

Physical and Demographical Aspects of Thirumalaya Palem Mandal, Khammam District, Telangana State

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Abstract

Introduction

Thirumalaya palem mandal is sub district of Khammam District. This Mandal was formed in the Year 1986. This Mandal is having boundaries with Mahabubabad District at North, Kusumanchi Mandal at South, Khammam Rural Mandal at East and Suryapeta District at west. This Mandal is having (25) Revenue Villages divided into (40) Grama Panchayaths.

The Thirumalaya Palem Mandal is situated approximately between the latitudes of 17.36 and longitudes of 79.93. Total Geographical area of the Mandal is 57333 Acers.

The Paleru river a prominent river in the region has its source in the plains of Kuruchapalle (Kursapajli) village located in Janagama District. It flows nearly parallel to the Muner river. the Akher river which also begins in Warangal district flows southeast passing Mujahid Puram village in the Thirumalayapalem mandal before joining the Muner at Tirthala in the Radhunadha Palem taluk formerly part of Thirumalayapalem mandal.

The maximum rainfall in this mandal occurs during the south-west monsoon months predominantly in July and August.

Red soils are the most prevalent, comprising 75% of the total. This suggests that the region is likely characterized by these soils, which are known for their characteristic reddish colour due to the presence of iron oxides.

Black soils constitute the second largest portion at 16%. Black soils are known for their fertility and water-holding capacity and finally Sandy soils make up the smallest portion, accounting for only 9%. Sandy soils are characterized by their loose texture and good drainage.

The total geographical area is 57,333.26 acres. Cultivable land represents the largest portion of the geographical area, accounting for 48,670.39 acres, indicating a significant agricultural potential. There is no reported forest area, suggesting that this region is primarily dedicated to other land uses, particularly agriculture.

The systematic analysis of populations is referred to as demography. This term derived from Greek suggests a description of humanity composed of the components demos (meaning people) and graphein (to describe). Demography examines patterns and trends within populations including changes in population size migration flows birth rates and mortality rates

alongside the demographic structure which details the proportions of men women and different age groups.

Thirty years of census data i.e from 1991 census and 2001 census and 2011 census was taken. There was increasing trends in population density of Thirumalaya Palem mandal and also there is increase in Sex-ratio but a decrease in child population sex ratio was recorded due that most of the people in these villages are illiterate and in a view of female child a burden to them. The scheduled caste sex ratio has got decreased from 1991 to 2001 but there is increase in 2011 census and in case of scheduled tribe sex ratio got increased from 1991 to 2001 census but there was decrease in census. The percentage of SC and ST to the total population also got declined from 1991 to 2011 census. In case of literacy rate this mandal had got low literacy in 1991 with 23.7 and it got increased to 48.7 in 2011 census. Work participation rate has a declining trend from 1991(54.2) to 2011(28.6), also there was a decline in male WPR and female WPR from 1991 to 2011 census.

Keywords: Boundaries, Longitude, Latitude, Geographical area, Plains, Rainfall, South-west monsoon, Texture, Drainage, Demography, Population density, Sex-ratio, Literacy rate, Work participation rate.

Introduction

1. Physical Aspects of Thirumalayapalem Mandal

Thirumalaya palem mandal is sub district of Khammam District. This Mandal was formed in the Year 1986. This Mandal is having boundaries with Mahabubabad District at North, Kusumanchi Mandal at South, Khammam Rural Mandal at East and Suryapeta District at west. This Mandal is having (25) Revenue Villages divided into (40) Grama Panchayaths.

1. Location and Size

The Thirumalaya Palem Mandal is situated approximately between the latitudes of 17.36 and longitudes of 79.93.

According to the 2011 Census data Thirumalayapalem Mandal stands at 61502 Population.

The Mandal has density population of 251.7 residents per square kilometre and there are approximately 16732 households in the subdistrict.

Thirumalayapalem Mandal has a literacy rate of 49.73% with literate individuals comprising 41.65% of the female population and 57.81% of the male population..

Total Geographical area of the Mandal is 57333 Acers. The Main Crops in this mandal are Pady, Cotton, Chillies, Green gram, Groundnut and Mango.

2. Drainage:

The Paleru river a prominent river in the region has its source in the plains of Kuruchapalle (Kursapajli) village located in Janagama District. It flows nearly parallel to the Muner river and converges with the Krishna approximately 11 kilometres south of Jaggayapat after flowing through Kakarvai village in Thirumalayapalem mandal.

Additionally the Akher river which also begins in Warangal district flows southeast passing Mujahid Puram village in the Thirumalayapalem mandal before joining the Muner at Tirthala in the Radhunadha Palem taluk formerly part of Thirumalayapalem mandal.

3. Forest Cover:

There is no forest area in Thirumalaya Palem Mandal.

4. Rainfall

The maximum rainfall in this mandal occurs during the south-west monsoon months predominantly in July and August. Analysing data from six years the mandals average rainfall was 1010.4 mm peaking in 2021 with 1168.1 mm and the second highest in 2020 at 1122.1 mm. The least rainfall was observed in 2018 at 774.4 mm with 2023 following at 1028.0 mm

Table.2.1. Rainfall data (mm) of Thirumalaya Palem Mandal 6 years cumulative

Month	2018	2019	2020	2021	2022	2023
JAN	0	39.9	0	0	39.2	39.4
FEB	0	0	29.4	0	0	0
MAR	13.7	0	0	0	0	49.6
APR	15.6	16.2	0.8	10.9	0	28
MAY	16.9	43.8	0.3	59.9	11	70
JUNE	207.7	57.2	135.3	168.5	83.6	27.8
JULY	89.5	236.1	265.9	305.4	390	428.6
AUG	298.2	273.7	367.3	286	222.8	61.8
SEP	69.1	244.1	189	230.3	197.4	138.8
OCT	22.2	187.1	116.3	73.1	172.4	34
NOV	0	5.3	15.6	34	0	83.4
DEC	45.7	4.8	4.2	0	0	66.6
MAX	298.2	273.7	367.3	305.4	222.8	428.6
TOT	774.4	1104	1122.1	1168.1	1116.4	1028

Source: Dept of economics and statistics

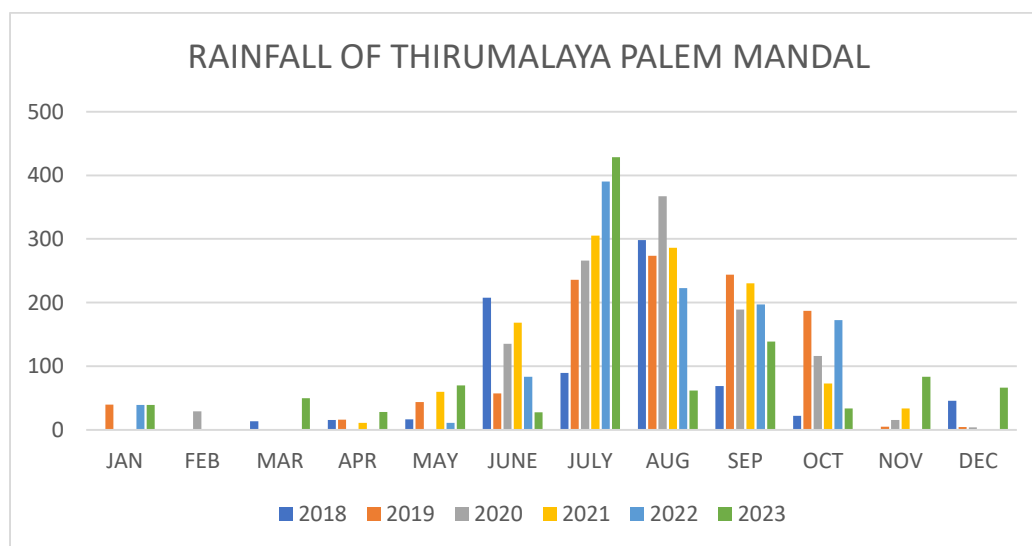


Figure:2.2. Rainfall Of Thirumalaya Palem Mandal

5. Soils:

Table.2.2. Distribution of Soils in Thirumalaya Palem Mandal

	Soil type	Area in acres	Percentage
1	Black Soils	7363	16.2
2	Red Soils	34071	74.98
3	Sandy Soils	4006	8.82
4	Total	45440	100%

Source: MAO Office T.Palem Mandal

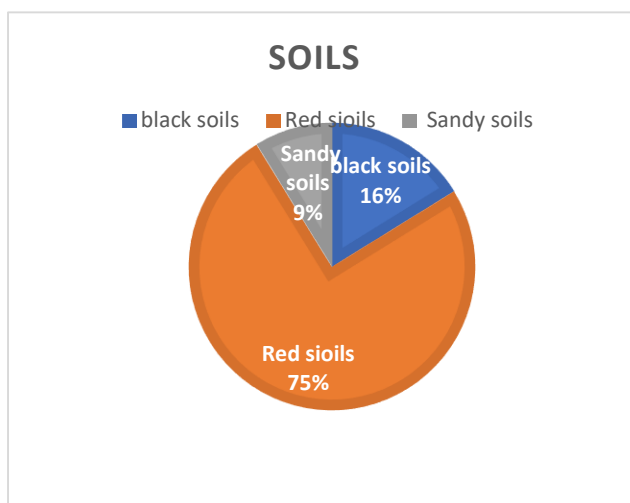


Figure.2.5: Type of Soils

Dominant Soil Type: Red soils are the most prevalent, comprising 75% of the total. This suggests that the region is likely characterized by these soils, which are known for their characteristic reddish colour due to the presence of iron oxides.

