

1. Salient Features of East Godavari District

East Godavari District which is one of the largest and the most populous district in the state of Andhra Pradesh, was successively ruled by Mauryas, Sathavahanas, Vishnu Kundins, Eastern Chalukyas, Cholas, Kakatiyas, Musunuri Chieftains, Kondaveeti Reddy Kings, Gajapathis, Kutubshahis and then by the British. It was under the Raj. On April 15, 1925, East Godavari District was formed as per G.O.No.502. East Godavari is the richest district of the state, in terms of GDP. It is both the cultural and tourist hub of the state. East Godavari is a district in Coastal Andhra region of Andhra Pradesh, India. Its district headquarters is at Kakinada. As of Census 2011, it became the most populous district of the state. Rajahmundry and Kakinada are the two large cities in the Godavari districts in terms of population. The district of Rajahmundry (present name Rajamahendravaram) was reorganised in 1859 into two districts of Godavari and Krishna. Godavari District was further bifurcated into East and West Godavari districts in 1925. After Nov 1956, Andhra Pradesh was formed by combining parts of Naizam, Ceded and Circars. In 1959, the Bhadrachalam revenue division, consisting of Bhadrachalam and Naguru Taluqs (2 Taluqs in 1959 but later subdivided into Wajedu, Venkatapuram, Charla, Dummugudem, Bhadrachalam, Nellipaka, Chinturu, Kunavaram, and Vara Rama Chandra Puram mandals) of East Godavari district were merged into the Khammam district. After June 2014's reorganisation and division of Andhra Pradesh, the Mandals of Bhadrachalam (with the exception of Bhadrachalam Temple), Nellipaka, Chinturu, Kunavaram and Vara Rama Chandra Puram were re-added to East Godavari District. The East Godavari District is bordered by river Godavari on the West and Bay of Bengal on Eastern side. The district flourishes with lands of fertile soils, good rain fall and balanced climatic conditions and possesses all the nature's hand work like perennial rivers, mountains, forests and also the sea coast. The district is enriched by huge water resources of River Godavari and major streams like Yeleru, Suddagedda, Pampa and Thandava. The Delta coastal line is around 150 Kms in the Eastern sea board

of India with minor ports at Kakinada and Odalarevu. The mean annual rainfall precipitation is 1219 mm and is mostly confined to the period from June to November.

1.1 Administrative Setup

East Godavari District lies in between 16° 30' to 17° 00' N Latitude and 81° 30' to 82° 30'E Longitude and occupies a geographical area of 10,807 Sq. Km. with population of 51.515 lakhs (2011 census). The district has divided into 64 mandals (Fig. 1). These 64 mandals consists of 1,374 villages, 2 Municipal Corporation, 7 municipalities and 10 census towns. It is the one of the two districts, like Chittoor district to possess two municipal corporations namely, Kakinada and Rajahmundry. The 7 municipalities in the district include, Amalapuram, Mandapeta, Peddapuram, Pithapuram, Ramachandrapuram, Samalkota, and Tuni. After the merger of Dowleswaram, Hukumpeta and Katheru into Rajahmundry Municipal Corporation, there exist 7 census towns of Arempudi, Bandarulanka, Chidiga, Morampudi, Ramanayyapeta, Rampachodavaram, and Suryaraopeta.

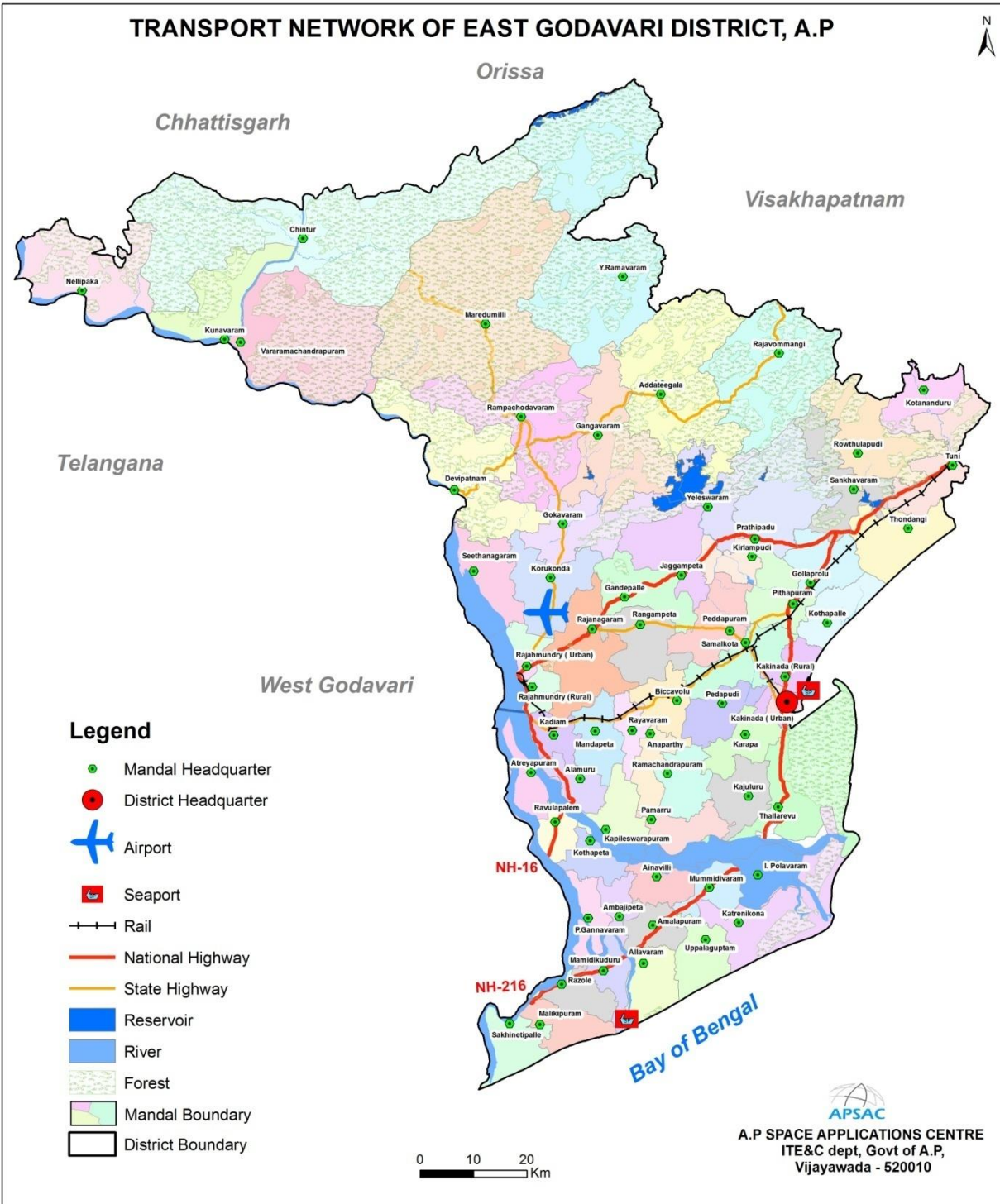


Fig. 1 Administrative Boundaries of East Godavari District, Andhra Pradesh

1.2 Drainage

The famous river Godavari is flowing in this District (Fig.2). Within the state of Andhra Pradesh, it flows through hilly terrain of the Eastern Ghats known as the Papi hills which explains the narrowing of its bed as it flows through a gorge for a few km, only to re-widen at Polavaram. Before crossing the Papi hills, it receives its last major tributary Sabari River on its left bank. The river upon reaching the plains begins to widen out until it reaches Rajamundry. Arma Konda or Jindhagada Peak (1,680 m (5,510 ft) above msl) located near Paderu which is the highest peak in the Godavari river basin as well as in Eastern Ghats. After crossing Rajahmundry, the Godavari splits into two branches which are called Vriddha Gautami (Gautami Godavari) and Vasishta Godavari. Again the Gautami branch splits into two branches namely Gautami and Nilarevu. Similarly, the Vasishta splits into two branches named Vasishta and Vainateya. These four branches which join the Bay of Bengal at different places, are forming a delta length of 170 km (110 mi) along the coast of the Bay of Bengal and is called the Konaseema region. This delta along with the delta of the Krishna River is called the Rice Granary of South India.

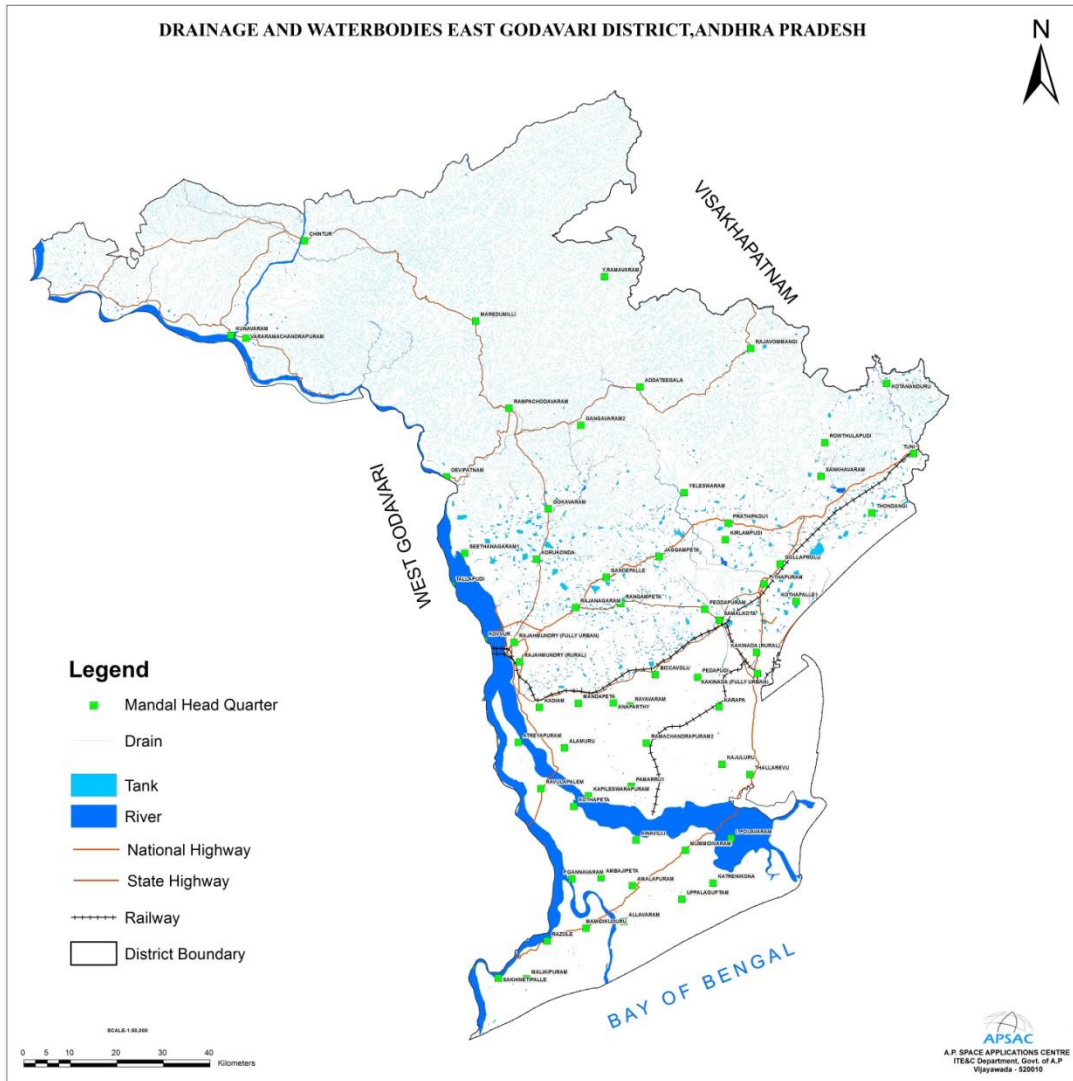


Fig. 2 Drainage Network and Surface Water bodies of the District

The Kolleru Lake having a shallow depression area of about 388.5 Sq. Km lies in Kaikaluru and Kalidindi mandals and is located between Krishna and Godavari delta, and spans into two districts - Krishna and West Godavari. It acts as a reservoir for drainage water of surrounding delta areas during monsoon and it dries up in summer. Kolleru Lake is the largest freshwater lake in Asia. The lake serves as a natural flood-balancing reservoir for these two rivers. The lake is fed directly by water from the seasonal Budameru and Tammileru rivers, and is

connected to the Krishna and Godavari systems by over 68 inflowing drains and channels.

