Pathinettankottai		NA	NA
21	Muthanendal		NA	NA
22	Kuvalaiveli		< 5 km	✓

Source: District Census Hand Book -2011, Sivaganga

x) Transport facilities: Transport facility including plying of private/ government buses is available to all the villages. Kottaiyur has a railway station. Three villages viz. Kothamangalam, Paiyaurpillaivayal and Vaniangudi have a railway station within 5 km. Gouripatti has this facility at a distance of 5-10 km. The Railways facility is beyond 10 km for the remaining six villages. Kottaiyur,

Paiyaurpillaivayal and Kuvalaiveli are connected to a National Highway. Periakottai is connected to a State Highway (SH) and Kothamangalam & Ammanpatti are connected to a major district road (MDR). Karungulam (P) is connected to other district road (ODR). For Keelapattamangalam and Vaniangudi villages, NH is within 10 km. Kambanur is within 5 km from an SH, while Gouripatti is in the same range from an ODR. Details are given in **Table 11.51**.

Table 11.51
Transport facilities in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/ block	Transport facilities			
			Bus (Privat/ Public)	Railway	Connecte d to	Nearest town
1	Kothamangalam	Sakkottai	✓	< 5 km	MDR	KanaduKath an
2	Vadakudi		NA	NA	NA	NA
3	Kottaiyur		✓	✓	NH	Kottaiyur
4	Venelgudi		NA	NA	NA	NA
5	Kazhalanivasal		NA	NA	NA	NA
6	Patharakudi	Kallel	NA	NA	NA	NA
7	Kambanur		✓	> 10 km	SH < 5 km	Tiruppath ur
8	Kandaramanickam		NA	NA	NA	NA
9	Keelapattamangalam		✓	> 10 km	NH<10 km	Tiruppath ur
10	Karungulam(P)	Tirupattur	✓	> 10 km	ODR	Tiruppath ur
11	Chokkanathapuram	Kalayarko vil	NA	NA	NA	NA
12	Kottakudi		NA	NA	NA	NA
13	Ammanpatti		✓	> 10 km	MDR	Sivaganga
14	MuthurVaniankudi		NA	NA	NA	NA
15	Gouripatti		✓	5 -10km	ODR <5 km	Nat.Kottai
16	Pirandakulam		---- Un inhabited ----			
17	Paiyaurpillaivayal		✓	<5 km	NH	Sivaganga

18	Vaniangudi	Sivaganga	✓	<5 km	NH <10 km	Nat.Kottai
19	Periakottai	Mana Madurai	✓	> 10 km	SH	Puduvayal
20	Pathinettankottai		NA	NA	NA	NA
21	Muthanendal		NA	NA	NA	NA
22	Kuvalaiveli		✓	> 10 km	NH	Manamadurai

Source: District Census Hand Book -2011, Sivaganga

xi) Banking and credit societies facilities: Paiyaurpillaivayal has all the banking/ATM and credit society facilities. Other than this, only Kothamangalam has a bank. Eight villages have a bank within 5 km, while the remaining three villages have access to this facility at a distance from 5 to 10 km. Keelapattamangalam has an agricultural credit society. Four villages have a credit society within 5 km, while the remaining five villages have access to this facility at a distance from 5 to 10 km. The nearest ATM is within 5 km for three villages, while it is 5-10 km away for another six villages. and agri credit societies within a range of 5 to 10 km. Only villagers from Kuvalaiveli have to commute for more than 10 km to avail the ATM facility. Details are given in **Table 11.52**.

Table 11.52
Banking and credit society facilities in the affected villages in Sivaganga district

Sl. No.	Village	Taluk/block	Banking / Credit Society Facilities Available (Within Range in km)		
			Banking	Agri. Credit Society	ATMs
1	Kothamangalam	Sakkottai	✓	<5 km	<5 km
2	Vadakudi		NA	NA	NA
3	Kottaiyur		<5 km	5 -10km	<5 km
4	Venelgudi		NA	NA	NA
5	Kazhalanivasal		NA	NA	NA
6	Patharakudi	Kallel	NA	NA	NA
7	Kambanur		5 -10km	<5 km	5 -
8	Kandaramanickam		NA	NA	NA
9	Keelapattamangalam		<5 km	✓	5 -
10	Karungulam(P)	Tirupattur	<5 km	<5 km	<5 km
11	Chokkanathapuram	Kalayarkovil	NA	NA	NA