Black soils constitute the second largest portion at 16%. Black soils are known for their fertility and water-holding capacity and finally Sandy soils make up the smallest portion, accounting for only 9%. Sandy soils are characterized by their loose texture and good drainage.

Table.2.3. **Type of Farmers and Their Share in Land**

S.no	Farmer type	Farmers	land holding(Acers)	% land holding	% farmers
1	Big farmers	47	1351	3.05	0.22
2	Medium farmers	2781	15474	34.82	13.51
3	Small farmers	4945	12873	28.96	24.02
4	Marginal farmers	12810	14741	43.17	62.23

Source: MAO Office T.Palem Mandal

Marginal farmers are the most numerous type of farmer, accounting for 43.16% of all farmers. Big farmers are the least numerous type of farmer, accounting for only 3.05% of all farmers. Medium farmers and small farmers are the most common types of farmers,

accounting for 34.81% and 28.90% of all farmers, respectively.

Big farmers have the largest share of land holdings, accounting for 34.81% of all land holdings. Marginal farmers have the smallest share of land holdings, accounting for only 3.05% of all land holdings.

Table.2.4. Land Particulars of Thirumalaya Palem Mandal

Particulars	Area in Acres
Geographical Area	57333.26
Forest	0
Cultivable Area	48670.39
Barren & Uncultivable Land	8521.02
Land Put to Non-Agriculture. Uses	141.25
Misc. Trees Crops Etc...	65
Cultivable Waste	250
Additional Fallow Land	2344
Present Fallows	10584
Net Area Cultivated	32517
Overall Cropped Area	32540
Area Sown Multiple Times	793

Land Use Analysis:

- **Total Geographical Area:** The total geographical area is 57,333.26 acres.
- **Dominant Land Use:** Cultivable land represents the largest portion of the geographical area, accounting for 48,670.39 acres, indicating a significant agricultural potential.
- **Forest Absence:** There is no reported forest area, suggesting that this region is primarily dedicated to other land uses, particularly agriculture.
- **Non-Agricultural Land Use:** Land put to non-agricultural uses is relatively small, at 141.25 acres.
- **Barren and Uncultivable Land:** A substantial portion, 8,521.02 acres, is classified as barren and uncultivable, highlighting limitations in land usability.

- **Fallow Land:** A significant area, totalling 12,928 acres (Other Fallow Land + Current Fallows), is currently fallow, indicating potential for increased agricultural activity if these lands can be brought under cultivation.
- **Net Area Sown:** The net area sown is 32,517 acres, reflecting the actual land used for cultivation.

Study area map

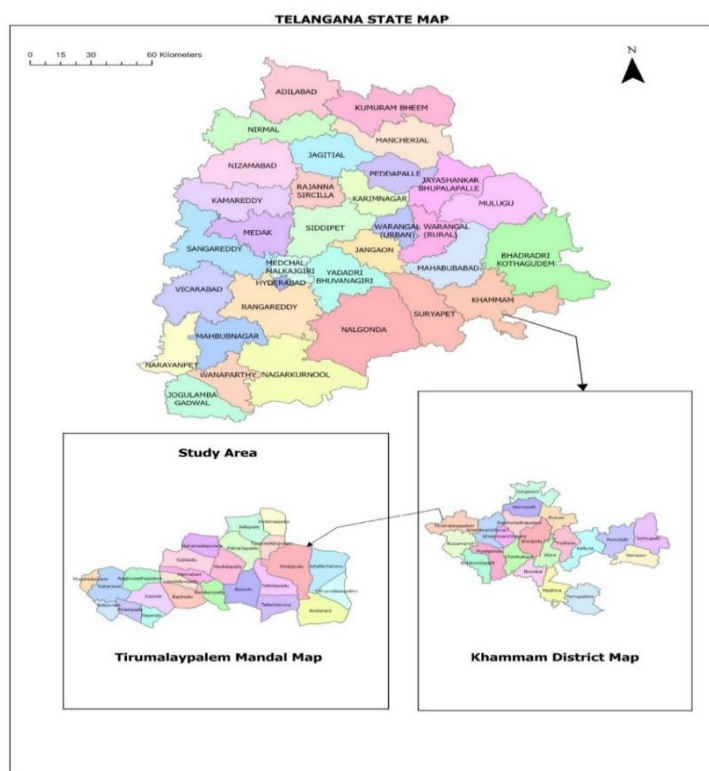


Figure:2.7: Location of the study area

2.Data collection & Methodology

The study design has been outlined in the methodology. The study will be carried out by the collecting primary and secondary data. The secondary data will be collected from existing sources like govt. and private data source. The data thus collected will be process by applying statistical and cartography techniques.

3.Demographical Aspects

The systematic analysis of populations is referred to as demography. This term derived from Greek suggests a description of humanity composed of the components demos (meaning people) and graphein (to describe). Demography examines patterns and trends within populations including changes in population size migration flows birth rates and mortality rates

alongside the demographic structure which details the proportions of men women and different age groups.

1. Density of Population

Density of Population = Total population / Total Geographical Area

Table.2.5. Density of Population

Sl. No	Name of the Village/ Gram Panchayat	Area (Sq. Km)	Population 1991		Population 2001		Population 2011	
			Persons	Density	Persons	Density	Persons	Density
1	Mujahidpuram	3.89	587	151	668	172	734	188
2	Kakarvai	15.35	4768	311	5041	328	5202	339
3	Painampalle	5.13	1134	221	1243	242	1273	248
4	Solipuram	3.5	833	238	1043	298	1168	333
5	Rajaram	4.63	1049	227	1040	224	969	209
6	Jupeda	9.71	1412	145	1539	158	1501	155
7	Raghunadhapalem	7.18	1200	167	1233	172	1176	169
8	Lakshmidvipalle	3.79	548	145	608	160	605	160
9	Bachodu	10.52	2909	277	3165	301	3552	338
10	Bandampalle	5.4	338	63	440	81	467	86
11	Hasnabad	4.65	1254	270	1338	288	1187	255
12	Sublaid	13.25	3537	267	3430	258	3127	248
13	Mohammadapuram	8.6	3014	350	3426	398	3612	445
14	Medidepalle	10.14	2412	238	2768	273	3169	313
15	Beerolu	14.65	4229	289	4388	299	4370	298
16	Thalla Cheruvu	8.41	1503	179	1538	182	1498	178
17	Thettelapadu	12.02	3030	252	3491	290	3668	306
18	Patharlapadu	15.56	4623	297	5151	331	5037	320
19	Jallepalle	9.31	2100	226	2096	225	2057	221
20	Hydersaipeta	6.85	2106	307	2260	330	2573	356
21	Tippareddigudem	5.75	1458	254	1624	282	1600	282

Sl. No	Name of the Village/ Gram Panchayat	Area (Sq. Km)	Population 1991		Population 2001		Population 2011	
			Persons	Density	Persons	Density	Persons	Density
22	Pindiprolu	16.35	4165	255	4637	283	4716	241
23	Edulla Cheruvu	10.03	1270	127	1460	145	1575	157
24	Thirumalayapalem	9.43	3066	325	3665	388	3496	371
25	Kokkireni	12.98	3183	245	3276	252	3170	185
	Total	227	55728	245	60568	254	61502	263

Source: Census of India 1991, 2001, 2011.