1.3 Climate and Rainfall

The Climate is comparatively moderate throughout the year except during the months of April to June when the temperature reaches a maximum of 48 deg. Centigrade. The normal rainfall of the district is 1280.0 mm. More than half of the rainfall is brought by South-West Monsoon while a large portion of the rest of the district receives rainfall from the North-East Monsoon also, during October and November. Almost in each and every mandal, automatic weather stations (AWS) are established by A.P. State Developmental Planning Society (APSDPS), Planning Department, Govt. of A.P. (Fig.3) and the data from these stations is received every day. The isohytes map is showing the rainfall status in East Godavari district (Fig. 4).

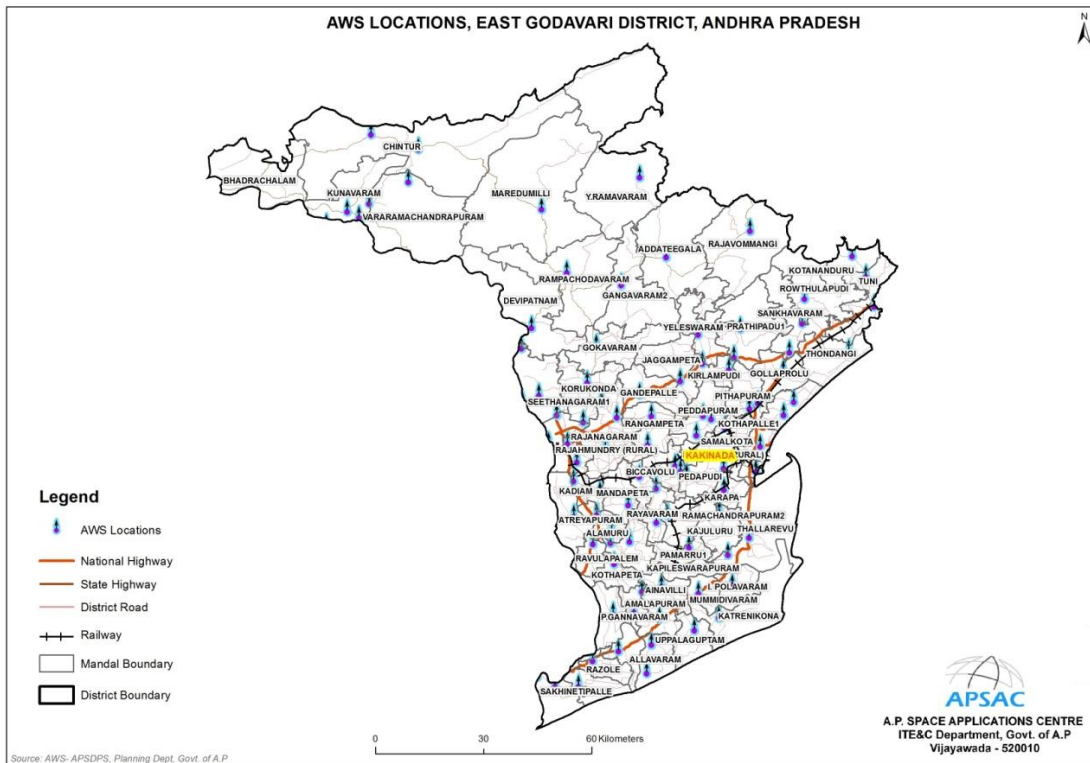


Fig. 3 Automatic Weather Stations of East Godavari District

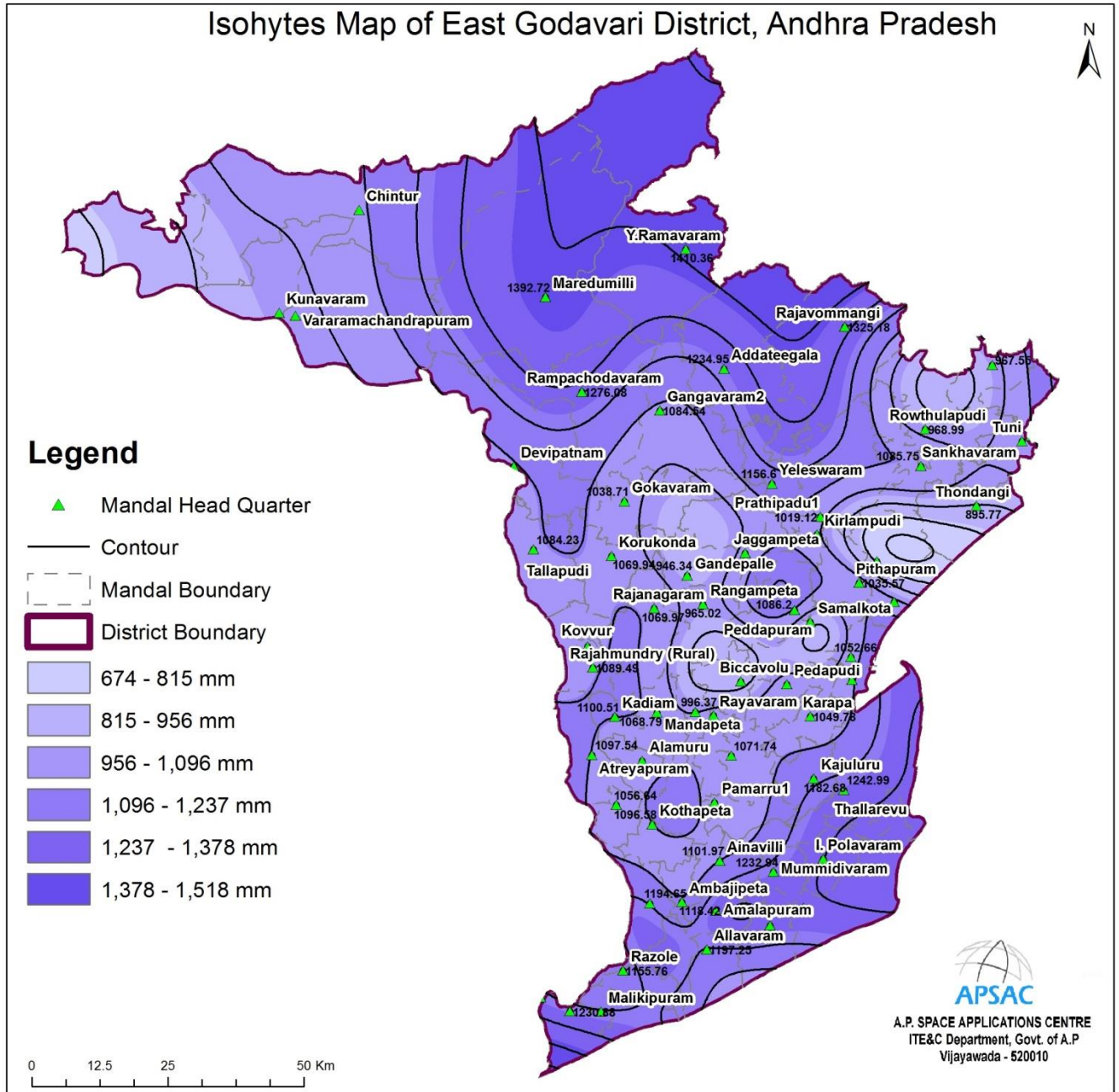


Fig. 4 Distribution of Rainfall in East Godavari District, Andhra Pradesh

Table-1 Mandal Wise Average Annual Rainfall (mm)

| Mandal Wise Average Annual Rainfall (mm) | | | | | | | | | | | | | | |
|--|------------------|------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|---------|
| S No | Mandal Name | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | TOTAL |
| 1 | ADDATEEGALA | 5.47 | 10.08 | 23.35 | 41.67 | 88.19 | 172.98 | 229.59 | 221.38 | 213.14 | 172.11 | 46.45 | 10.54 | 1234.95 |
| 2 | AINAVILLI | 3.93 | 6.25 | 9.83 | 11.84 | 48.20 | 127.62 | 174.39 | 188.10 | 190.21 | 215.44 | 103.58 | 22.60 | 1101.97 |
| 3 | ALAMURU | 6.19 | 7.82 | 7.12 | 10.69 | 49.90 | 118.62 | 190.73 | 204.50 | 182.01 | 177.33 | 81.19 | 17.14 | 1053.23 |
| 4 | ALLAVARAM | 8.73 | 4.79 | 8.86 | 11.97 | 50.61 | 130.11 | 182.14 | 227.13 | 202.98 | 221.76 | 127.51 | 20.67 | 1197.25 |
| 5 | AMALAPURAM | 5.15 | 7.35 | 7.04 | 15.83 | 55.18 | 132.32 | 207.82 | 222.59 | 189.63 | 257.93 | 137.07 | 24.06 | 1261.99 |
| 6 | AMBAJIPETA | 3.63 | 3.43 | 10.49 | 13.61 | 44.83 | 130.86 | 180.82 | 212.25 | 193.41 | 209.40 | 99.71 | 15.98 | 1118.42 |
| 7 | ANAPARTHI | 3.07 | 5.84 | 11.03 | 15.98 | 57.42 | 123.82 | 203.51 | 190.56 | 158.17 | 151.08 | 65.33 | 10.57 | 996.37 |
| 8 | ATREYAPURAM | 2.05 | 7.67 | 7.30 | 20.27 | 50.66 | 143.72 | 208.21 | 209.89 | 200.57 | 161.54 | 70.15 | 15.53 | 1097.54 |
| 9 | BICCAVOLU | 2.62 | 6.76 | 7.75 | 11.64 | 54.50 | 95.37 | 154.89 | 167.70 | 151.14 | 135.77 | 70.31 | 9.10 | 867.55 |
| 10 | DEVIPATNAM | 2.58 | 7.16 | 10.19 | 20.53 | 45.32 | 146.16 | 225.60 | 276.03 | 182.87 | 125.59 | 38.58 | 11.19 | 1091.79 |
| 11 | GANDEPALLE | 5.49 | 8.83 | 10.90 | 23.01 | 72.49 | 113.93 | 168.34 | 173.22 | 158.33 | 135.44 | 65.60 | 10.76 | 946.34 |
| 12 | GANGAVARAM | 3.59 | 8.67 | 16.67 | 23.69 | 78.51 | 145.21 | 194.72 | 203.86 | 197.09 | 158.60 | 43.96 | 9.98 | 1084.54 |
| 13 | GOKAVARAM | 6.01 | 9.25 | 13.81 | 22.80 | 70.39 | 141.56 | 213.43 | 182.61 | 193.71 | 131.57 | 44.17 | 9.39 | 1038.71 |
| 14 | GOLLAPROLU | 1.21 | 9.44 | 5.88 | 16.32 | 41.43 | 108.86 | 137.48 | 135.88 | 121.77 | 141.49 | 60.96 | 14.12 | 794.84 |
| 15 | I POLAVARAM | 6.91 | 12.79 | 8.56 | 11.58 | 68.26 | 136.79 | 196.92 | 213.47 | 206.08 | 255.86 | 156.33 | 26.06 | 1299.60 |
| 16 | JAGGAMPETA | 2.75 | 10.85 | 13.01 | 24.54 | 82.87 | 135.58 | 190.62 | 192.92 | 169.60 | 133.16 | 65.30 | 11.02 | 1032.21 |
| 17 | KADIAM | 3.16 | 6.44 | 10.23 | 21.10 | 59.07 | 135.35 | 227.31 | 206.94 | 199.01 | 157.81 | 64.82 | 9.26 | 1100.51 |
| 18 | KAJULURU | 4.93 | 16.25 | 7.41 | 18.95 | 73.25 | 122.74 | 181.56 | 177.89 | 184.74 | 252.25 | 126.39 | 16.32 | 1182.68 |
| 19 | KAKINADA (RURAL) | 0.98 | 12.21 | 7.64 | 20.52 | 52.05 | 125.95 | 158.93 | 181.46 | 184.59 | 215.10 | 76.40 | 16.84 | 1052.66 |
| 20 | KAKINADA (URBAN) | 6.35 | 9.31 | 5.85 | 15.37 | 73.06 | 125.27 | 174.23 | 170.56 | 176.53 | 197.74 | 119.81 | 12.97 | 1087.06 |
| 21 | KAPILESWARAPURAM | 5.99 | 9.72 | 11.55 | 9.63 | 61.43 | 121.31 | 209.64 | 208.09 | 207.24 | 205.45 | 88.60 | 12.47 | 1151.14 |
| 22 | KARAPA | 4.03 | 8.35 | 5.23 | 12.07 | 73.93 | 113.00 | 167.29 | 168.71 | 166.46 | 205.66 | 110.34 | 14.71 | 1049.78 |
| 23 | KATRENKONA | 6.43 | 14.34 | 9.01 | 10.42 | 59.79 | 121.77 | 187.47 | 205.57 | 213.59 | 260.05 | 167.34 | 25.13 | 1280.90 |
| 24 | KIRLAMPUDI | 2.13 | 9.22 | 9.87 | 18.35 | 93.95 | 132.56 | 156.03 | 174.69 | 185.98 | 147.14 | 73.28 | 11.61 | 1014.81 |
| 25 | KORUKONDA | 7.45 | 7.27 | 13.63 | 30.53 | 73.27 | 138.63 | 221.88 | 226.85 | 152.59 | 139.80 | 47.18 | 10.84 | 1069.94 |
| 26 | KOTANANDURU | 4.92 | 12.26 | 15.80 | 30.89 | 87.48 | 110.59 | 134.61 | 124.46 | 189.90 | 179.59 | 65.07 | 11.99 | 967.55 |
| 27 | KOTHAPALLEE | 2.87 | 19.37 | 8.09 | 21.58 | 45.54 | 119.30 | 161.41 | 153.80 | 197.07 | 200.98 | 75.11 | 18.00 | 1023.10 |
| 28 | KOTHAPETA | 4.39 | 7.14 | 10.67 | 14.24 | 49.37 | 123.79 | 209.53 | 199.18 | 183.20 | 190.70 | 90.12 | 14.26 | 1096.58 |
| 29 | MALIKIPURAM | 9.69 | 9.43 | 8.24 | 17.92 | 67.87 | 111.85 | 205.95 | 200.48 | 189.83 | 253.19 | 114.74 | 18.65 | 1207.83 |
| 30 | MAMIDIKUDURU | 6.64 | 14.39 | 11.04 | 14.36 | 67.91 | 133.19 | 197.29 | 228.29 | 206.34 | 240.61 | 122.44 | 18.97 | 1261.48 |
| 31 | MANDAPETA | 2.13 | 5.51 | 8.69 | 14.55 | 59.88 | 130.06 | 195.40 | 204.17 | 177.38 | 182.95 | 77.59 | 10.47 | 1068.79 |
| 32 | MAREDUMILLI | 4.27 | 5.60 | 10.30 | 48.36 | 52.97 | 185.84 | 304.02 | 277.28 | 275.78 | 169.50 | 46.55 | 12.26 | 1392.72 |
| 33 | MUMMIDIVARAM | 5.70 | 7.44 | 7.42 | 14.84 | 48.70 | 131.75 | 189.17 | 208.10 | 200.06 | 257.57 | 137.85 | 24.35 | 1232.94 |