12	Kottakudi		NA	NA	NA
13	Ammanpatti		<5 km	<5 km	5 -
14	MuthurVaniankudi		NA	NA	NA
15	Gouripatti		<5 km	5 -10km	5 -
16	Pirandakulam		---- Un inhabited ----		
17	Paiyaurpillaivayal		✓	✓	✓
18	Vaniangudi	Sivaganga	<5 km	5 -10km	5 -
19	Periakottai	Manamaduurai	5 -10km	5 -10km	5 -
20	Pathinettankottai		NA	NA	NA
21	Muthanendal		NA	NA	NA
22	Kuvalaiveli		5 -10km	5 -10km	> 10

Source: District Census Hand Book -2011, Sivaganga

11.1.5.5 Virudhunagar district

In Virudhunagar district, five villages are partly affected for both land and habitations. Out of these, information for four villages is available in District Census Handbook-2011. Uluthimadai village could not be found in the Census. Hence, the socio-economic profile of the affected villages in the district is discussed based on the available information.

(i) **Demography:** Total population of the four villages is 6308 spread over 1535 households, with 3229 males and 3079 females. The average number of members per household is just above 4. The sex ratio in the affected villages is 954. Details are given in **Table 11.53**.

Table 11.53
Demographic details in the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/ block	No. of House holds	Household Members			Sex Ratio (no. of Females / 1000 Males)
				Male	Female	Total	
1	Katanur	Tiruchuli	469	1007	934	1941	928
2	Uluthimadai		NA	NA	NA	NA	NA
3	Naloor		481	992	925	1917	932
4	Panaikkudi		326	692	673	1365	973
5	Isali		259	538	547	1085	1017
		Total	1535	3229	3079	6308	954

ii) Caste: The number of Schedule Caste (SC) population in the affected villages are 1820. There is no Scheduled Tribe (ST) population in the area. Details are given in **Table 11.54**.

Table 11.54
SC and ST population in the affected villages
in Virudhunagar district

Sl. No.	Village	Taluk/ block	Population		
			SC	ST	Total
1	Katanur	Tiruchuli	757	-	757
2	Uluthimadai		NA	NA	NA
3	Naloor		565	-	565
4	Panaikkudi		419	-	419
5	Isali		79	-	79
		Total	1820	-	1820

iii) Literacy: The total literates in the affected villages are 4331 comprising of 2516 males and 1815 females. The total literacy rate in the affected villages varies from 66% to 72%. The male literacy rate is higher than that of female literacy rate. While the male literacy rate varies from 76% to 79%, the female literacy rate ranges from 53% to 65%. Details are given in **Table 11.55**.

Table 11.55
Literacy rate in the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/ block	Male literacy		Female literacy		Total literacy	
			Number	%	Number	%	Number	%
1	Katanur	Tiruchuli	796	79	607	65	1403	72
2	Uluthimadai		NA	NA	NA	NA	NA	NA
3	Naloor		753	76	503	54	1256	66
4	Panaikkudi		545	79	414	62	959	70
5	Isali		422	78	291	53	713	66
		Total	2516		1815		4331	

iv) Educational facilities: There are primary schools in all the affected villages. Katanur and Naloor villages have middle and secondary schools as

well. A middle school is within 5 km for the other two villages viz. Panaikkudi and Isali. While a secondary school is within 5 km reach for Panaikkudi, it is 5-10 km away from Isali. primary schools, two middle schools and a secondary school. For all the villages, a college is available only at a distance of more than 10 km. Details are given in **Table 11.56**.

Table 11.56
Details of schools available in the affected
villages in Virudhunagar district

Sl. No.	Village	Taluk/ block	No. of Schools/facility within			College
			Primary	Middle	Secondary	
1	Katanur	Tiruchuli	2	2	1	>10 km
2	Uluthimadai		NA	NA	NA	NA
3	Naloor		2	1	1	>10 km
4	Panaikkudi		2	<5 km	<5 km	>10 km
5	Isali		2	<5 km	5-10 km	>10 km

v) Land Use Pattern: It is found from the available land use information that agricultural land constitutes to 47% and the remaining 53% belongs to other categories like permanent pastures, current and other fallows, culturable waste land etc. There is no forest area in the affected villages. Details are given in **Table 11.57**.