According to Census 1991 the total density is 245

1. High density of population villages is recorded in Mahammadapuram (350), Thirumalayapalem village (325)
2. Low density of population is recorded in Bandhan palle(63), Edullacheruvu(127)

According to 2001 census the total density is 254

3. High density of population villages is recorded in Mahammadapuram (398),Thirumalayapalem village (388)
4. Low density of population is recorded in Bandhan palle(81), Edullacheruvu(145)

According to 2011 census the total density is 263

5. High density of population villages is recorded in Mahammadapuram (445), Thirumalayapalem village (381)
- 6.Low density of population is recorded in Bandham palle(86), Jupeda(155)

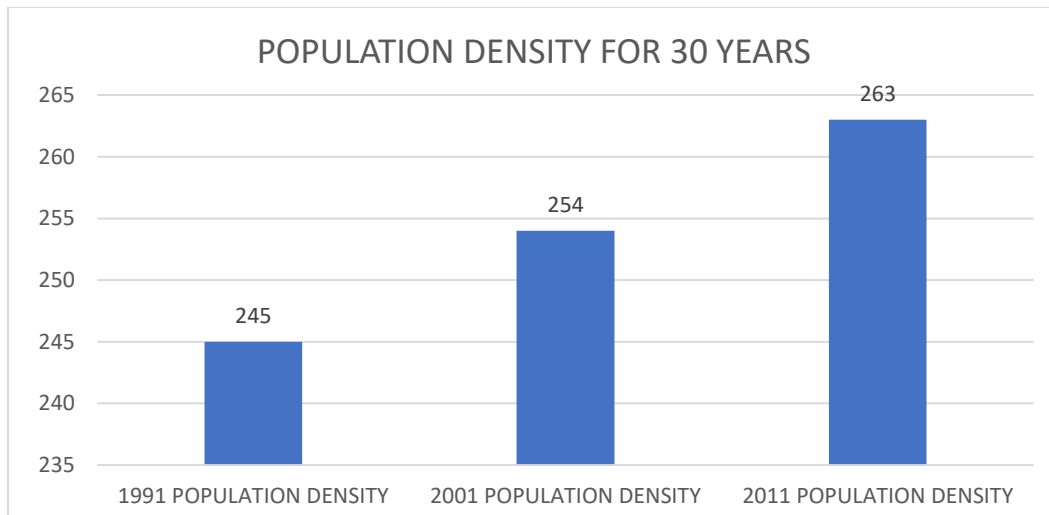


Figure.2.9. Density of Population for 30 years.

2.3.4. Sex-Ratio of Population

Sex ratios are fundamental demographic indicators that reflect the relative survival rates of females and males as well as the potential for future reproduction within a population. Specifically the sex ratio indicates how many females exist for every 1000 males in a particular region during a defined timeframe.

$$\text{Sex Ratio} = \frac{\text{Total Number of Females}}{\text{Total Number of Males}} \times 1000$$

Table.2.6: Sex Ratio (Male and Female) of Three-Decades (30 Years) Census of Thirumalaya Palem Mandal– 1991, 2001 and 2011

Sl. No.	Name of the Village/ Gram Panchayat	Sex Ratio -1991 Census				Sex Ratio- 2001 Census				Sex Ratio-2011 Census			
		Male	Female	Total	Sex Ratio	Male	Female	Total	Sex Ratio	Male	Female	Total	Sex Ratio
1	Mujahidpuram	298	289	587	970	326	342	668	1049	355	379	734	1068
2	Kakarvai	2414	2354	4768	975	2537	2504	5041	987	2627	2575	5202	980
3	Painampalle	550	584	1134	1062	608	635	1243	1044	635	638	1273	1005
4	Solipuram	415	418	833	1007	530	513	1043	968	589	579	1168	983
5	Rajaram	534	515	1049	964	537	503	1040	937	466	503	969	1079
6	Jupeda	711	701	1412	986	778	761	1539	978	769	732	1501	952
7	Raghunadhapalem	608	592	1200	974	607	626	1233	1031	589	587	1176	997
8	Lakshmidvipalle	280	268	548	957	316	292	608	924	298	307	605	1030
9	Bachodu	1465	1444	2909	986	1613	1552	3165	962	1785	1767	3552	990
10	Bandampalle	183	155	338	847	235	205	440	872	237	230	467	970
11	Hasnabad	611	643	1254	1052	652	686	1338	1052	585	602	1187	1029
12	Sublaid	1901	1636	3537	861	1810	1620	3430	895	1577	1550	3127	983
13	Mohammadapuram	1562	1452	3014	930	1721	1705	3426	991	1845	1767	3612	958
14	Medidepalle	1204	1208	2412	1003	1364	1404	2768	1029	1550	1619	3169	1045
15	Beerolu	2190	2039	4229	931	2196	2192	4388	998	2164	2206	4370	1019
16	Thalla Cheruvu	768	735	1503	957	779	759	1538	974	748	750	1498	1003
17	Thettelapadu	1570	1460	3030	930	1821	1670	3491	917	1852	1816	3668	981
18	Patharlapadu	2314	2309	4623	998	2653	2498	5151	942	2554	2483	5037	972
19	Jallepalle	1050	1050	2100	1000	1099	997	2096	907	1048	1009	2057	963
20	Hydersaipeta	1081	1025	2106	948	1175	1085	2260	923	1346	1227	2573	912
21	Tippareddigudem	744	714	1458	960	833	791	1624	950	809	791	1600	978
22	Pindiprolu	2157	2008	4165	931	2382	2255	4637	947	2376	2340	4716	985
23	Edulla Cheruvu	621	649	1270	1045	746	714	1460	957	796	779	1575	979
24	Thirumalayapalem	1543	1523	3066	987	1812	1853	3665	1023	1549	1947	3496	1257
25	Kokkireni	1619	1564	3183	966	1639	1637	3276	999	1588	1582	3170	996
	Total	28393	27335	55728	963	30769	29799	60568	968	30737	30765	61502	1001

Source: Census of India 1991, 2001, 2011

According to Census 1991 the total sex ratio is 963

1. High Sex-ratio villages is recorded in Pinampalle(1062), in Hasnabad village(1052)
1. Low Sex-ratio is recorded in Bandhampally (847), in Sublaid village(861)

According to 2001 census the total sex ratio is 968

2. High Sex-ratio villages is recorded in Hasnabad (1052), in mujahidpuram village(1049)
2. Low Sex-ratio is recorded in Bandhampally (872), in Sublaid village(895)

According to 2011 census the total Sex ratio is 1001

3. High Sex-ratio villages is recorded in Thirumalaya palem (1275), Rajaram (1079)
- Low Sex-ratio is recorded in Hydersaipeta (912), Jupeda (952)

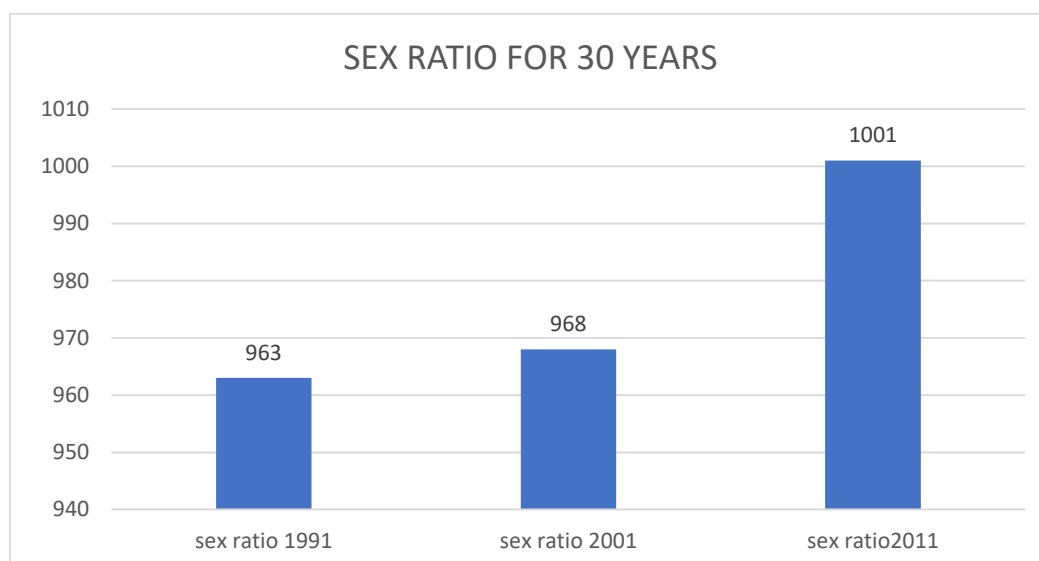


Figure.2.11: Sex-ratio for 30 years of Thirumalaya palem mandal

2.3.5. Child-Population (0- 6 Y)

Although defining the sex ratio by focusing on children aged 0-6 might seem chosen at random the Census utilizes this classification for literacy evaluation separating individuals into two groups: those aged 0-6 and those who are 7 years and older from 1991 onward.