| | | | | | | | | | | | | | | |
|----|-------------------|-------------|-------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|----------------|
| 34 | P GANNAVARAM | 3.58 | 7.24 | 7.88 | 18.62 | 43.32 | 132.40 | 188.79 | 198.43 | 204.64 | 254.35 | 118.74 | 16.65 | 1194.65 |
| 35 | PAMARRU | 0.63 | 10.47 | 9.24 | 11.26 | 52.70 | 108.84 | 180.23 | 177.11 | 180.02 | 214.19 | 101.09 | 11.89 | 1057.66 |
| 36 | PEDAPUDI | 4.42 | 7.28 | 6.57 | 13.45 | 75.88 | 116.03 | 162.70 | 184.07 | 169.85 | 185.62 | 92.82 | 13.98 | 1032.67 |
| 37 | PEDDAPURAM | 5.36 | 10.76 | 11.21 | 22.78 | 77.90 | 126.61 | 190.07 | 189.92 | 180.01 | 172.36 | 88.02 | 11.20 | 1086.20 |
| 38 | PITHAPURAM | 5.66 | 15.59 | 10.76 | 22.96 | 65.97 | 124.77 | 175.46 | 169.19 | 174.20 | 172.25 | 87.79 | 10.97 | 1035.57 |
| 39 | PRATHIPADU | 3.24 | 10.66 | 14.95 | 28.89 | 87.73 | 133.27 | 171.06 | 170.23 | 175.76 | 158.04 | 58.08 | 7.21 | 1019.12 |
| 40 | RAJAHMUNDRY RURAL | 2.60 | 4.38 | 13.60 | 19.62 | 46.29 | 146.84 | 212.86 | 200.41 | 220.15 | 139.37 | 70.00 | 13.38 | 1089.49 |
| 41 | RAJAMUNDRY(URBAN) | 5.02 | 8.17 | 13.00 | 22.50 | 62.49 | 122.57 | 218.85 | 229.33 | 166.29 | 149.97 | 61.87 | 8.38 | 1068.45 |
| 42 | RAJANAGARAM | 5.14 | 10.18 | 15.03 | 23.06 | 72.20 | 133.00 | 202.24 | 215.88 | 173.53 | 146.46 | 64.05 | 9.21 | 1069.97 |
| 43 | RAJAVOMMANGI | 7.12 | 15.25 | 19.96 | 51.84 | 83.19 | 178.09 | 257.84 | 237.94 | 237.09 | 166.59 | 60.23 | 10.03 | 1325.18 |
| 44 | RAMACHANDRAPURAM | 3.87 | 7.79 | 7.70 | 15.88 | 51.32 | 125.94 | 190.98 | 182.61 | 170.43 | 195.80 | 104.08 | 15.35 | 1071.74 |
| 45 | RAMPACHODAVARAM | 7.00 | 13.18 | 17.25 | 33.82 | 77.81 | 169.31 | 232.30 | 249.65 | 220.34 | 184.70 | 53.87 | 16.87 | 1276.08 |
| 46 | RANGAMPETA | 2.10 | 10.22 | 9.58 | 18.10 | 58.58 | 120.43 | 183.83 | 189.36 | 151.14 | 152.09 | 59.26 | 10.34 | 965.02 |
| 47 | RAVULAPALEM | 4.96 | 7.96 | 12.90 | 10.88 | 55.89 | 122.40 | 205.64 | 196.34 | 186.77 | 169.66 | 72.95 | 10.29 | 1056.64 |
| 48 | RAYAVARAM | 2.59 | 8.09 | 6.59 | 11.42 | 61.57 | 130.98 | 212.27 | 187.33 | 162.91 | 171.31 | 73.83 | 10.66 | 1039.55 |
| 49 | RAZOLE | 7.35 | 7.53 | 9.01 | 16.78 | 49.67 | 119.41 | 193.55 | 213.04 | 176.52 | 225.75 | 111.66 | 25.51 | 1155.76 |
| 50 | ROUTHULAPUDI | 5.29 | 10.16 | 21.69 | 29.80 | 55.96 | 118.89 | 138.09 | 149.11 | 166.78 | 159.79 | 96.73 | 16.71 | 968.99 |
| 51 | SAKHINETIPALLE | 6.28 | 5.30 | 6.32 | 25.08 | 46.45 | 144.01 | 210.56 | 194.60 | 228.83 | 242.15 | 92.80 | 28.52 | 1230.88 |
| 52 | SAMALKOTA | 0.74 | 10.04 | 10.21 | 19.55 | 62.35 | 109.54 | 141.98 | 152.43 | 164.40 | 156.43 | 82.90 | 12.64 | 923.20 |
| 53 | SANKHAVARAM | 4.85 | 12.46 | 14.46 | 22.20 | 101.40 | 131.89 | 172.72 | 168.83 | 204.18 | 177.93 | 62.68 | 12.14 | 1085.75 |
| 54 | SEETHANAGARAM | 4.45 | 13.74 | 15.13 | 19.62 | 68.43 | 143.90 | 233.00 | 242.60 | 173.24 | 113.02 | 46.90 | 10.18 | 1084.23 |
| 55 | THALLAREVU | 9.30 | 16.99 | 9.28 | 12.19 | 72.57 | 124.18 | 191.57 | 187.47 | 182.50 | 272.28 | 146.98 | 17.69 | 1242.99 |
| 56 | THONDANGI | 6.43 | 11.13 | 9.43 | 14.92 | 57.42 | 119.03 | 133.72 | 151.56 | 145.01 | 143.98 | 86.18 | 16.96 | 895.77 |
| 57 | TUNI | 5.63 | 11.96 | 11.99 | 29.18 | 74.14 | 131.40 | 159.56 | 173.90 | 198.83 | 176.40 | 80.21 | 9.03 | 1062.21 |
| 58 | UPPALAGUPTAM | 5.71 | 9.54 | 11.21 | 12.80 | 68.29 | 135.29 | 188.33 | 231.06 | 194.50 | 245.14 | 139.79 | 22.94 | 1264.60 |
| 59 | Y RAMAVARAM | 8.31 | 5.85 | 26.66 | 69.94 | 67.74 | 167.75 | 276.78 | 267.34 | 251.58 | 189.69 | 62.22 | 16.49 | 1410.36 |
| 60 | YELESWARAM | 5.33 | 12.29 | 16.96 | 42.44 | 72.37 | 172.54 | 201.28 | 194.86 | 219.21 | 141.95 | 61.87 | 15.49 | 1156.60 |
| | Total | 4.74 | 9.59 | 11.18 | 21.15 | 63.80 | 131.60 | 192.79 | 197.39 | 187.99 | 185.29 | 85.29 | 14.64 | 1105.45 |

1.4 Transport and Communications

It is observed that the district has better road network connectivity at central region and less in the northern part covered with hilly region. The East Godavari district covering an area of 10,807 sq. km consists of 2,897 habitations in 64 mandals. It is noticed that 601 habitations do not have connectivity with BT & CC roads. The total number of PR roads are 2,779 having a spatial length of 6,418 km, of which 1,545 km is with BT, 220 km CC, 1,280 km WBM, 1,186 km Gravel and 1,018 km with Earthen surface. NH16 and NH214A are passing through the district and covering a length of 343 km. The National Highway 16 connecting Chennai and Howrah passes through this district. Rajahmundry, Tuni and Samalkot are the railway junctions in the district. The Chennai to Howrah rail line also passes through this district. (Fig 5).