Table 11.57
Land use pattern in the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/ block	Land Use (ha)			
			Agriculture	Forest	Others	Total
1	Katanur	Tiruchuli	149.6	-	760.3	909.9
2	Uluthimadai		NA	NA	NA	NA
3	Naloor		623.0	-	477.9	1100.9
4	Panaikkudi		415.8	-	252.1	667.9
5	Isali		377.8	-	293.9	671.7
		Total	1566.2	-	1784.2	3350.4
		Percentage	47.0	-	53.0	100.0

vi) Sources of Water: All the villages have tap facility. Like wise, all the villages except Panaikkudi have wells as source of water supply. Only Naloor has hand pump facility. Further, no village has any tube/bore well for water supply. All these sources of water are being used by the villagers 377.83 for other purposes also like sanitation, washing utensils, bathing of cattle etc. Details are given in **Table 11.58**.

Table 11.58
Sources of water in the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/block	Source of Water for Drinking and Other Purposes			
			Tap	Wells	Hand pump	Tube/Bore well
1	Katanur	Tiruchuli	✓	✓	X	X
2	Uluthimadai		NA	NA	NA	NA
3	Naloor		✓	✓	✓	X
4	Panaikkudi		✓	X	X	X
5	Isali		✓	✓	X	X

vii) Power supply: Power supply for all purposes, viz. domestic, agricultural, commercial and other purposes is available only in Naloor village. Other villages do not have power supply for commercial purpose. Details are given in **Table 11.59**.

Table 11.59
Power supplying the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/block	Power Supply for			
			Domestic	Agricultural	Commercial	All Purpose
1	Katanur	Tiruchuli	✓	✓	X	✓
2	Uluthimadai		NA	NA	NA	NA
3	Naloor		✓	✓	✓	✓
4	Panaikkudi		✓	✓	X	✓
5	Isali		✓	✓	X	✓

viii) Health facilities: While Katanur and Naloor have Primary Health Centres, this facility for Panaikkudi and Isali is available within 5 km. Only Naloor is endowed with a Maternity and Child Welfare Centre. Other villages will have to travel for 5-10 km to avail this facility. An Allopathic Hospital is more than 10 km away from all the villages. Details are given in **Table 11.60**.

Table 11.60
Details of hospitals in the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/ block	Medical facilities available		
			Allopathic hospital	Maternity and child welfare centre	PHC/ Sub centre
1	Katanur	Tiruchuli	>10 km	1	2
2	Uluthimadai		NA	NA	NA
3	Naloor		>10 km	5-10 km	1
4	Panaikkudi		>10 km	5-10 km	<5 km
5	Isali		>10 km	5-10 km	<5 km

ix) Post and telephones: All the villages except Panaikkudi have both post office and telephone (Landline) facility. While Panaikkudi has telephone facility, post office is located within 5 km reach from the village. Details are given in **Table 11.61**.

Table 11.61
Post office and telephone facilities in the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/ block	Facilities Available (Within Range in km)	
			Post Office	Telephone
1	Katanur	Tiruchuli	✓	✓
2	Uluthimadai		NA	NA
3	Naloor		✓	✓
4	Panaikkudi		<5 km	✓
5	Isali		✓	✓

x) Transport facility: Transport facility including plying of private/ public buses is available to three villages barring Isali, for which this facility is within

a distance of 5 km. The nearest railway station is at a distance of 5-10 km for three villages and for Naloor, it is more than 10 km away. Three villages are connected to a major district road (MDR), while Katanur village is connected to Other District Road (ODR). Details are given in **Table 11.62**.

Table 11.62
Details of transport facilities in the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/ block	Transport facilities			
			Bus (Private/ Public)	Railway	Connected to	Nearest town
1	Katanur	Tiruchuli	✓	5-10 km	ODR	Manamadurai
2	Uluthimadai		NA	NA	NA	NA
3	Naloor		✓	>10 km	MDR	Aruppukottai
4	Panaikkudi		✓	5-10 km	MDR	Kariapatti
5	Isali		<5 km	5-10 km	MDR	Kariapatti

xi) Banking and credit societies facilities: Naloor and Panaikkudi have banking facility, whereas it is within 5 km reach for Katanur and in the range of 5-10 km from Isali. Isali has an Agriculture credit society, while for Katanur and Naloor, this facility is within 5 km and for Panaikkudi, it is 5-10 km away. Naloor has ATM facility and for other villages, ATMs are located at a distance of more than 10 km.