Table.2.7: Child Population (0-6 years)

Name of the Village/ Gram Panchayat	(0-6 Years) Sex Ratio - 1991 Census				- 0-6 (Years) Sex Ratio 2001 Census				(0-6 Years) Sex Ratio 2011 Census			
	Male	Female	Total	Sex Ratio	Male	Female	Total	Sex Ratio	Male	Female	Total	Sex Ratio
Mujahidpuram	65	69	134	1062	54	73	127	1351	37	47	84	1270
Kakarvai	438	401	839	916	322	343	665	1065	315	248	563	787
Painampalle	86	114	200	1326	92	96	188	1043	70	61	131	871
Solipuram	107	115	222	1075	89	89	178	1000	77	70	147	909
Rajaram	87	85	172	977	58	53	111	913	44	55	99	1250
Jupeda	91	101	192	1110	93	105	198	1129	80	65	145	812
Raghunadhapalem	96	127	223	1323	88	89	177	1011	59	65	124	1101
Lakshmidvipalle	72	51	123	708	54	47	101	870	42	40	82	952
Bachodu	270	296	566	1096	244	237	481	971	202	198	400	980
Bandampalle	37	25	62	676	38	35	73	921	27	29	56	1074
Hasnabad	91	113	204	1242	76	82	158	1078	63	50	113	793
Sublaid	272	233	505	857	216	220	436	1018	161	153	314	950
Mohammadapuram	326	317	643	972	295	270	565	915	221	182	403	823
Medidepalle	203	211	414	1039	180	192	372	1066	153	174	327	1137
Beerolu	306	279	585	912	315	275	590	873	201	203	404	1009
Thalla Cheruvu	95	104	199	1095	86	102	188	1186	56	65	121	1160
Thettelapadu	247	209	456	846	258	205	463	794	189	184	373	973
Patharlapadu	422	432	854	1024	400	350	750	875	309	297	606	961
Jallepalle	169	172	341	1018	141	126	267	893	114	111	225	973
Hydersaipeta	204	158	362	775	184	142	326	771	134	125	259	932
Tippareddigudem	127	123	250	1033	132	116	248	878	100	83	183	830
Pindiprolu	342	303	645	886	288	266	554	923	223	217	440	973
Edulla Cheruvu	76	101	177	1329	130	91	221	700	102	91	193	892
Thirumalayapalem	225	231	456	1027	220	202	422	918	164	154	318	939
Kokkireni	272	259	531	952	158	201	359	1272	139	135	274	971
Total	4726	4647	9373	983	4211	4007	8218	951	3282	3102	6384	945

Source: Census of India 1991, 2001, 2011

According to 1991 census the total sex ratio is 963

3. High Sex-ratio villages is recorded in Pinampalle(1062), in Hasnabad village(1052)
4. Low Sex-ratio is recorded in Bandhampally (847), in Sublaid village(861)

According to 2001 census the total sex ratio is 968

4. High Sex-ratio villages is recorded in Hasnabad (1052), in mujahidpuram village(1049)
5. Low Sex-ratio is recorded in Bandhampally (872), in Sublaid village(895)

According to 2011 census the total Sex ratio is 1001

6. High Sex-ratio villages is recorded in Thirumalaya palem (1275), Rajaram (1079)
- Low Sex-ratio is recorded in Hydersaipeta (912), Jupeda (952)

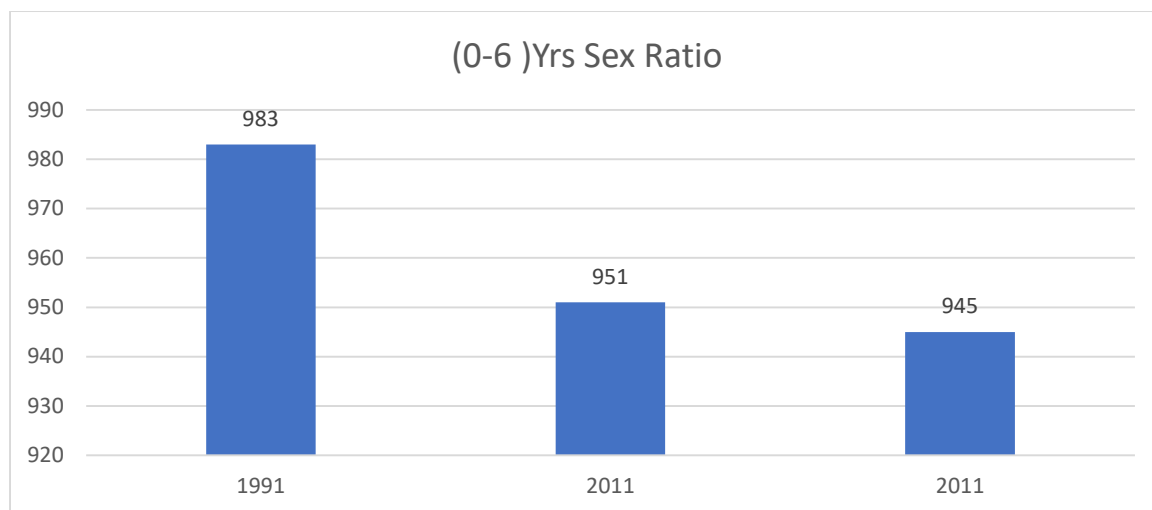


Figure:2.13:(0-6)Years Sex Ratio

2.3.6.Scheduled Caste and scheduled Tribes

Table.2.8: Scheduled Caste and scheduled Tribes

S. No.	Name of the Village/ Gram Panchayat	SC Population			SC Population			SC Population			ST Population			ST Population			ST Population		
		1991 Census			2001 Census			2011 Census			1991 Census			2001 Census			2011 Census		
		Male	Female	Sex Ratio	Male	Female	Sex Ratio	Male	Female	Sex Ratio	Male	Female	Sex Ratio	Male	Female	Sex Ratio	Male	Female	Sex Ratio
1	Mujahidpuram	87	79	908	79	74	937	87	82	943	149	164	1101	172	196	1140	198	230	1162
2	Kakarvai	241	252	1046	294	309	1051	280	303	1082	674	613	909	728	699	960	837	816	975
3	Painampalle	113	125	1106	106	106	1000	131	133	1015	218	216	991	245	257	1049	286	283	990
4	Solipuram	72	69	958	93	79	849	112	111	991	284	283	996	370	357	965	411	380	925
5	Rajaram	122	109	893	105	109	1038	103	122	1184	0	0	0	0	0	0	7	4	571
6	Jupeda	188	202	1074	263	259	985	267	229	858	3	2	667	0	0	0	0	0	0
7	Raghunadhapalem	230	234	1017	240	233	971	260	257	988	9	14	1556	6	17	2833	14	16	1143
8	Lakshmidvipalle	0	0	0	0	0	0	4	4	1000	280	268	957	314	290	924	294	303	1031
9	Bachodu	263	240	913	264	252	955	341	322	944	545	539	989	635	612	964	623	660	1059
10	Bandampalle	83	64	771	90	74	822	93	95	1021	12	9	750	36	28	778	38	31	816
11	Hasnabad	221	229	1036	281	301	1071	245	239	976	0	0	0	0	0	0	0	0	0
12	Sublaid	628	483	769	670	596	890	582	581	998	223	107	480	244	126	516	144	142	986
13	Mohammadapuram	156	165	1058	199	241	1211	257	274	1066	1050	975	929	1254	1207	963	1277	1232	965
14	Medidepalle	285	254	891	291	280	962	357	392	1098	348	346	994	436	429	984	552	536	971
15	Beerolu	643	573	891	683	664	972	662	641	968	118	102	864	130	129	992	117	127	1085
16	Thalla Cheruvu	242	236	975	248	257	1036	251	260	1036	0	0	0	0	0	0	0	0	0
17	Thettelapadu	358	321	897	437	391	895	488	484	992	41	36	878	72	49	681	55	60	1091
18	Patharlapadu	258	249	965	266	231	868	277	269	971	901	925	1027	1097	1026	935	979	1003	1025
19	Jallepalle	236	202	856	245	217	886	219	215	982	142	131	923	163	144	1059	138	136	985
20	Hydersaipeta	112	110	902	107	101	944	129	132	1023	744	677	910	846	784	927	938	830	885
21	Tippareddigudem	64	58	906	53	52	981	80	76	950	352	336	955	420	375	893	115	106	922
22	Pindiprolu	577	515	893	653	602	922	602	609	1012	19	29	1526	28	36	1286	34	35	1029
23	Edulla Cheruvu	142	128	901	169	151	893	159	148	931	315	344	1092	374	383	1024	452	438	1031
24	Thirumalayapalem	391	372	951	478	444	929	335	365	1090	62	54	871	105	181	1724	90	300	3333
25	Kokkireni	712	680	955	804	797	991	764	746	976	48	31	646	42	37	881	53	45	849
	TOTAL	6424	5949	926	7118	6820	958	7085	7089	1001	6537	6201	949	7717	7362	954	7652	7713	1008

Source: Census of India 1991, 2001, 2011

According to Census 1991 the total sex-ratio of SC is 926, the total sex-ratio of ST is 949

1. High SC Sex-ratio villages are recorded in Painampally (1106), in Mohammadapuram village(1058), highest ST sex-ratio recorded in Raghunadha palem(1556), Pindiprolu(1526)
2. Low SC Sex-ratio is recorded in Laxmidevipally(0), Sublaid(769), lowest ST sex-ratio Rajaram (0), Hasnabd(0) and Thallacheruvu(0).