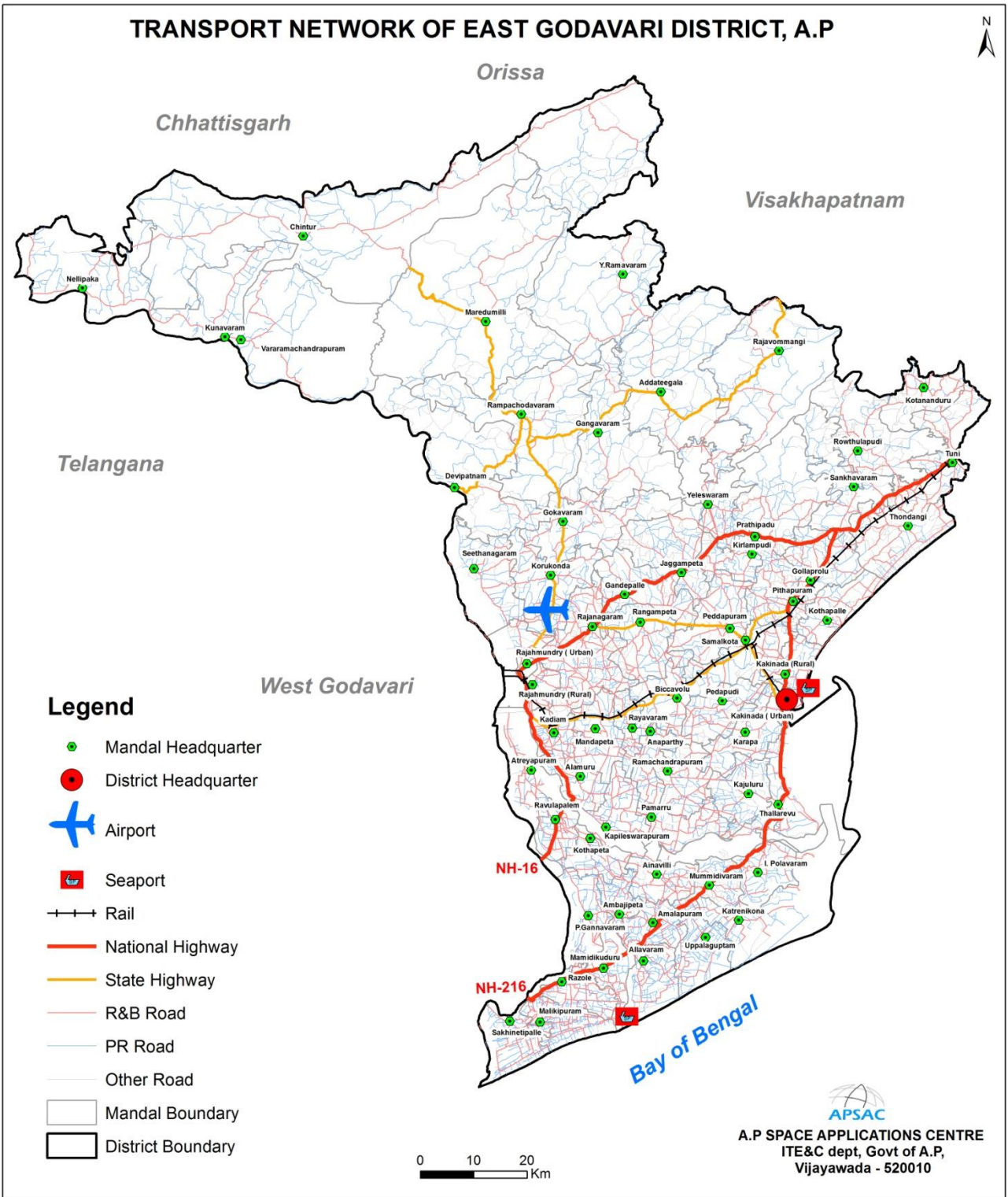


Fig. 5 Transport Network of East Godavari District, Andhra Pradesh

1.5 Population and Literacy

An official Census 2011 detail of East Godavari, a district of Andhra Pradesh, has been released by Directorate of Census Operations in Andhra Pradesh. Enumeration of key persons was also done by census officials in East Godavari District of Andhra Pradesh. In 2011, East Godavari had a population of 5,154,296 of which male and female were 2,569,688 and 2,584,608, respectively. In 2001 census, East Godavari had a population of 4,901,420 of which males were 2,459,640 and remaining 2,441,780 were females. East Godavari District population constituted 6.09 percent of total Maharashtra population. In 2001 census, this figure for East Godavari District was at 6.43 percent of Maharashtra population. There was change of 5.16 percent in the population compared to population as per 2001. In the previous census of India 2001, East Godavari District recorded an increase of 7.93 percent in its population compared to 1991. Fig.6. Average literacy rate of East Godavari in 2011 was 70.99 compared to 65.48 of 2001. If things are looked out gender-wise, male and female literacy were 74.51 and 67.52 respectively. For 2001 census, same figures stood at 70.00 and 60.94 in East Godavari District. Total literate in East Godavari District were 3,288,577 of which male and female were 1,716,933 and 1,571,644 respectively. In 2001, East Godavari District had 2,807,728 in its district. Mandal-wise spatial distribution of schedule caste population and types of SC student hostels and residential schools in East Godavari District, Andhra Pradesh is shown in Fig.6.

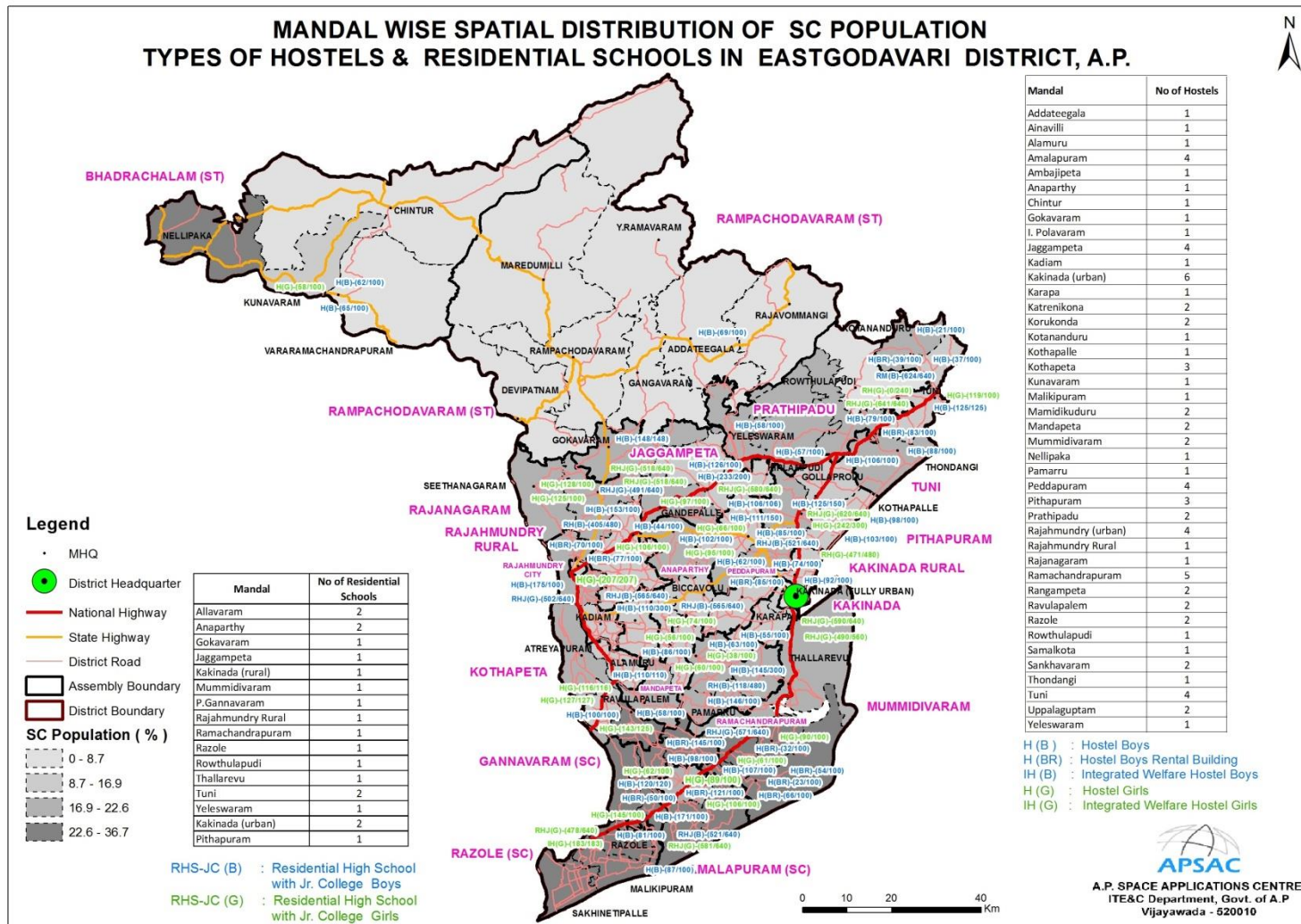


Fig. 6 Distribution of Schedule Caste Population, Types of Hostels and Residential Schools

1.6 Important Places

1.6a Places of Tourist Interest

Religious tourism is also referred to as pilgrimage tourism, where the primary purpose of travel is for pilgrimage to Temples, Churches or Masjids. East Godavari is a notable place with its rich and varied temples and shrines. It is a place of rich tradition, heritage and historical significance. Here, we provide a list of some historical, most visited and famous pilgrimages in East Godavari district along with their details. The locations of important tourist places in East Godavari District are shown in Fig.7.

Ainavilli : It is located at a distance of 72km from Kakinada. It is a land of unspoiled beauty which oozes of history. It is dedicated to Sri Siddhi Vinayaka Swamy. Devotees take a vow to visit the temple again if their wishes are fulfilled. It has two gopurams (towers) sculpted skilfully with tales and idols. It is said that Vyasa Maharishi installed the Ganapathi idol.

Antharvedi: It is located about 130kms from Kakinada. It is flanked by beautiful waters of sea to the east, Godavari to the west and Raktakulya River to the north. There are some well known spots belonging to this holy shrine such as Sagar Sangam and Chakrateertham. It is also called Mukti Kshetra of Lord Narasimha and the Annual Mela runs for about nine days when Antarvedi seems to be the Kaliyuga Vaikunta.

Appanapalli : A remote village in Mamidikuru which is 72kms from Kakinada via Yanam. Being the abode of Lord Balaji, it has acquired reputation as second Tirupati of Konaseema. It is flanked by Godavari on 3 sides. We can find good accommodation at decent guest houses & TTD Choultries. This shrine derives its name after a Rishi.

Muramalla: Muramalla is located about 20km from Amalapuram and is home to the popular shrine of Sri Veereswara Swamy Vari Idol which attracts people. It is believed that devotees who still haven't got married, who find it difficult to get good proposals, get married with just a mere visit to this temple. Not only that, childless couples, and couples who do not get along believe to find respite here.

Palivela: Palivela is located about 90km from Kakinada is known for the temple where Lord Uma Kouppulingeswara Swamy idol is situated. It is believed that the idol was installed by Maharshi Agastya. There used to be 7 Mandapas which are named after 7 days of the week.

Ryali: Ryali is located at 74km from Kakinada. It is an enchanting place situated between the rivers Vashista and Gowtami. In this temple, the exquisite idol of Jaganadh Swamy is made of black stone. It has MahaVishnu in front and Jagan Mohini on back side and can also catch a glimpse of ten incarnations of concerts, Thumbara, Narada, Rambha, Urvasi, Garuda, Ganga and many more. This shrine is referred as “Swayambhu”.

Vanapalli: Vanapalli is located about 21km from Amalapuram and 70km from Kakinada via Ravulapalem. The temple of lord ‘Pallalamma’ Ammavaru is said to have divine powers of healing. A statue of jackal was found under the idol.

Draksharama: Draksharama is located at a distance of 28km from Kakinada, situated on the Eastern bank of Godavari. Its history of sacred pilgrimage dealt within Skanda Purana. It is a rare view where god & goddess (Astadasa Shakti Petas) equally shower blessings. There is one such in Varanasi, second in SriSailam and third in Draksharama with Bhimanatha and Manikyamba. This is ‘Swayambhu’ and is one of the ‘Pancharamas’.

Samalkot: Samalkot is about 12kms from Kakinada. It is famous and one of the ‘Pancharamas’. This was built in the 9th century. Lord Bhimeswara Swamy appears as Ekashila Shiva Linga along with Ekashila Nandi. Darshan of Shiva Linga is at first floor, along with goddess shri Bala Tripura Sundari, and Pushkarini (lake) can be seen.

Talupulamma Lova: Talupulamma Lova is often claimed as “gods own district” located not far from Annavaram town. It is the abode of Talupulamma Thalli. People believe she would protect from accidents and dangers. It is said to be “Swayambhu”. It is a fascinating and an irresistible destination for lovers of nature and adventure, and is located at 70km from Kakinada.

Pandavula Metta: Pandavula Metta is a hillock nearer to Peddapuram. This hill was in the midst of a jungle. It is believed that Pandavas had lived here for some time during their exile. One can also see Bhima’s feet even today. One should climb 108 steps to reach the temple and can find two natural caves on hill facing the east. It is about 20kms from Kakinada.

Annavaram: Annavaram is one of the most famous holy shrines enjoying popularity next to Tirupati. The temple is built in Dravidian style. The Lord Satyadeva with Anantha Lakshmi and Lord Shiva on other side took their abode on Ratnagiri. Every Hindu performs ‘Sri Satya Narayana Vratham’ throughout India

for wealth, education and success. Especially, the newly married couple comes here and performs poojas for good and healthy relationship. It is also very famous for the god's "prasadam" which is served in dried leaves till today.

Bikkavolu: Bikkavolu temple is dedicated to Lord Vinayaka. The main deity inside the temple is 7 feet tall. This is a "Swayambhu". It is located at a distance of 30kms from Kakinada. It is believed that the idol was installed during 849 AD and has been increasing year by year. Here the devotees whisper their wishes in lord's ear. The other fascinating thing is the water that comes out from bottom portion of left leg of the lord.