Table 11.63
Banking / credit society facilities in the affected villages in Virudhunagar district

Sl. No.	Village	Taluk/ block	Banking / Credit Society Facilities Available (Within Range in km)		
			Banking	Agri. Credit Society	ATMs
1	Katanur	Tiruchuli	<5 km	<5 km	>10 km
2	Uluthimadai		NA	NA	NA
3	Naloor		✓	<5 km	✓
4	Panaikkudi		✓	5-10 km	>10 km
5	Isali		5-10 km	✓	>10 km

11.1.6 Perception about the project

During field topographical surveys and other investigations of the link project at feasibility stage, it was found that all the households in the project area are well aware about Cauvery (Kattalai) - Vaigai- Gundar link project. They are enthusiastic about the commencement of the project as it envisages to bring assured waters to their fields and households and contribute to the development of the region.

11.2 Impact of Cauvery (Kattalai) - Vaigai- Gundar link project

The proposed Cauvery (Kattalai) - Vaigai- Gundar link project link project envisages diversion of 2252 Mcum from the existing Kattalai barrage on Cauvery river for extending irrigation, domestic and industrial water supply benefits in seven districts of water short region of Tamil Nadu State viz., Karur, Tiruchirappalli, Pudukkottai, Sivaganga, Ramanathapuram, Virudhunagar and Thoothukudi before terminating at Gundar river. The farmers in the command area of the project depend mainly on rainfall and ground water for irrigation. The link canal will immensely benefit the region by envisaging to bring additional areas to an extent of 448340 ha under irrigation. In addition, the link will provide domestic water supply to the tune of 79 Mcum in the command area. It is also planned to supply 139 Mcum to meet the demands of various industries in the region. Besides, the project will improve the ground water condition and will provide opportunities for tourism development, fisheries development apart from providing employment to people during its construction and maintenance phases. The link project will thus bring economic prosperity to the acute water short and drought-prone command area lying in the vicinity of the link project.

11.2.1 Short term impact of the link project

Construction of the proposed project would invariably create a number of direct employment opportunities. It also provides immense scope for various indirect employment opportunities which in turn would provide great impetus to the economy of the local area. Various types of businesses, such as shops, food-stalls, tea stalls, restaurants, workshops, etc. would invariably come up, which

would be run by the more entrepreneurial local residents. Besides, a variety of suppliers, traders, transporters, service providers, etc., are also likely to congregate the project area and are likely to be benefited immensely, as demand for almost all types of goods and services will increase significantly. The business community as a whole would be benefited. The locals would also avail these opportunities arising from the project and increase their income levels. Job opportunities will drastically improve in this area. At present, most of the population sustains on agriculture and allied activities. The project will open a large number of jobs to the local population during project construction phase.

11.2.2 Long term impact of link project

The setting up of the project will lead to development of additional infrastructure in the area including roads, electrification, water supply, tourism, fisheries etc which will contribute significantly to the development of the area. The education and health facilities in the region will improve. The water supply and sanitation facilities will get modernized. The employment opportunities are bound to improve manifold. There will certainly be an impetus for phenomenal growth in industries and business opportunities. Also, a no. of agro-based and other industries is likely to be set up in the region. The labour force involved during construction phases will be replaced by skilled manpower during operation phase.

11.2.3 Social impact assessment

The perceived potential impacts as a result of the construction and operation of the proposed Cauvery (Kattalai) - Vaigai- Gundar link project on social aspects of the people based on the available general information have been listed as under:

11.2.3.1 Impacts due to land acquisition

The main socio-economic concerns in resettlement operations of the link project revolve around reducing the impoverishment risks and restoring resettler's livelihoods. A project of this magnitude is likely to entail both positive as well as negative impacts on the socio-cultural and socio-economic fabric of the area. During construction and operation phases, a lot of allied

activities will mushroom in the project area. The construction phase would require a large labour force. Most of the labour force may come from other parts of the state. Economic opportunities would increase both directly as well as indirectly. Similarly, infrastructure facilities also are likely to increase.

One of the most important and negative impacts due to commissioning of the project, would be that a number of families would be displaced from their lands and economic activities due to the construction of the link canal. It is pertinent to mention that the present DPR follows the same canal alignment as was firmed up during feasibility stage in 2004. On account of developmental activities that have taken place in the project area in the last 15 years, about 2395 habitations spread in 63 villages are coming under canal acquisition which may affect about 9400 persons. Out of these, in about 23 villages, only a few houses (1-10) will get dislodged. Therefore, during pre-construction stage, taking into the human and social issues involved in the R&R of the PAFs, every effort shall be made to minimise the no. of PAFs (if can not be avoided altogether) by conducting detailed studies and surveys to detour the link alignment so as to avoid the inhabited areas to the extent possible.