According to 2001 census the total sex-ratio of SC is 883, the total sex-ratio of ST is 962

1. High SC Sex-ratio villages is recorded in Mohammadapuram (1211), in Hasnabad village(1071), highest ST Sex-ratio Raghunadha palem (2833),Pindiprolu (1286)
2. Low SC Sex-ratio is recorded in Laxmidevi pally (0), Solipuram (849), lowest ST Sex-ratio Rajaram(0), Jupeda(0) ,Hasnabad(0) and Thallacheruvu (0)

According to 2011 census the total sex ratio of SC is 1001, the total Sex-ratio of ST is 1008

1. High SC Sex-ratio villages is recorded in Rajaram (1184), in Medidapally village(1098), highest ST Sex-ratio Thirumalaya palem(3333), Mujahidpuram(1162)
2. Low SC Sex-ratio is recorded in Jupeda (858), Bachodu (944), lowest ST Sex-ratio Jupeda(0), Hasnabad(0) and Thallacheruvu (0)

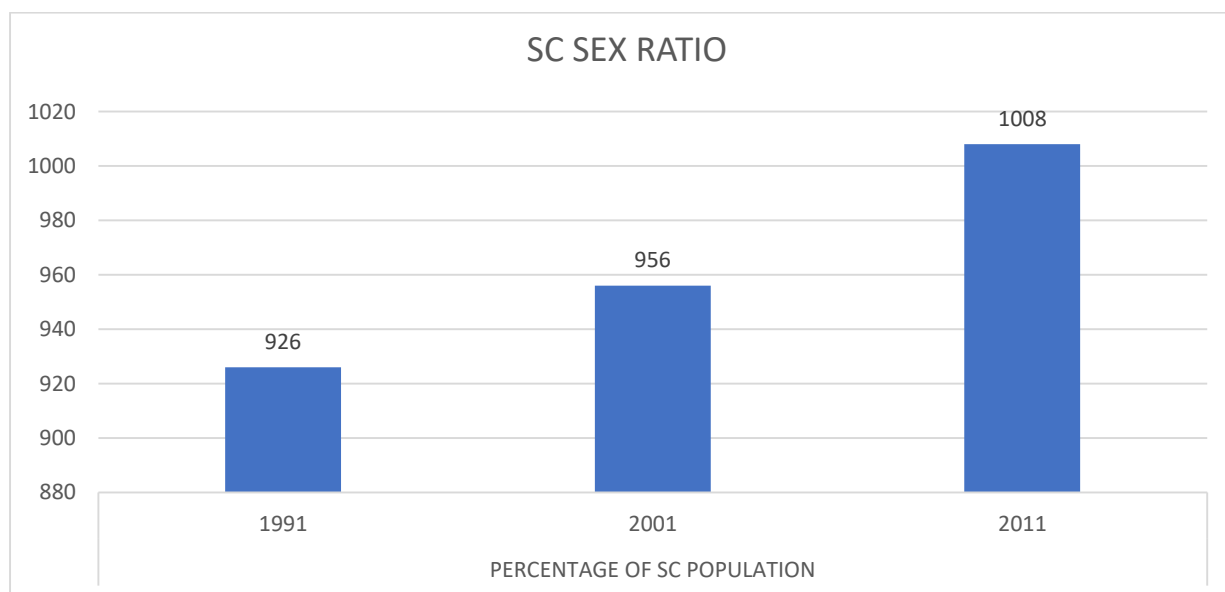


Figure:2.15: SC Population Sex Ratio

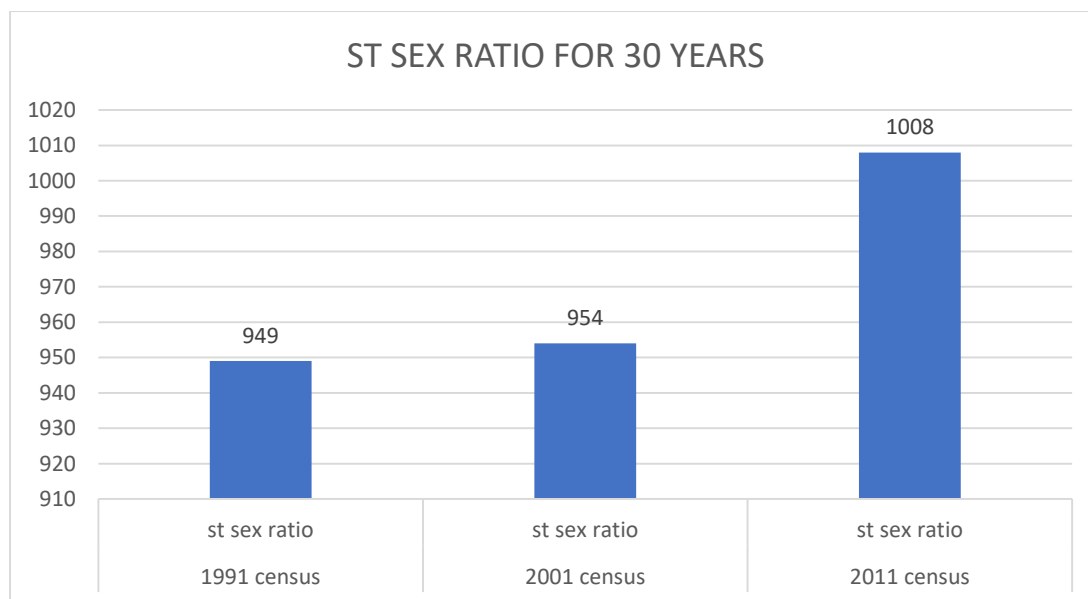


Figure:2.17: ST Population Sex Ratio

2.3.7. Percentage of Scheduled Castes (SC) and Scheduled Tribes (ST) of Thirumalaya Palem Mandal-1991, 2001, 2011 census

Table 2.9: Percentage of Scheduled Castes (SC) and Scheduled Tribes (ST) of Thirumalaya palem Mandal-1991, 2001, 2011 census

S. No.	Name of the Village/ Gram Panchayat	1991 Census-SC Population			2001 Census-SC Population			2011 Census-SC Population			1991 Census-ST Population			2001 Census-ST Population			2011 Census-ST Population		
		Total pop	SC pop	%of SC	Total pop	SC pop	%of SC	Total pop	SC pop	%of SC	Total pop	ST pop	%of ST	Total pop	ST pop	%of ST	Total pop	ST pop	%of ST
1	Mujahidpuram	587	166	28	668	153	23	734	169	23	587	313	53	668	368	55	734	428	58.3
2	Kakarvai	4768	493	10	5041	603	12	5202	583	11.2	4768	1287	27	5041	1427	28.3	5202	1653	31.7
3	Painampalle	1134	238	21	1243	212	17	1273	264	20.7	1134	434	38	1243	502	40.3	1273	569	28.4
4	Solipuram	833	141	17	1043	172	16	1168	223	19	833	567	68	1043	727	69.7	1168	791	47.4
5	Rajaram	1049	231	22	1040	214	21	969	225	23.2	1049	0	0	1040	0	0	969	11	1.1
6	Jupeda	1412	390	28	1539	522	34	1501	496	33	1412	5	0	1539	0	0	1501	0	0
7	Raghunadhapalem	1200	464	39	1233	473	39	1176	517	43.9	1200	23	2	1233	23	1.8	1176	30	2.5
8	Lakshmidvipalle	548	0	0	608	0	0	605	8	1.3	548	548	100	608	604	99.3	605	597	92.3
9	Bachodu	2909	503	17	3165	516	16	3552	663	18.6	2909	1084	37	3165	1247	39.3	3552	1283	36.1
10	Bandampalle	338	147	43	440	164	37	467	188	40.2	338	21	6	440	64	14.5	467	69	14.7
11	Hasnabad	1254	450	36	1338	582	43	1187	484	40.7	1254	0	0	1338	0	0	1187	0	0
12	Sublaid	3537	1111	31	3430	1266	37	3127	1163	37.1	3537	330	9	3430	370	10.7	3127	286	9.1
13	Mohammadapuram	3014	321	11	3426	440	13	3612	531	14.7	3014	2025	67	3426	2461	71.8	3612	2509	69.4
14	Medidepalle	2412	539	22	2768	571	21	3169	749	23.6	2412	694	29	2768	865	31.2	3169	1088	34.3
15	Beerolu	4229	1216	29	4388	1347	31	4370	1303	29.8	4229	220	5	4388	259	5.9	4370	244	5.5
16	Thalla Cheruvu	1503	478	32	1538	505	33	1498	511	34.1	1503	0	0	1538	0	0	1498	0	0
17	Thettelapadu	3030	679	22	3491	828	28	3668	972	26.4	3030	77	3	3491	121	3.4	3668	115	3.1
18	Patharlapadu	4623	507	11	5151	497	10	5037	546	10.8	4623	1826	39	5151	2123	41.2	5037	1982	39.3