Gollala Mamidada: Gollala Mamidada is located 20kms from Kakinada. It is in the midst of coconut groves and green fields. Suryanarayana Swamy temple is situated here. It has 170 feet high gopuram. The temple is situated in 16 acres. The whole gopuram consists of 100's of carvings which are said to be an eye feast and takes lot of time to see every carving which is constructed based on different epics of god & goddess. It is also known as 'Chinna Bhadrachalam'.

Markandeya Temple: One of the ancient temples of Rajahmundry. It is about 70kms from Kakinada. The temple was rebuilt in 1818 which shows Lord Shiva along with all other deities in one place. It is located near Ghats of Godavari. Devotees generally have a dip in river Godavari before they enter the temple.

Mandapalli: After the huge battle between demons & Shani, Shani won the battle. To get rid of 'Bhramahatyapaatakam', he installed a Shiva linga which he called Mandeswara Swamy. It is about 66km from Kakinada. Devotees offer prayers in wide range on "Shani Trayodhasi" believing that their sins are washed off.

Kukkuteswara Swamy Temple: It is dedicated to Lord Shiva. It is a 'Swayambhu' in the form of cock's head. It is located in Pitapuram which is 56km away from Rajahmundry. People from many parts of the state throng the temple during 'Maha Shiva Raathri'.

Vadapalli: Vadapalli is located 10km from Ravulapalem. The roof around the temple is filled with Govindanamaalu. It is believed Lord Venkateswara is pleased and fulfils their wishes if the devotees perform 11 pradakshinas.

Tholi Tirupati: This temple is 9000 years old, it is said that there are 108 Tirupatis throughout the country and this is the first of all. It is about 27km towards north from Kakinada. We can see smiling posture of Lord Venkateswara, Shanka & Chakra are in altered positions in comparison with other Balaji idols.

Andhra Sabarimala: This is a replica of Swamy Ayyappa temple at Kerala. It is about 64kms from Kakinada. It is said that the devotees who cannot go to Sabarimala (Kerala) can offer their prayers here. There are many other temples located in the same premises.

Korukonda: It is located about 60kms from Kakinada and 25kms from Rajahmundry. It is an ancient historic temple known as Vaishnava Divya Kshetram. It is dedicated to Lord Vishnu. It is a 'Swayambhu' idol situated at the top of a hill which can be accessed only through long flight of 650 steps. The temple was constructed 800 years ago.

Adurru (Buddha Stupas): It is a 2400 year old Buddhist site located on the west of Vianetaya. Amongst the 3 most popular Buddhist Stupas in the world, the first is in Adurru, the second is in Ranchi and the last one in Sarnath. The famous Mahastupa was built like giant wheel with 17 feet diameter.

Royal Mosque: The Royal Mosque which is situated in the midst of Rajahmundry was built in 1305A.D by Sumera Sahib, Son of Mohammad Bin Tughlak and is one of the oldest monuments worth seeing. It has completed 700 years and it stood as a centre for religious harmony and brotherhood.

1.6b Places of Religious and Cultural importance

The culture of East Godavari district is a rich traditional one in all parts of the district, and reflects the true culture of Andhra Pradesh. It is known for Veda-pandits, the Godavari River and the hospitality of the people. The Telugu language originated in this district (in Rajahmundry or Rajamahendri) East Godavari District has produced several stalwarts in the areas of culture, music, art and cinema. Poet and writer Devulapalli Krishnasastri, musician and singer M.Bala muralikrishna (Mangalampalli Balamurali Krishna), P. B. Sreenivas, Adurthi Subba Rao, C. Pullaiah, painter N. V. Reddi Naidu, actress Jaya Prada belong to this district. Durgabai Deshmukh ,a Freedom fighter, social worker and politician belongs to this place . Culture has always been a major object of travel. Culture plays an important role in tourism. Cultural heritage tourism is the fastest growing segment of the tourism industry because there is a trend towards an increase in the specialization among tourists towards Culture.

Kakinada Beach Festival

Kakinada beach which was later named as the NTR beach is a good destination for beach lovers. The event is expected to see a large number of tourists. The centre of attraction during the four day event is the actors and guests from Telugu Film Industry. The horticulture from Kadiyam adds more color to the festival. The water sports that are organized with the support of aqua sector and Goa state administration is a special attraction.

Konaseema festival

Konaseema Utsav is celebrated in a grand manner at Muramalla village, Polavaram mandal. Thousands of people from different parts of the region and other districts participate in the fest. The Utsav showcases the beauty and culture of this area. 2k run is organized and the replicas of prominent temples are arranged and several cultural programmes are also organized.

Manyam Jatara

It is a three day fair which reflects the customs, traditions and culture of tribal community. To promote tourism, the East Godavari district administration and Integrated Tribal Development Agency are jointly organizing 'Manyam Jatara'. The Jatara comprises 60 percent local tribes and 40 percent people from other districts. Food items and different varieties of bamboo products would be exhibited during the festival.

Peruru

It is a small village located near Amalapuram in East Godavari district of coastal AP. Taking a walk in Peruru is akin to a walk in century's old Andhra town. It's filled with huge mansions which are quiet old and heritage houses. You can reach Peruru within 3-4 hours from Rajahmundry.

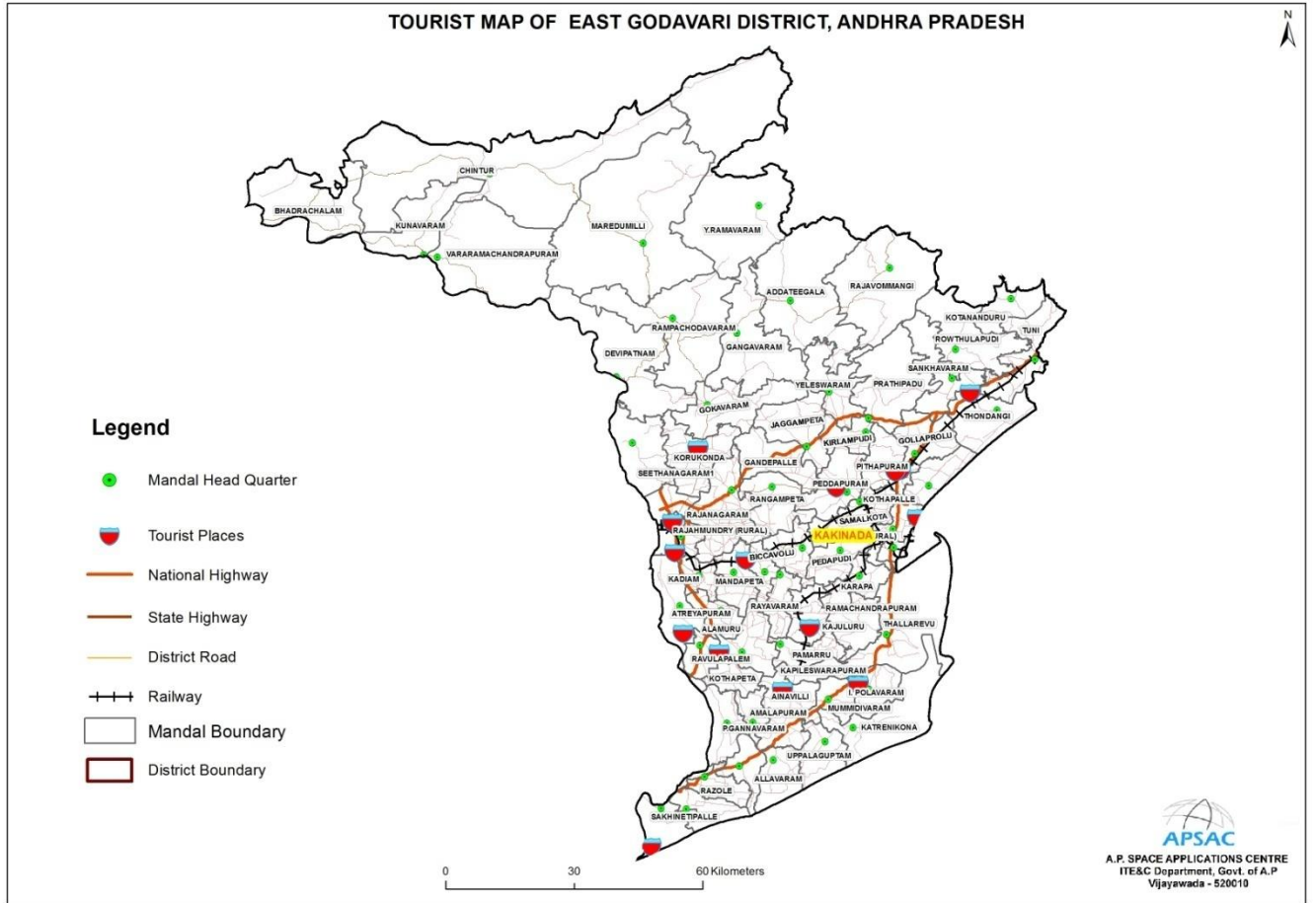


Fig. 7 Some Important Tourist Places in East Godavari District, Andhra Pradesh

2. Land Utilization, Forest and Slope in the District

The Land Use / Land Cover (LULC) pattern of any region is an outcome of various physical and cultural factors, and their utilization by a man in time and space. Land use refers to the type of utilization to which man has put the land. It also refers to the evaluation of the land with respect to various natural characteristics. But land cover describes the vegetal attributes of land. Land use/land cover data is essential for planners, decision makers and those concerned with land resources management. For a Proper understanding of the influence of various human-induced land use practices with regard to the environmental change, it is essential to help simulate the land use changes. Remote sensing technology is considered the most effective as it provides timely and authentic information about the spatial distribution of land use/land cover, while Geographical Information System (GIS) provides a flexible digital environment for collecting, storing, visualizing and analyzing the spatial data. Remote sensing as a vital tool helps for rapid assessment and monitoring of a natural resource. When combined with GIS, it makes it possible to map land use/cover phenomena in detail for further planning, development, and decision-making, which is essential for meeting the increasing demands and welfare of the ever-growing population.

2.1 Land Use / Land Cover Classification

Various land use/land cover categories have been delineated by using 3 seasons (Kharif, Rabi & Zaid) satellite data under level-3 classification. For on-screen digitization, visual image interpretation techniques (size, shape, color, tone, texture, association and pattern) have been used for classifying the land use/land cover map (NRSA, 2006). This information is used for general planning purposes at the district/mandal level. The broad categories are built-up, agricultural, forest, wastelands, wetlands and water bodies. The spatial distribution of land use/land cover of the East Godavari district is shown in Figure-8 and area statistics presented in Table-2.1.