Therefore, the proposed CEIA study shall encompass at the first instance exploring the possibilities of detouring the link alignment and in case where not possible, study all the basic risks predictable in resettlement situations such as landlessness, joblessness, homelessness, marginalization, increased morbidity and mortality, food insecurity, loss of access to common property and social (community) disarticulation. These risks shall be analysed and suitable Resettlement and Rehabilitation plans, if necessary shall be formulated to minimise the adverse impacts on socio-economic environments.

11.3 Rehabilitation and resettlement

Due to construction of the link canal, about 4938 ha land is likely to come under acquisition. In total, 115 villages in Krishnarayapuram (8), Kulithalai(6), and Thogamalai(2) taluks of Karur district, Srirangam(6) taluk of Tiruchirappalli district, Kulathur (19), Pudukkottai (4) and Tirumayam(10) taluks of Pudukkottai district, Sakkottai(8), Kallel (10), Tirupattur (2), Kalayarkovil (13), Sivaganga(7) and Manamadurai(7)taluks of Sivaganga district, Tiruchuli (7) and Aruppukottai (7) taluks of Virudhunagar district are

likely to be affected. Out of these, the project will lead to displacement of the population residing in about 63 villages (partly) while only the land pertaining to remaining 52 villages come under canal acquisition. To minimise such adverse effects, all efforts will be made to detour the link alignment so as to avoid habitations during the pre-construction stage. In the reaches where detouring is not possible, it is imperative to provide a suitable Rehabilitation and Resettlement package to the Project affected People (PAP) enabling them to maintain at least their current levels of living standards.

Govt. of India brought out “Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013”. The State of Tamil Nadu may have brought out its own State policy for R&R of project displaced people based on this Act. Best among the provisions in such policies/acts/bills shall be considered and the Rehabilitation and Resettlement package shall be developed in the CEIA study of the Link project.

11.3.1 Assessment of economic loss due to displacement

11.3.1.1 Land under acquisition

The land to be acquired for Cauvery (Kattalai) – Vaigai – Gundar link canal is 4938 ha. as detailed below:

(i)	Link canal right of way	- 3326 ha
(ii)	Borrow area for canal	- 298 ha
(iii)	Office & colony	- 5 ha
(iv)	Branch canals	- 1634 ha
	Total	- 5263 ha

The various categories of land to be acquired for the link canal are as under:

(i)	Barren/Govt. Land	- 526 ha
(ii)	Forest	- 107 ha
(iii)	Rainfed area	- 3094 ha
(iv)	Irrigated land	- 1536 ha
	Total	- 5263 ha

11.3.1.2 Project affected community

Due to construction of the link canal, about 115 villages shall be affected. Out of these, PAFs in 63 (partly) villages are to be rehabilitated. Where as, in about 52 villages, only the land comes under acquisition. After duly examining the possibilities of detouring the link alignment, the exact no. of PAFs shall be assessed during the CEIA study of the link project. All the affected families would be compensated for the loss of their lands and houses. The families whose houses are coming under acquisition would be resettled in the same village or in new habitations as appropriate and would be assisted to take up alternative occupation in the new surroundings, as required.

11.3.2 People’s perception towards rehabilitation package

A liberal and attractive Rehabilitation and Resettlement package which would be acceptable to the Project affected people duly taking into cognizance their perceptions shall be prepared for improvement of their economic conditions significantly after resettlement.

11.3.3 Rehabilitation and resettlement package

As far as acquisition of government land including forest land, compensation would be paid to the concerned government department/agency. The compensation for acquisition of private land would be paid to the respective landowners/ land titleholders within the provisions of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Therefore, the relevant norms/measures for resettlement and rehabilitation as per the Govt. of India Act-2013 are discussed in the following paras:

11.3.3.1 Measures for resettlement

All the families that are likely to be evicted from their homesteads as a result of the process of land acquisition due to construction of canal would be eligible to receive resettlement benefits, in addition to compensation of homestead plot and structures. In accordance with the provisions of “Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and

Resettlement Act, 2013”, the following provisions for resettlement based on similar projects will be provided to the families losing homesteads as given in **Table 11.64.**