19	Jallepalle	2100	438	21	2096	462	22	2057	434	21	2100	273	13	2096	307	14.8	2057	274	13.3
20	Hydersaipeta	2106	222	11	2260	208	9	2573	261	10.1	2106	1421	67	2260	1630	72.1	2573	1768	68.7
21	Tippareddigudem	1458	122	8	1624	105	6	1600	156	9.7	1458	688	47	1624	795	48.9	1600	221	13.8
22	Pindiprolu	4165	1092	26	4637	1255	27	4716	1211	25.6	4165	48	1	4637	64	1.3	4716	69	1.4
23	Edulla Cheruvu	1270	270	21	1460	320	22	1575	307	19.4	1270	659	52	1460	757	51.8	1575	890	56.5
24	Thirumalayapalem	3066	763	25	3665	922	25	3496	700	20	3066	116	4	3665	286	7.8	3496	390	11.1
25	Kokkireni	3183	1392	44	3276	1601	49	3170	1510	47.6	3183	79	2	3276	79	2.4	3170	98	3
	TOTAL	55728	12373	22.2	60568	13938	23.1	61502	14174	23.04	55728	12738	22.8	60568	15079	24.8	61502	15365	24.9

Source: Census of India 1991, 2001, 2011

According to Census 1991 the total SC percentage is 22.2, total ST percentage of population is 22.8

1. High Percentage of SC villages are recorded in kokkireni (44), highest Percentage of ST recorded in Laxmidevipally(100)
2. Low Percentage of SC is recorded in Thippareddy gudem (8), Laxidevipalle have zero percentage of SC population, lowest Percentage of ST in Pindiprolu (0.3) there are 4 villages having zero ST percentage

According to 2001 census the total Percentage of SC is 23.1, the total Percentage of ST is 24.8

1. High Percentage of SC is recorded in Kokkireni (49), highest ST Sex-ratio Laxmidevipally (99.3)
2. Low Percentage of SC is recorded in Thippareddy gudem (6.2), Laxmidevi pally have got zero percentage of SC and lowest ST Sex-ratio Pindiprolu (1.3), there are 8 villages having zero ST percentage

According to 2011 census the total Percentage of SC is 23.04, the total Percentage of ST (24.9)

- 1.High Percentage of SC is recorded in Kokkireni (47.6), highest ST percentage is Laxmidevipally (92.3)
2. Low Percentage of SC is recorded in Laxmidevipally (1.3), and lowest Percentage of ST Rajaram (1.1), there are 3 villages having zero ST percentage.

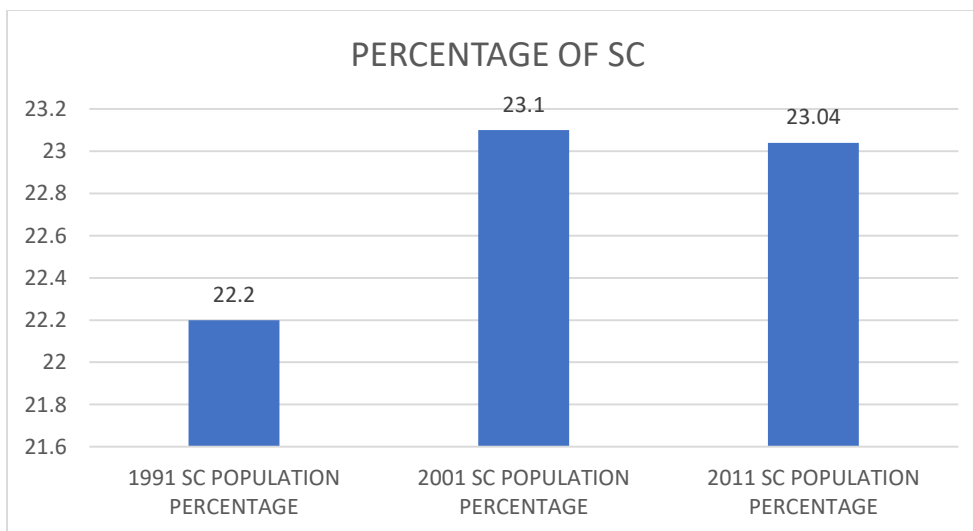


Figure:2.19: Percentage of SC Population

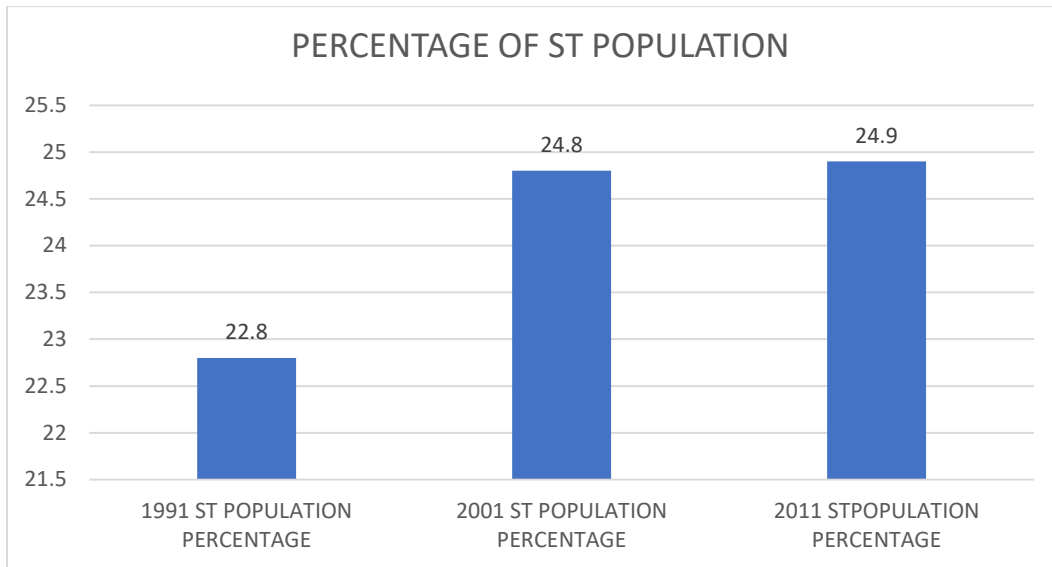


Figure:2.21: Percentage of ST Population

2.3.8. Literacy Rate

The literacy rate is defined by the fraction of people within a designated age demographic who can read and write. It represents the opportunity for continued intellectual progress and the ability to impact the socio-economic and cultural growth of society.

$$\text{Literacy Rate} = \frac{\text{The Total Number of Literates}}{\text{Total Population}} * 100$$

2.3.6. Literacy Rate

Table 2.10: Literacy rate of Three-Decades (30 Years) Census of Thirumalaya palem Mandal– 1991, 2001 and 2011