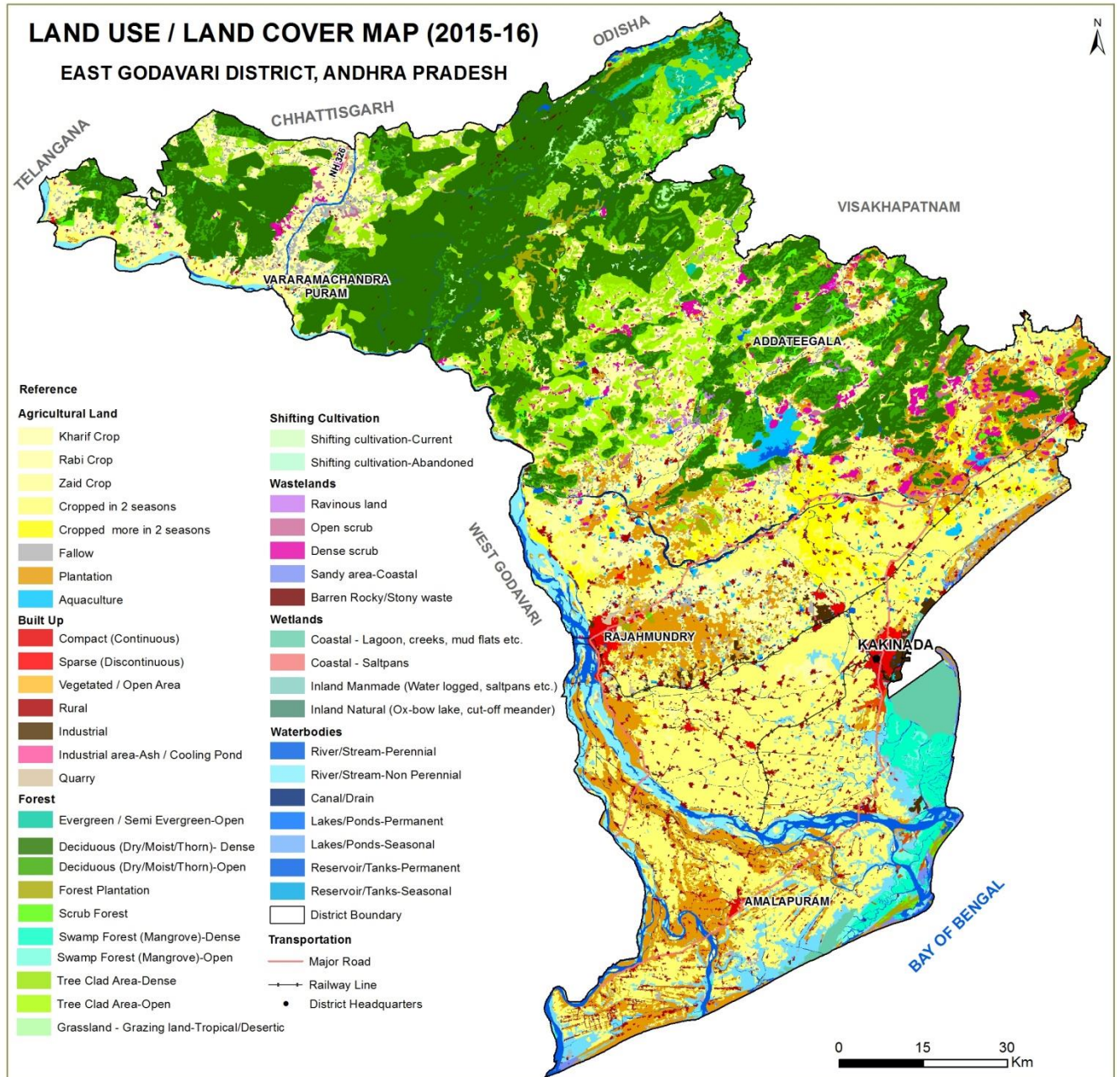


Fig. 8 Land Use / Land Cover Map of East Godavari District during 2015-16

Table-2.1 Category-wise Distributions of Land use/Land Cover during 2015-16

| S.No | Land Use Categories | Year 2015-16 |
|------|---------------------|--------------|
|------|---------------------|--------------|

| | | Area | % |
|--------------------------|--|----------------|--------------|
| 1 | Compact (Continuous) | 81.06 | 0.63 |
| 2 | Sparse (Discontinuous) | 16.68 | 0.13 |
| 3 | Vegetated / Open Area | 7.51 | 0.06 |
| 4 | Rural | 331.90 | 2.59 |
| 5 | Industrial | 57.93 | 0.45 |
| 6 | Industrial area-Ash / Cooling Pond | 1.27 | 0.01 |
| 7 | Quarry | 14.63 | 0.11 |
| Built Up | | 510.98 | 3.99 |
| 8 | Kharif Crop | 1368.28 | 10.69 |
| 9 | Rabi Crop | 107.97 | 0.84 |
| 10 | Zaid Crop | 8.74 | 0.07 |
| 11 | Cropped in 2 seasons | 2575.91 | 20.12 |
| 12 | Cropped more in 2 seasons | 298.33 | 2.33 |
| 13 | Fallow | 227.72 | 1.78 |
| 14 | Plantation | 1110.83 | 8.68 |
| 15 | Aquaculture | 262.85 | 2.05 |
| Agricultural Land | | 5960.63 | 46.55 |
| 16 | Evergreen / Semi Evergreen-Open | 97.04 | 0.76 |
| 17 | Deciduous (Dry/Moist/Thorn)-Dense | 2707.61 | 21.15 |
| 18 | Deciduous (Dry/Moist/Thorn)-Open | 645.47 | 5.04 |
| 19 | Forest Plantation | 92.97 | 0.73 |
| 20 | Scrub Forest | 87.03 | 0.68 |
| 21 | Littoral/Swamp Forest (Mangrove)-Dense | 163.79 | 1.28 |
| 22 | Littoral/Swamp Forest (Mangrove)-Open | 39.99 | 0.31 |
| 23 | Tree Clad Area-Dense | 700.93 | 5.47 |
| 24 | Tree Clad Area-Open | 449.56 | 3.51 |
| 25 | Grass & Grazing land-Tropical/Desertic | 38.55 | 0.30 |
| Forest | | 5022.94 | 39.23 |
| 26 | Ravinous land | 16.95 | 0.13 |
| 27 | Dense scrub | 172.66 | 1.35 |
| 28 | Open scrub | 56.22 | 0.44 |
| 29 | Coastal | 33.67 | 0.26 |
| 30 | Barren Rocky/Stony waste | 4.82 | 0.04 |
| Wastelands | | 284.31 | 2.22 |
| 31 | Inland Natural (Ox-bow lake, waterlogged etc.) | 1.28 | 0.01 |
| 32 | Inland Manmade (Water logged, saltpans etc.) | 4.31 | 0.03 |
| 33 | Coastal - Lagoon, creeks, mud flats etc. | 129.20 | 1.01 |

| | | | |
|-----------------------------|----------------------------|---------------|---------------|
| 34 | Coastal - Saltpans | 14.09 | 0.11 |
| Wetland | | 148.88 | 1.16 |
| 35 | River/Stream-Perennial | 343.11 | 2.68 |
| 36 | River/Stream-Non Perennial | 250.56 | 1.96 |
| 37 | Canal/Drain | 64.13 | 0.50 |
| 38 | Lakes/Ponds-Permanent | 0.09 | 0.00 |
| 39 | Lakes/Ponds-Seasonal | 0.53 | 0.00 |
| 40 | Reservoir/Tanks-Permanent | 50.42 | 0.39 |
| 41 | Reservoir/Tanks-Seasonal | 152.75 | 1.19 |
| Waterbodies | | 861.58 | 6.73 |
| 42 | Current | 14.42 | 0.11 |
| 43 | Abandoned | 1.12 | 0.01 |
| Shifting cultivation | | 15.54 | 0.12 |
| Grand Total | | 12805 | 100.00 |

Built-Up

These are the areas of human habitation that have a cover of buildings, transport and communication, utilities in association with water, vegetation and vacant lands. It consists of built-up (Compact & Sparse), Vegetated / Open Area, Rural, Industrial and Mining/Quarry. It occupies an area of 510.98 sq. km, which is about 3.99% of the total geographical area of the district. Of which, rural area contributes 2.59% which is 64.91% of the built-up category.

Built up - Compact (Continuous)

Most of the land is covered by buildings, roads, and artificially surfaced area and cover almost all the ground. The built-up - compact class is assigned when the urban structures and transport network (i.e. impermeable surfaces) occupies more than 80 % of the surface area. This category occupied 81.06 sq. kms, which are found in urban areas.

Built up - Sparse (Discontinuous)

Most of the land is covered by the structures like buildings, roads and artificially surfaced areas associated with vegetated areas and bare soil, which occupy discontinuous but significant surfaces. Between 30 and 80 % of the total surface should be impermeable. Scattered blocks of residential flats, hamlets and small villages are delineated under this category. It contributes an area of 16.68 sq. km, which is found in peri-urban areas.

Vegetated / Open Area

These are vegetated areas within urban agglomeration (situated within or in contact with urban areas). Vegetation cover of trees, shrubs, and herbs covers at least 5% of the total surface area which has been delineated. Parks, sport and leisure facilities, camping grounds, sports grounds, leisure parks, golf courses, race courses, including formal parks etc are considered in this category. This category occupies an area of 7.51 sq. km.

Built-Up – Rural

These are the lands used for the human settlement of size comparatively less than the urban settlements of which more than 80% of the people are involved in the primary activity of agriculture and associated with non-commercial and with allied classes are identified as built up (rural) category. The rural area contributed is about 331.90 sq. km.

Industrial

Non-linear impervious surfaces are included in this class which is related to trade, manufacturing, distribution, and commerce. These are areas where the human activity is observed in the form of manufacturing along with other supporting establishments for maintenance. The industrial area occupies an area of 57.93 sq. km, which is observed in and around towns.

Industrial area-Ash / Cooling Pond

These are the portions of industry which are used for temporary storage of ash, contaminated soil, rubble, cooling of hot water or tailing pond associated with the industry. The areas where industrial waste is permanently kept, categorized as other waste which is delineated under this category. A stockpile of storage dump of industrial raw material or slag/effluents or waste material or quarried/mixed debris from earth's surface is considered under this category. It is observed that this category is found around the industrial areas with an area of 1.27 sq. km.

Mining – Active

Mining areas encompass area under surface operations. The recognizable impacts of these activities on the landscape are unmistakable giant pit mines covering vast areas. The active mining areas are presently large-scale surface operations of removal of economically important ores and presently going on. The active mining area contributes an area of 2.19 sq. km.

Mining – Abandoned

These are the areas where large-scale surface operations of removal of economically important ores are carried out in the past, but presently kept abandoned due to various reasons like economical, operational, viability, disturbances etc. Only 1.26 sq. km has been contributed under this category.

Quarry

These are manifestations of surface mining operations wherein small-scale excavation of land surface for sand, gravel, clay-phosphate mines, limestone quarries etc. are taking place. They are mostly characterized by its nearness to urban areas. It contributes an area is about 14.63 sq.km.

Agricultural Land

The land use category primarily used for the production of food, fibre, and other commercial and horticultural crops. It includes land under crops namely cropland, fallow land, agricultural plantation and aquaculture. The agricultural category is

found as the major category covering 5960.63 sq. km (46.55%) during 2015-16. It is also found that double-cropped area is about 20% of the district total.

Kharif Crop

Agricultural area cultivated between June/July to September/ October coinciding with SW monsoon season is considered Kharif crop. It is associated with rain-fed crops under dryland farming with limited or no irrigation and areas of rain-fed paddy and other dry crops. Kharif is found to be the second major agricultural category with an extension of 1368.28 sq. km (10.69%).

Rabi Crop

These areas are cultivated between November/December to February/March. It is associated with areas under assured irrigation irrespective of the source of irrigation. However, rabi cropped areas also occur in rain-fed regions under residual soil moisture conditions especially in black soil areas with high rainfall during Kharif season. The extent of Rabi cropped area is about 107.97 sq. km (0.84%).

Zaid Crop

These are the areas that are cropped during summer (April – May) which are mostly associated with irrigated areas with fertile soils, confined to plains/delta areas. The areas are found in 8.74 sq. km during 2015-16.

Cropped in two seasons

These are the areas that are cropped during two cropping seasons that are often seen associated with irrigated areas. Three combinations are possible in this category viz., - Kharif + Rabi, Kharif + Zaid and Rabi + Zaid. It is found that this is the major agricultural category with an extent of 2575.91 sq. km (20.12%).

Cropped in more than two seasons

These are the areas which are cropped in more than two cropping seasons. It includes triple cropped areas (Kharif, Rabi and Zaid), areas under multiple cropping. Long duration crops like sugarcane, cotton, banana, pineapple etc., are considered under this category. It contributes an area of 298.33 sq. km (2.33%).

Fallow land

The agricultural land which is being used for cultivation but is temporarily allowed to rest or un-cropped for one or more seasons, but not less than a year and for not more than five years is referred to as/ called fallow land. The fallow land occupies an area of 227.72 sq. km.

Agricultural Plantation

These are the areas under agricultural tree crops planted adopting agricultural management techniques. These also include the areas of land use systems and practices wherein cultivation of herbs, shrubs, and vegetable crops are deliberately integrated with agricultural crops mostly in irrigated conditions for ecological and economic reasons. These areas are separable from cropland, especially with the data acquired during Rabi/Zaid season. Plantations appear in dark-red to red tone of different sizes with regular and sharp edges indicating the presence of a fence around it. It is found that 8.68% of the land under plantation crops during 2015-16.

Aquaculture

These are the areas where fish and shrimps are bred and reared for commercial purposes. Aquaculture ponds are located mostly along the coast or in lakes, river and estuaries. This category is mostly found along the coast with an area of 262.85 sq. km (2.05%).