Table 11.64
Provisions for resettlement plan for families losing homesteads

Sl. No.	Description	Adopted Norms
1	Housing benefits and compensation	If a house is lost in rural areas, a constructed house shall be provided as per Indira Awas Yojana Specifications.
2	House building assistance	One-time financial assistance of not less than Rs. 5,00,000/- for house construction.
3	Construction of cattle shed	One-time financial assistance of Rs. 50,000/PAF shall be given for construction of cattle shed.
4	Transportation aid	One-time financial assistance of Rs. 50,000/PAF for each displaced family for shifting of family, building material, belongings and cattle.
5.	Construction of working shed/shop	One-time financial assistance of Rs.1,25,000/PAF shall be given for construction of working shed/shop.
6	Subsistence allowance	Each affected family losing land, will be given a monthly subsistence allowance equivalent of Rs.3,000/month for a period of one year. In addition, SC/ST population displaced shall receive an additional lumpsum amount of Rs.50,000/-
7	One-time resettlement allowance	Each affected family shall be given a one-time “Resettlement Allowance” of Rs. 50,000/-

According to the above provisions, resettlement benefits shall be extended to all the PAFs including adult sons who are likely to be evicted from their homesteads.

Amenities and infrastructural facilities to be provided at resettlement areas: In addition to the resettlement benefits that would be extended to the PAFs, appropriate Amenities and Infrastructural Facilities shall be proposed to be provided at Resettlement sites during the CEIA study of the link project. The broad details of such facilities usually provided (based on similar projects) are discussed in the following paras:

- **Internal village road network:** For easy movement of people and vehicular traffic within the proposed resettlement sites, it will be suggested to construct wide internal village roads in each of the resettlement sites. These internal village roads would be connected to an access road which connects villages.
- **Drainage network within the resettlement site:** It will be proposed to construct Drainage network in each of the resettlement colonies. The main purpose of this drainage network is to clear storm water and domestic wastewater from kitchens and bathrooms. It is also proposed that the drainage networks will consist of a lined drain and are covered with RCC slabs. These drains will traverse parallel along internal village roads and finally culminate into a collection tank, before it is screened and filtered and thereafter either stored in an underground storage tank to be utilised for irrigation purposes in the Green Belt areas or discharged for the purpose of ground water recharge.
- **Sanitation network within the resettlement site:** Sanitation network will be proposed to be laid within each resettlement site. The main purpose of this network will be to transport domestic waste (night soil waste from lavatories). In addition, the sanitation network will also carry waste from schools, health care facilities and other complexes within the resettlement sites. It is proposed to treat the sewage through septic tanks. The treated sewage will be disposed in absorption trenches.
- **Safe drinking water:** Safe drinking water @ 135 lpcd will be proposed to be provided to the PAFs by constructing an overhead storage tank and

distributed through a network of pipelines. It will be suggested to lay underground drinking water pipeline along the internal village road, on the opposite side of the corridor for drainage and sanitation network. Construction of Conventional Water Treatment Plant will also be considered.

- **Public transport:** For public transportation, it will be proposed to construct a Bus Stop in each of the resettlement colonies. This bus stop shall occupy an area of about 10 m² (2 m x 5 m) and shall be covered by a 1.5 m high enclosure wall from 3 sides made of brick and cement with corrugated roofing material spread over 4 steel poles.
- **Drinking water trough for cattle:** For families that wish to rear livestock, it will be proposed to construct drinking water troughs for cattle in each resettlement site.
- **Place of worship:** A plot size measuring 0.5 ha will be proposed to be earmarked for construction of place of worship in resettlement sites.
- **Cremation grounds:** It will be proposed to earmark an area of 1 ha of plot for establishment of cremation ground and / or burial ground.
- **Fair price shops and other shops:** It will be proposed to provide a constructed space for 1 Fair Price shop and 4 other shops in each of the resettlement colonies. An area of 0.005 ha [(4 m x 2.5 m) x 5 shops] may be earmarked in each resettlement site.
- **Post office:** A plot size measuring 10 m long x 5 m wide will be suggested to be earmarked for the construction of post office in various resettlement sites with drinking water post and WC facility.
- **Panchayat ghar:** A plot size measuring 0.25 ha will be proposed to be earmarked for the construction of Panchayat Ghar. It will be suggested to construct the building over an area of 20 m x 15 m with drinking water post and WC facility.
- **Community hall:** A plot size measuring 0.25 ha will be proposed to be earmarked for the construction of community hall (a two storied building

over an area of 20 m x 15 m) in various resettlement sites with drinking water post and WC facility.