S. No.	Name of the Village/ Gram Panchayat	1991 Census				2001 Census				2011 Census			
		Male	Female	Total	Literacy Rate	Male	Female	Total	Literacy Rate	Male	Female	Total	Literacy Rate
1	Mujahidpuram	28	7	35	5.96	96	51	147	36.69	153	116	269	41.38
2	Kakarvai	684	330	1014	21.26	1213	746	1959	38.86	1393	1013	2406	51.86
3	Painampalle	130	57	187	16.49	253	153	406	32.66	330	241	571	50
4	Solipuram	44	26	70	8.4	171	444	240	23.01	285	187	472	46.23
5	Rajaram	178	84	262	24.9	241	69	391	37.59	217	170	387	44.48
6	Jupeda	196	81	277	19.6	396	222	618	40.15	405	293	698	51.47
7	Raghunadhapalem	240	94	334	27.8	305	202	507	41.11	300	193	493	46.86
8	Lakshmidvipalle	17	2	19	3.46	109	55	164	26.97	120	46	166	31.74
9	Bachodu	287	81	368	12.6	535	246	781	24.67	1010	746	1756	55.71
10	Bandampalle	43	8	51	15	118	55	173	39.31	136	75	211	51.34
11	Hasnabad	222	125	347	27.6	331	228	559	41.77	314	246	560	52.14
12	Sublaid	788	298	1086	30.7	999	498	1497	43.64	901	581	1482	52.68
13	Mohammadapuram	481	217	698	23.1	681	440	1121	32.72	1061	723	1784	55.59
14	Medidepalle	209	178	387	16	615	432	1047	37.82	818	626	1444	50.81
15	Beerolu	767	321	1088	25.7	1125	756	1881	42.86	1401	1062	2463	62.1
16	Thalla Cheruvu	365	193	558	37.1	469	323	792	51.49	497	368	865	62.82
17	Thettelapadu	522	211	733	24.1	999	555	1554	44.51	1184	857	2041	61.94
18	Patharlapadu	841	363	1204	26	1458	788	2246	43.6	1533	903	2436	54.98
19	Jallepalle	375	159	534	25.4	555	231	816	38.93	616	396	1012	55.24
20	Hydersaipeta	253	123	376	17.8	560	290	850	37.61	708	416	1124	48.57
21	Tippareddigudem	231	104	335	22.9	399	226	625	38.48	458	283	741	52.29
22	Pindiprolu	828	365	1193	28.6	1368	892	2260	48.73	1508	1093	2601	60.83
23	Edulla Cheruvu	93	29	122	9.6	316	220	536	36.71	375	250	625	45.22
24	Thirumalayapalem	690	427	1117	36.4	1023	887	1910	52.11	986	1135	2121	66.74
25	Kokkireni	689	323	1012	31.7	1028	675	1703	51.98	1060	795	1855	64.05
	Total	9201	4206	13407	24	15363	9420	24783	40.91	17769	12814	30583	55.49

Source:

According to Census 1991 the total literacy rate is 24

1. High literacy rate is recorded in Thallacheruvu (37.1), Highest male literates in Patharlapadu (841), highest female literates in Thirumalaya palem (427)
2. Low literacy rate is recorded in Mujahidpuram (5.9), Lowest male literates in Laxmidevipalle (17), lowest female literates in Laxmidevipalle (2)

According to 2001 census the total literacy rate is 40.91

1. High literacy rate is recorded in Thirumalaya palem(52.11), in Highest male literates in Patharlapadu(1458), Highest female literates in Pindiprolu (892)
2. Low literacy rate is recorded in Solipuram(23.1), Low male literates in Mujahidpuram (96), low female literates in Mujahidpuram (51)

According to 2011 census the total literacy 55.49

1. High literacy is recorded in Thirumalayapalem (66.74), Highest male literates in Patharlapadu (1533), Highest female literates in Thirumalayapalem (1135)
2. Low literacy is recorded in Laxmidevipalle (31.7), Low male literates in Laxmidevipalle (120), Low female literates in Laxmidevipalle (46)

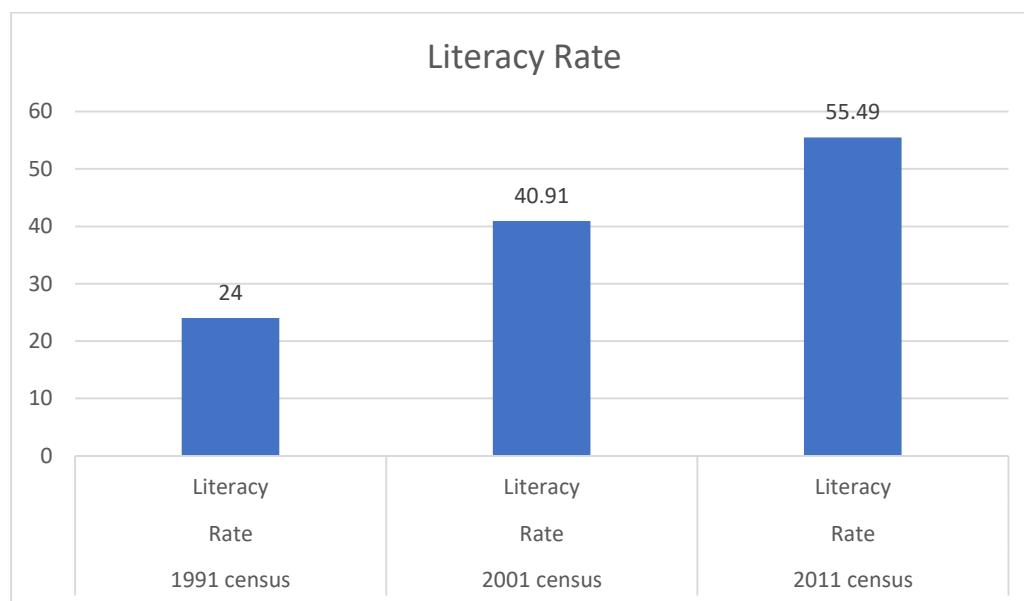


Figure:2.23: Literacy Rate

2.3.9. Work Participation Rate

Table 2.11: Work Participation Rate – 1991 of Thirumalaya palem Mandal

S. No.	Village	Population			Number of workers			Work Participation Rate %		
		Males	Females	Total	Total	Males	Females	Total	Males	Females
		1	Mujahidpuram	298	289	587	339	175	164	57.7
2	Kakarvai	2414	2354	4768	2591	1407	1184	54.3	58.2	50
3	Painampalle	550	584	1134	584	361	223	51.4	65.6	38.1
4	Solipuram	415	418	833	446	243	203	53.4	58.5	48.5
5	Rajaram	534	515	1049	605	309	296	57.6	57.8	57.4
6	Jupeda	711	701	1412	521	413	108	36.8	58	15.4
7	Raghunadhapalem	608	592	1200	688	385	303	57.3	63.3	51.1
8	Lakshmidvipalle	280	268	548	310	157	153	56.5	56	57
9	Bachodu	1465	1444	2909	1760	954	806	60.5	65.1	55.8
10	Bandampalle	183	155	338	137	87	50	40.5	47.5	32.2
11	Hasnabad	611	643	1254	623	387	236	49.6	63.3	36.7
12	Sublaid	1901	1636	3537	1627	959	688	45.9	50.4	42
13	Mohammadapuram	1562	1452	3014	1120	769	351	37.1	49.2	24.1
14	Medidepalle	1204	1208	2412	1242	761	481	51.4	63.2	39.8
15	Beerolu	2190	2039	4229	2200	1313	887	52	59.9	43.5
16	Thalla Cheruvu	768	735	1503	905	479	426	60	62.3	57.9
17	Thettelapadu	1570	1460	3030	1741	965	776	57.4	61.4	53.1
18	Patharlapadu	2314	2309	4623	2363	1322	1041	51.1	57.1	45
19	Jallepalle	1050	1050	2100	1111	594	517	52.9	56.5	49.2
20	Hydersaipeta	1081	1025	2106	1126	668	458	53.4	61.7	44.6
21	Tippareddigudem	744	714	1458	681	456	225	46.7	61.2	31.5
22	Pindiprolu	2157	2008	4165	2330	1272	1058	55.9	58.9	52.6
23	Edulla Cheruvu	621	649	1270	737	409	328	58	65.8	50
24	Thirumalayapalem	1543	1523	3066	1429	833	596	46.6	53.9	39.1
25	Kokkireni	1619	1564	3183	1468	891	577	46.1	55	36.8
	Total	28393	27335	55728	28668	16569	12099	51.4	58.3	44.2

Source: Census of India 1991, 2001, 2011

According to 1991 census

1. The total number of working group of population was 28668, the total male working group was 16569 and female was 12099
2. The highest number of WPR is recorded in Kakarvai village(2591) and the highest male WPR is recorded in Kakarvai (1407) and Highest female WPR in Kakarvai village (1471)
3. The lowest number of WPR is recorded in Bhandampalle (137) and the lowest male WPR is recorded in Bhandhampalle (87) and lowest female WPR in Bhandhampalle (50)
4. The highest percentage of WPR is in Bachodu(60.5) and the highest male percentage of WPR is in Painampalle (65.6) and highest female percentage of WPR is in Thallacheruvu (57.9)
5. The lowest Percentage of WPR is in Jupeda (36.8) and the lowest male percentage of WPR is in Mohammadapuram (49.2) and the lowest female percentage of WPR is in Mohammadapuram (24.1)