Evergreen/Semi Evergreen-Dense/Open

These are the areas that comprise thick and dense canopy of all tall trees, which predominantly remain green throughout the year. It includes both coniferous and tropical broadleaved evergreen species. Semi evergreen is a forest type that includes a combination of evergreen and deciduous species with the former dominating the canopy cover. In East Godavari, it is attributed an area of 97.04 sq. km (0.76%).

Deciduous (Dry/Moist/Thorn)-Dense

This category is predominantly composed of species, which shed their leaves once a year, especially during summer. These are mostly broad-leaved tropical forests with a tendency to shed their leaves annually. This category includes all the areas where the canopy cover/density is more than 40 % and contributed 2707.61 sq. km.

Deciduous (Dry/Moist/Thorn)-Open

This category is predominantly composed of species, which shed their leaves once a year, especially during summer. These are mostly broad-leaved tropical forests with a tendency to shed their leaves annually. This category includes all the forest areas where the canopy cover/density ranges between 10 - 40 percent. An area of 645.47 sq. km is attributed to this category.

Forest Plantation

These are the areas of tree species of forestry importance, raised and managed especially in notified forest areas. Most of these are located in uplands, coastal areas within notified areas. Many of these can be identified based on the sharp boundary exhibited by them. The distribution of forest plantation is 92.97 sq. km.

Scrub Forest

These are the forest areas which are generally seen at the fringes of dense forest cover and settlements, where there is biotic and abiotic interference. Most times,

they are located closer to habitations. Forest blanks which are the openings amidst forest areas, devoid of tree cover, observed as openings of assorted size and shapes as manifested on the imagery are also included in this category. It is attributed an area of 87.03 sq. km (0.68%).

Swamp Forest (Mangrove)-Dense

These are the areas with the plants evergreen in nature, halophytic, dense or woody in nature, occurring along tidal waters/creeks, estuaries and along the delta in coastal areas. They are densely colonized in coastal on tidal flats, estuaries, salt marshes etc. This category includes all the areas where the canopy cover/density is more than 40%. This category is found along the coastal areas with an account of 163.79 sq. km.

Swamp Forest (Mangrove)-Open

These are the areas with the plants evergreen in nature, halophytic, dense or woody in nature, occurring along tidal waters/creeks, estuaries and along the delta in coastal areas. They are densely colonized in coastal on tidal flats, estuaries, salt marshes etc. This category includes all the forest areas where the canopy cover/density ranges between 10 and 40 percent. It is found that there is 39.99 sq. km area under this category.

Tree Clad Area-Dense

Areas with tree cover lying outside the notified forest area with a woody perennial plant with a single, well-defined stem carrying a more-or-less-defined crown and being at least 3 m tall. Plants essentially herbaceous but with a woody appearance (e.g. bamboos and ferns) are also classified as trees if the height is more than 5 m and as shrubs, if the height is less than 5 m. This category includes all the areas where the canopy cover/density is more than 40%. It occupied an area of 700.93 sq. km.

Tree Clad Area-Open

Areas with tree cover lying outside the notified forest area with a woody perennial plant with a single, well-defined stem carrying a more-or-less-defined crown and being at least 3 m tall. Plants essentially herbaceous but with a woody appearance (e.g. bamboos and ferns) are also classified as trees if the height is more than 5 m and as shrubs, if the height is less than 5 m. This category includes all the forest areas where the canopy cover/density ranges between 10 and 40 per cent. It is attributed to an area of 449.56 sq. km.

Wastelands

Wasteland is described as degraded land which can be brought under vegetative cover with reasonable effort and which is currently underutilized and land which is deteriorating for lack of appropriate water and soil management or on account of natural causes. Wastelands can result from inherent/imposed disabilities such as by location, environment, chemical and physical properties of the soil or financial or management constraints. The area under this category is 148.88 sq. km (1.16%).

Dense scrub

The scrub is usually confined to topographically elevated areas, on the hill slopes generally surrounded by agricultural lands. These areas possess shallow and skeletal soils, at times chemically degraded, extremes of slopes, severely eroded and lands subjected to excessive aridity with scrubs dominating the landscape. It is found with varying sizes of small to large areas having a contiguous or dispersed pattern. The dense scrub is mostly identified on the hills and occupied an area of 172.66 sq. km.

Open scrub

This category has a similar description as mentioned in the dense scrub excepting that they possess sparse vegetation or devoid of scrub and has a thin soil cover. The open scrub is found at foothills surrounded by agricultural lands with an extent of 56.22 sq. km.

Coastal Sand

Coastal sands are the sands that are accumulated as a strip along the sea-coast. Very high reflectance exhibited by this category especially in the NIR region of the spectrum enable their separation with the salt-affected land. It is found in along the coast and occupied an area of 33.67 sq. km (0.26%).

Barren Rocky/Stony waste

The barren rock exposures are especially confined to hilly terrain with down slope with rock outcrops, stony waste and fragments. The area under this category is 4.82 sq. km.

Wetlands

All submerged or water-saturated lands, natural or man-made, inland or coastal, permanent or temporary, static or dynamic which necessarily have a land-water interface, are defined as wetlands. The wetland category is found having 148.88 sq. km with four sub categories.

Wetland - Inland - Natural

These are the areas that include ox-bow lakes, cut-off meanders, playas, swamp, marsh, peat bogs etc (with vegetation). This category contributed 1.28 sq. km of the district total.

Wetland - Inland- Manmade

Waterlogged areas (seasonal and perennial) created due to the negative effect of human management practices and are present with vegetation. This is attributed an area of 4.31 sq, km.

Wetland – Coastal

These include estuaries, lagoons, creek, backwater, bay tidal flat/mud flat, mangrove, salt marsh/marsh with vegetation and other hydrophytic vegetation. It is contributing an area of 129.20 sq. km (1.59%)

Coastal - Saltpans

Saltpans are flat expanses of areas covered with salt usually white under the Sun. Saltpans are manmade saline ecosystem from which crude salt is extracted during summer. These are un-drained, usually small and shallow, natural depression or hollow in which brackish water accumulates and evaporates leaving behind salt deposits. This category is found nearer to Machhilipatnam and attributed 14.09 sq, km.

Water Bodies

This category comprises areas with surface water, either impounded in the form of ponds, lakes and reservoirs or flowing as streams, rivers, canals etc. These are seen clearly on the satellite image in blue to dark blue or cyan color depending on the depth of water. Waterbody category occupies an area about 861.58 sq. km with 6.73% of the district.

River/Stream-Perennial

Rivers/streams are the natural course of water flowing on the land surface along a definite channel/slope regularly or intermittently towards a sea in most cases or a lake or an inland basin in desert areas or a marsh or another river. These rivers/streams that flow continuously throughout the year are considered perennial. It contributes an area of 343.11 sq. km.

River/Stream-Non Perennial

When the water covers the surface for less than nine months in each year is considered non perennial. This also includes the dry part of river generally

characterized by the presence of sand or exposed rocks. It is found that most of the streams under non perennial category and contributes an area of 250.56 sq. km.

Canal/Drain

Canals and drains are artificial watercourse constructed for irrigation, navigation or to drain out excess water from agricultural lands. It is found mostly in coastal plains with an area of 64.13 sq. km.

Reservoir/Tanks-Permanent

The reservoir is an artificial lake created by the construction of a dam across the river specifically for hydel power generation, irrigation, and water supply for domestic/ industrial needs, flood control, either singly or in combination. Tanks are small lakes of impounded waterways constructed on land surface for irrigation. They are associated with croplands, low lands and reservoirs surrounded by hills without vegetation. This includes all reservoirs/tanks with water spread seen at least during one season in a year is considered under the permanent category. This category occupies an area of 50.42 sq. km.

Reservoir/Tanks-Seasonal

Dry reservoirs/tanks are those, which do not have water spread throughout the year are considered seasonal. It is found that many of the tanks under seasonal category with an area of 152.75 sq. km.

2.2 Slope Map of the District

The concept of measuring slope from a topographic map is a familiar one for most professionals in the natural resources and landscape planning / management and surveying professions. Slope is a measurement of how steep the ground surface is. Steeper the ground surface is, Greater the slope. Slope is measured by calculating the tangent of the surface. The tangent is calculated by dividing the vertical change in elevation by the horizontal distance. Slope is normally expressed in planning as a percent slope which is the tangent (slope) multiplied by 100. $\text{Percent Slope} = \text{Height} / \text{Base} * 100$

Reliable estimation of the stability of slopes and foundations is very demanding because it is important for terrain analysis to understand the natural process in the disciplines of topography, geology, soils, hydro-geology, infrastructure planning, hazard management both at surface and subsurface. In view of this, slope plays an important role while doing decentralized planning at grassroots level. Traditionally contour information from 1:50,000 or 1:25,000 topographic maps are used for preparation of slope by manual procedures based contour value difference for unit horizontal distance. The emergence of remote sensing & GIS systems and the availability of topographic data in DEM or TIN formats, slope maps can be generated using image processing and GIS methods. Representation of slope in percentage is understandable rationale for the resource mapping and planning. Slope information of the GIS layers plays an important role in natural resources and district planning process. It is proposed to generate the necessary slope layer from the available digital topographic data such as Carto DEM and open source Digital Elevation Model data (NRSC, 2009). The slope level map of East Godavari with color categories is given in Figure 9.

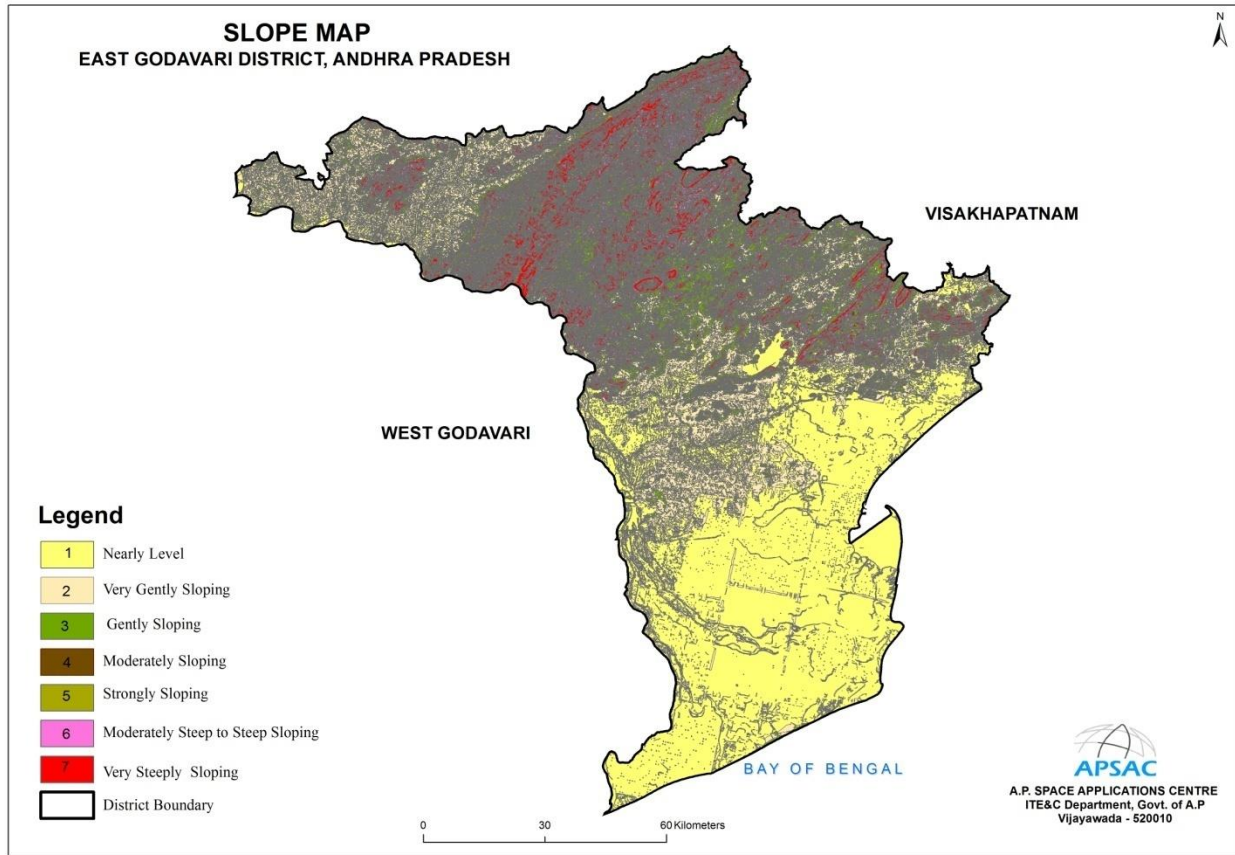


Fig. 9 General Slope of East Godavari District, Andhra Pradesh

Slope data generated from DEM using GIS techniques produces triangular nature slope polygon. To generate meaningful slope layer, it is suggested to aggregate slope polygons by using manual procedures. However, the slope generated from GIS analysis can be used directly for any decision-making. The accuracy of the slope is dependent on accuracy of the DEM used for slope generation. The DEM should be a bare earth and should not have spikes or dips which are common in automatic DEM generation. Therefore, to use Carto DEM, conversion to bare earth DEM has to be carried out before slope layer generation.