- **Health care facility:** A plot size measuring 0.25 ha will be suggested to be earmarked for the construction of a Primary Health Centre in the resettlement site with drinking water post and WC facility.
- **Garden and children's playground:** About 1 ha of land will be devoted for this purpose with amenities like swings, park benches, goal posts, racing track in the playground.
- **Space for weekly market:** It will also be proposed to allocate 0.15 ha of land in each of the resettlement colonies for weekly market. This area will remain un-developed, where vendors could come in on a weekly basis, set up their temporary shops to sell local produce.

11.3.3.2 Measures for rehabilitation

In the proposed project, majority of the population depends on land for their livelihood. The exact no. of PAFs shall be assessed during the CEIA study of the link project and appropriate rehabilitation measures would be suggested to the Project affected Families (PAFs) losing land due to the proposed link canal.

11.3.4 Local area development plan

The objective of the plan is to empower families of the partially affected villages. PAFs which need to be relocated shall be provided Rehabilitation and Resettlement benefits as per the Policy and also other resettlement benefits. Contrarily, it is the PAFs whose land has come under canal acquisition, who are not likely to benefit from the proposed project except for compensation for their lands. Therefore, a Local Area Development Plan shall be framed to extend benefits to not only the residents of the partially affected villages, but also to residents of the villages adjoining to project area which are also within the study area. The following aspects shall be covered under the Local Area Development Plan.

- Educational Facilities
- Health Care and Medical Facilities

- Infrastructure development
- Economic development
- Social and cultural development

11.3.5 Provision for R&R

In anticipation of detailed studies & surveys for detouring the link alignment and taking up of a CEIA study of the link project, no provision is made in the present DPR towards development of land at the rehabilitation sites with roads, water supply etc., construction of parks, community halls and other amenities, housing, cattle sheds, transportation aid, subsistence and resettlement allowance. Also, for the same reason, no provision is made towards cost of land acquisition taking into account the prevailing rates of lands, value of trees and plants, crop compensation, acquisition of other properties, rent for use of land prior to acquisition etc. as per the norms.

11.3.6 Monitoring and evaluation

The successful implementation of Rehabilitation and Resettlement Plan of Project affected people requires continuous monitoring of the programme at different levels. NRRP - 2007 lays provision for appointment of a Commissioner, Rehabilitation and Resettlement and an Administrator, Rehabilitation and Resettlement to ensure smooth and effective land acquisition, implementation of Rehabilitation and Resettlement measures, monitoring of Rehabilitation and Resettlement operations etc. Appropriate institutional arrangement shall be suggested for effective implementation and monitoring of Rehabilitation and Resettlement activities, in tune with the R&R policy in the CEIA study of the link project. Besides, government organizations like Department of Revenue, Rural Development, Agriculture, Forest, Horticulture, Rural Industries etc, shall be involved for dovetailing their programmes for the economic rehabilitation of Project affected families.

11.4 Beneficial economic impact

The increase in income from crop farming with the availability of irrigation facilities is considered as the direct benefit of the project. The rise in income on account of other allied activities by the households in the command

areas and consequent spurt in total employment opportunities are taken as the indirect benefits as detailed below:

11.4.1 Beneficial impacts of the link canal

The link project would greatly help in improving the general prosperity of the region on account of the following.

- i) Introduction of the irrigation in about 4.48 lakh ha of the area would increase the net value of agricultural produce by nearly 3.52 times. This would lead to substantial rise in the average annual income of the local population, as they are mostly dependent on agriculture.
- ii) Agricultural development by introduction of irrigation would inter-alia lead to set up of agro-based, small scale and cottage industries, dairy and poultry development, pisciculture, development of communication network, infrastructural, health and educational facilities, rise in the economic activities, enhancement in the living standards of the general public besides several other aspects of socio-economic development.
- iii) Environmental enhancement and aesthetic of the region on account of the afforestation/plantation programmes on the banks of link canal, branch canals and distributaries.
- iv) Adequate protected and assured drinking water supplies to the rural and urban population in the region, major part of which has hitherto been suffering from acute shortages of potable drinking water.
- v) The link project would create a lot of employment opportunities to the local population during its construction period (as detailed in para 11.4.2). After the implementation of the project, the continuous and increased agricultural operations due to irrigation and development in industrial, infrastructural and economic activities would largely enhance the scope for increased employment opportunities.