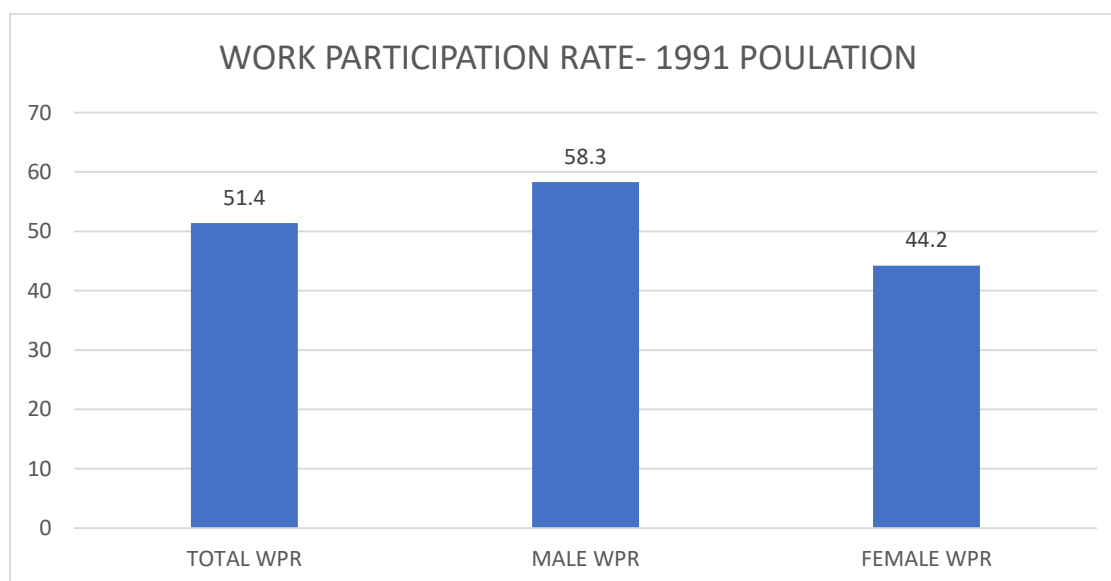


Figure:2.25: Work Participation Rate -1991 Population

2.3.9. Work Participation Rate

S. No.	Village	Population			Number of workers			Work Participation Rate %		
		Males	Females	Total	Total	Males	Females	Total	Males	Females
		1	Mujahidpuram	355	379	734	441	2166	225	60
2	Kakarvai	2627	2575	5202	2473	1403	1070	47.5	53.4	41.5
3	Painampalle	635	638	1273	538	334	204	42.2	52.5	31.9
4	Solipuram	589	579	1168	419	238	181	35.8	40.4	31.2
5	Rajaram	466	503	969	564	275	289	58.2	59.0	79.2
6	Jupeda	769	732	1501	814	455	359	54.2	59.1	49
7	Raghunadhapalem	589	587	1176	345	181	164	29.3	30.7	27.9
8	Lakshmidvipalle	298	307	605	385	193	192	63.6	64.7	62.5
9	Bachodu	1785	1767	3552	1790	907	883	50	50.8	49.9
10	Bandampalle	237	230	467	266	137	129	56.9	57.8	56
11	Hasnabad	585	602	1187	704	343	361	59.3	22.9	59.9
12	Sublaid	1577	1550	3127	1251	673	578	40	42.6	37.2
13	Mohammadapuram	1845	1767	3612	1791	953	838	49.5	51.6	47.4
14	Medidepalle	1550	1619	3169	1707	909	798	53.8	58.6	49.2
15	Beerolu	2164	2206	4370	2422	1227	1195	55.4	56.7	54.1
16	Thalla Cheruvu	748	750	1498	867	471	396	57.8	62.9	52.8
17	Thettelapadu	1852	1816	3668	1992	1038	954	54.3	56.0	52.5
18	Patharlapadu	2554	2483	5037	2583	1421	1162	51.2	55.6	46.7
19	Jallepalle	1048	1009	2057	780	404	376	37.9	38.5	37.2
20	Hydersaipeta	1346	1227	2573	1420	720	700	55.1	53.4	57
21	Tippareddigudem	809	791	1600	648	399	249	40	49.3	31.4
22	Pindiprolu	2376	2340	4716	2631	1383	1248	55.7	58.2	53.3
23	Edulla Cheruvu	796	779	1575	913	440	473	57.9	55.2	60
24	Thirumalayapalem	1549	1947	3496	1684	837	847	48.1	54.0	43.5
25	Kokkireni	1588	1582	3170	1814	935	879	57.2	58.8	55.5
	Total	30737	30765	61502	31142	16492	14650	50.6	53.6	47.6

Source: Census of India 1991, 2001, 2011

According to 2011 Census

6. The total number of working group of population was 31142, the total male working group was 16492 and female was 14650.
7. The highest number of WPR is recorded in Patharlapadu village (2583) and the highest male WPR is recorded in Patharlapdu (1421) and Highest female WPR in Pindiprolu (1248)
8. The lowest number of WPR is recorded in Radgunadhapalem (345) and the lowest male WPR is recorded in Bhandampalle (137) and lowest female WPR in Bhandampalle (129)
9. The highest percentage of WPR is in Laxmidevi palle (63.6) and the highest male percentage of WPR is in Laxmidevipalle (64.7) and highest female percentage of WPR is in Laxmidevipalle (62.5)
10. The lowest Percentage of WPR is in Raghunadhapalem (29.3), and the lowest male percentage of WPR is in Hasnabad (22.9) and the lowest female percentage of WPR is in Raghunadhapalem (27.9)

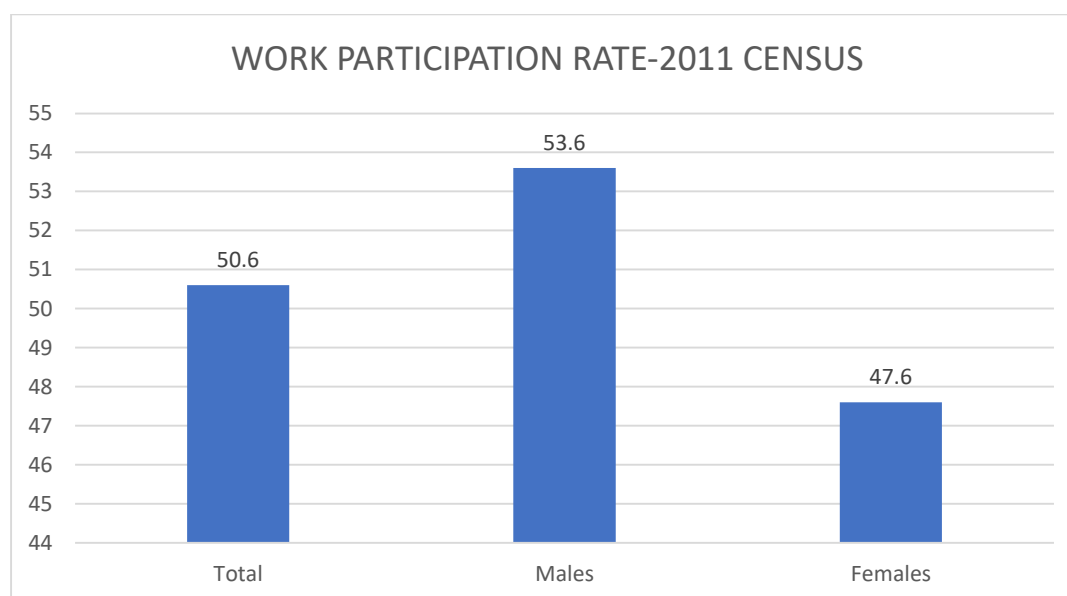


Figure:2.26: Work Participation Rate -2011 Population

2.4. Conclusion

Thirty years of census data i.e from 1991 census and 2001 census and 2011 census was taken. There was increasing trends in population ad density of Thirumalaya Palem mandal and also there is increase in Sex-ratio but a decrease in child population sex ratio was recorded due that most of the people in these villages are illiterate and in a view of female child a burden to them. The scheduled caste sex ratio has got decreased from 1991 to 2001 but there is increase in 2011 census and in case of scheduled tribe sex ratio got increased from 1991 to 2001 census but there was decrease in census. The percentage of SC and ST to the total population also got declined from 1991 to 2011 census. In case of literacy rate this mandal had got low literacy in

1991 with 23.7 and it got increased to 48.7 in 2011 census. Work participation rate has a declining trend from 1991(54.2) to 2011(28.6), also there was a decline in male WPR and female WPR from 1991 to 2011 census.

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