11.4.2 Employment generation during construction of the project

The data on employment generation in respect of Upper Ganga Canal Development & Modernization project (Govt. of U.P) has been taken into consideration for assessing the employment generation in this report. The

project is one of the nine irrigation projects considered by the Advisory Group on Expenditure and Employment Generation in Major and Medium Irrigation Projects set up by Central Water Commission (CWC) in their study. As this project suits the scenario of the proposed link canal project in its nature, the employment norm of 35 achieved in this project has been taken into account for arriving at the employment likely to be generated during the construction of the link canal project.

The total estimated cost of the Cauvery (Kattalai) – Vaigai - Gundar link project is Rs 8277 crore (based on 2019-20 price level). The employment generation potential of the C-V-G link project following the norms as mentioned above will be 7115 personnel per annum in the order of 1503 in the technical and 5612 in the non-technical categories. The technical category in turn comprises of 472 engineers, 479 other technical, 552 skilled and semi - skilled personnel whereas the non - technical category comprises of 4284 unskilled and 1328 administrative personnel, annually.

The details on year-wise distribution of manpower/employment which can be generated due to the construction of the link canal project are shown in **Annexure 11.2**.

11.5 Impact matrix

An impact matrix of Cauvery (Kattalai) – Vaigai – Gundar link project including both the beneficial and adverse impacts relating to physical, biological and socio-economic aspects is given in **Table 11.65**.

Table-11.65: Impact matrix of Cauvery (Kattalai) – Vaigai – Gundar link project

Impact	Assessment
(A) Physical impacts	
(i) Sedimentation	No storage reservoirs are proposed under this link project.
(ii) Seismic	Inconsequential, as no new storage reservoirs are proposed for the link project.
iii) Forest area	A no. of small patches of forests totaling to 107 ha are

submerged	to be acquired along the link canal to facilitate its construction. Suitable provision has been made in the estimate of the link project for compensatory afforestation.
(iv) Other area submerged	Nil.
(vi) Groundwater recharge	The groundwater condition will improve along the link canal and in the command area due to irrigation.
(vii) Natural resources	No submergence of any natural resources of economic importance is anticipated.
viii) Irrigated area	An area of 448340 ha will be provided with irrigation by the link project.
(ix) Hydro power	No power component is contemplated under this link project.
x) Historical monuments and archaeological structures	No historical monuments or archeological structures are affected by the construction of the link project.
(xi) Salinity intrusion in delta and estuaries	Lean season flows in adjacent natural drainages will get increased on account of ground water recharge from the link project through irrigation to some extent and this will help in reduction of the salinity intrusion in delta areas.
(xii) Salinity in irrigable area	No serious impact is anticipated, as the water table is considerably below ground level in the command area.
(xiii) Water logging	-do-
(xiv) Availability of drinking water	As the link canal is planned for providing 79 Mcum of domestic water to enroute areas, availability of water for drinking to the community would improve.
(B) Biological impacts	
(i) Public health aspects	No hazards are expected. Infrastructure for health aspects are likely to improve.
(ii) Wild animals and birds.	No adverse impacts are expected
(iii) Other	Likely to improve migration to the project area.

species.	
(C) Socio-economic impacts	
(i) Socio-economic aspects.	Tremendous socio-economic development is expected.
(ii) Resettlement plans	During pre-construction stage, every effort shall be made to minimise the no. of PAFs affected due to the link project (if can not be avoided altogether) by conducting detailed studies and surveys to detour the link alignment so as to avoid the inhabited areas to the extent possible.
(iii) Land acquisition	A total area 5263 ha of land is to be acquired for the purpose of laying the link canal. Suitable provision is made in the project estimate.
(iv) Benefits to the farming community	All the farmers in the command area will get the irrigation facilities, besides domestic water supply.
v) Water quality downstream of storage	Since no Cauvery river water is proposed for diversion through C-V-G link project, water quality in the downstream of Kattalai will not get affected.
(vi) Employment generation	Tremendous potential for employment generation during the construction of the link project and continued large-scale employment opportunities through diverse economic activities that spring up after implementation of the project are expected.
(vii) Infrastructure development	Impetus to various infrastructure development aspects like industries, agricultural and related activities, communications, economic activities, health, education and all other spheres of socio-economic aspects is expected, as the link envisages to provide 139 Mcum of industrial water supply in the region.
(viii) General prosperity	The living standards of the population will improve substantially and the general prosperity of the region would get boosted during and after implementation of the link canal project.