2.3 Forest Cover Distribution

The term forest is used to refer to land with a tree canopy cover of more than 10 percent and area of more than 0.5 ha. Forest is determined both by the presence of trees and the absence of other predominant land uses within the notified forest boundaries. The trees should be able to reach a minimum height of 5 m within the notified forest boundaries. The forest cover in the district based on the interpretation of IRS R2 LISS III data (2015-16) is 5022.94 sq. km which is 39.23% of the total geographical area (TGA) of the district. As per the land use manual (NRSC 2016), the forests of the district can be classified as 8 forest classes and class-wise areas are presented in Table-4.1. The spatial distribution of forest cover in the district is shown in Figure-10.

Table-2.2 Forest Cover Distribution of East Godavari District

| S. No | Forest Category | Area in sq. km. | % TGA |
|-------|--|-----------------|--------------|
| 1 | Evergreen / Semi Evergreen-Dense/Open | 97.04 | 0.76 |
| 2 | Deciduous (Dry/Moist/Thorn)-Dense | 2707.61 | 21.15 |
| 3 | Deciduous (Dry/Moist/Thorn)-Open | 645.47 | 5.04 |
| 4 | Forest Plantation | 92.97 | 0.73 |
| 5 | Scrub Forest | 87.03 | 0.68 |
| 6 | Swamp Forest (Mangrove)-Dense | 163.79 | 1.28 |
| 7 | Swamp Forest (Mangrove)-Open | 39.99 | 0.31 |
| 8 | Tree Clad Area-Dense | 700.93 | 5.47 |
| 9 | Tree Clad Area-Open | 449.56 | 3.51 |
| 10 | Grass & Grazing land-Tropical/Desertic | 38.55 | 0.30 |
| | Total Forest | 5022.94 | 39.23 |

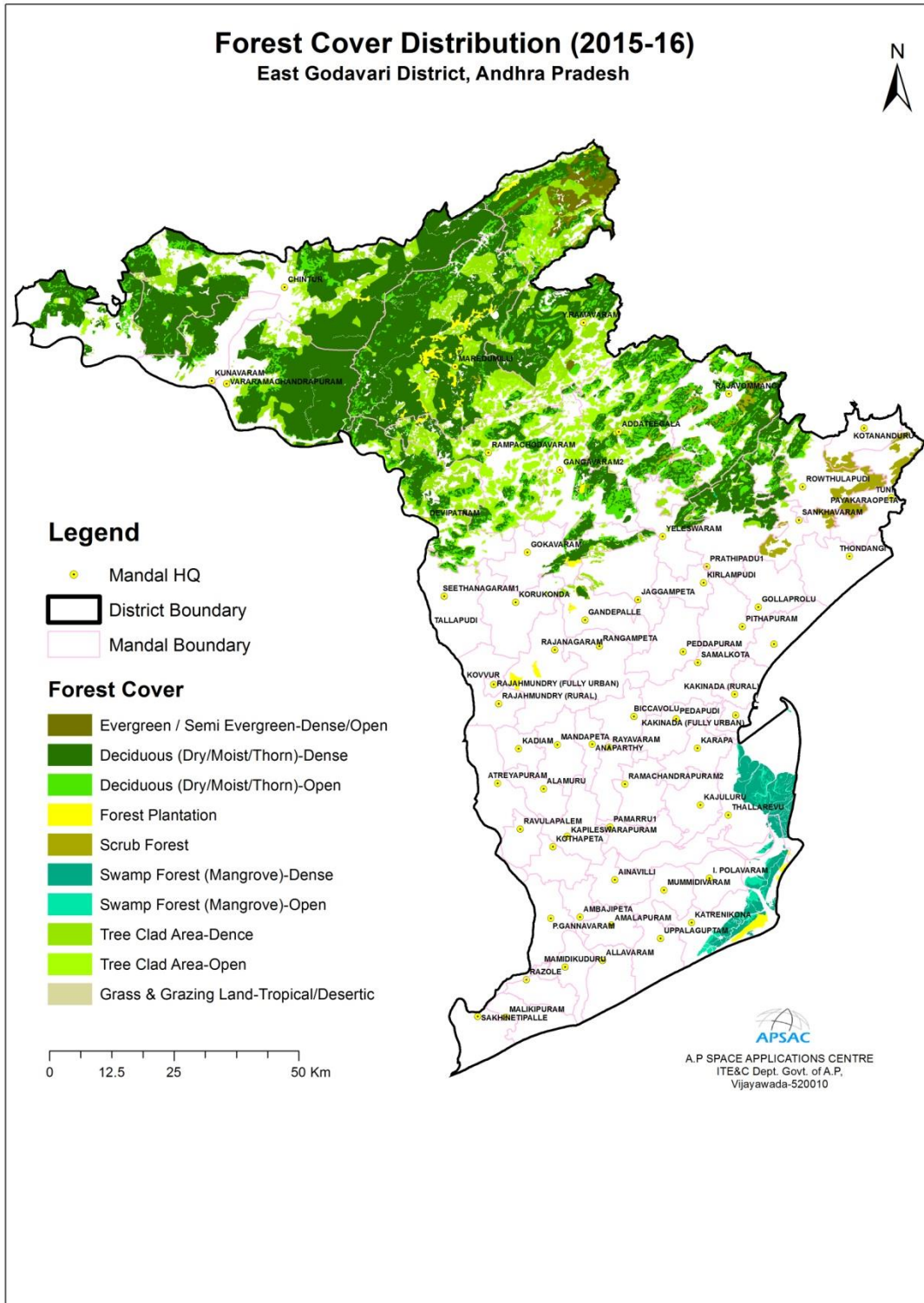


Fig. 10 Forest covers map of East Godavari District during 2015-16

2.4 Eco-sensitive zone in East Godavari district

The Forest Department, in collaboration with allied government departments and agencies, has identified nearly 376 sq km area for declaration of eco-sensitive zone around the Papikondalu National Park spread in Bhadrachalam South Division and Palvancha Division in the district.

In all, 49 villages located in the two forest divisions fall under the area identified as eco-sensitive zone, sources said. The exercise has been taken up in compliance with the directions issued by the Central government to demarcate ecologically sensitive zones around the national parks for conserving environment and ecology. The Papikondalu National Park, which is spread across Khammam, East Godavari, and West Godavari districts, has rich wildlife, including several endangered species. Several environmental organisations have expressed their serious concern over the alleged unrestricted movement of tourists in the area under the limits of the park, and the serious menace of dumping plastic carry bags in the Godavari.

Source: <https://www.thehindu.com/todays-paper/tp-national/tp-andhrapradesh/ecosensitive-zone-identified/article4413908.ece>

3. Agricultural Resources in East Godavari District

Remote sensing technology has been successfully used by APSAC during the last two decades in the areas of agriculture both in spatial and temporal domain under various projects. APSAC carried out in-season forecasting of acreage for major crops i.e. Kharif rice, Rabi rice, cotton, groundnut etc, at state/ district level for the last two decades, in Andhra Pradesh to enable the administrators and planners to take strategic decisions on import-export policy matters and trade negotiations. Rice and Cotton are the most dominant crops in Andhra Pradesh in both Kharif and Rabi seasons. In this connection, Department of Agriculture and Directorate of Economics & Statistics are generating data on conventional methods for estimation of crop area and production. In this regard, satellite remote sensing plays a pivotal role with limited field visits for timely estimation and monitoring the crops.

3.1 Kharif Rice Estimation using SAR data

Andhra Pradesh Space Applications Centre (APSAC) has carried out Kharif rice crop acreage estimation over East Godavari district using Microwave Remote Sensing (Sentinel-1A) data under FASAL project. Sentinel-1A Synthetic Aperture Radar (SAR) VV polarization data (Spatial Resolution 20m) is used for the analysis. The rice acreage using sentinel-1 microwave remote sensing data for East Godavari district was estimated as 157447 ha (Figure 11).

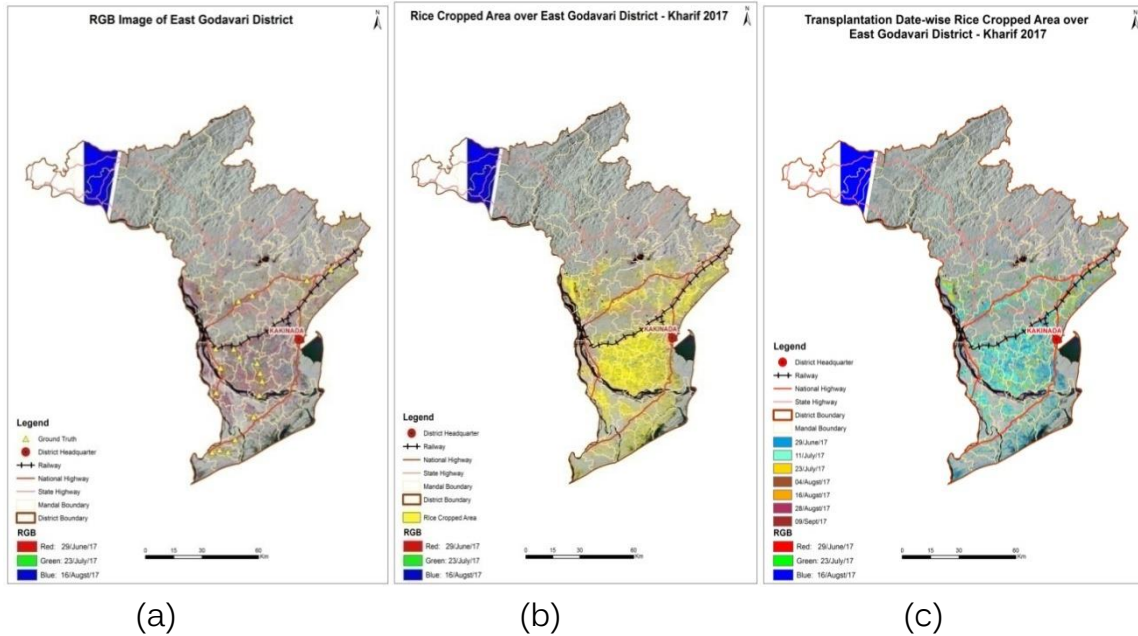


Fig. 11 (a) Ground truth data overlaid on multi-temporal RGB image, (b) Rice cropped area and (c) Transplantation date-wise rice cropped area over East Godavari District.

3.2 Kharif & Rabi crop acreage estimation using Optical Remote sensing data

Remote sensing technology has been successfully used by APSAC during the last two decades in the areas of agriculture both in spatial and temporal domain under various projects. APSAC carried out in-season forecasting of acreage for major crops i.e. Kharif rice, Rabi rice, cotton, groundnut etc, at state/ district level for the last two decades, in Andhra Pradesh to enable the administrators and planners to take strategic decisions on import-export policy matters and trade negotiations. Rice is the most dominant crop in Andhra Pradesh in both Kharif (July- October /November) and Rabi (November- April) seasons which grows in irrigated and rain-fed areas and other major crops are Groundnut, Cotton, Maize, Pulses, Sugarcane, Jowar, Chillies, etc. In this connection, Department of Agriculture and Directorate of Economics and Statistics are generating data on conventional methods for estimation of crop area and production. In this regard,

satellite remote sensing plays a pivotal role with limited field visits for timely for estimation and monitoring the crops.

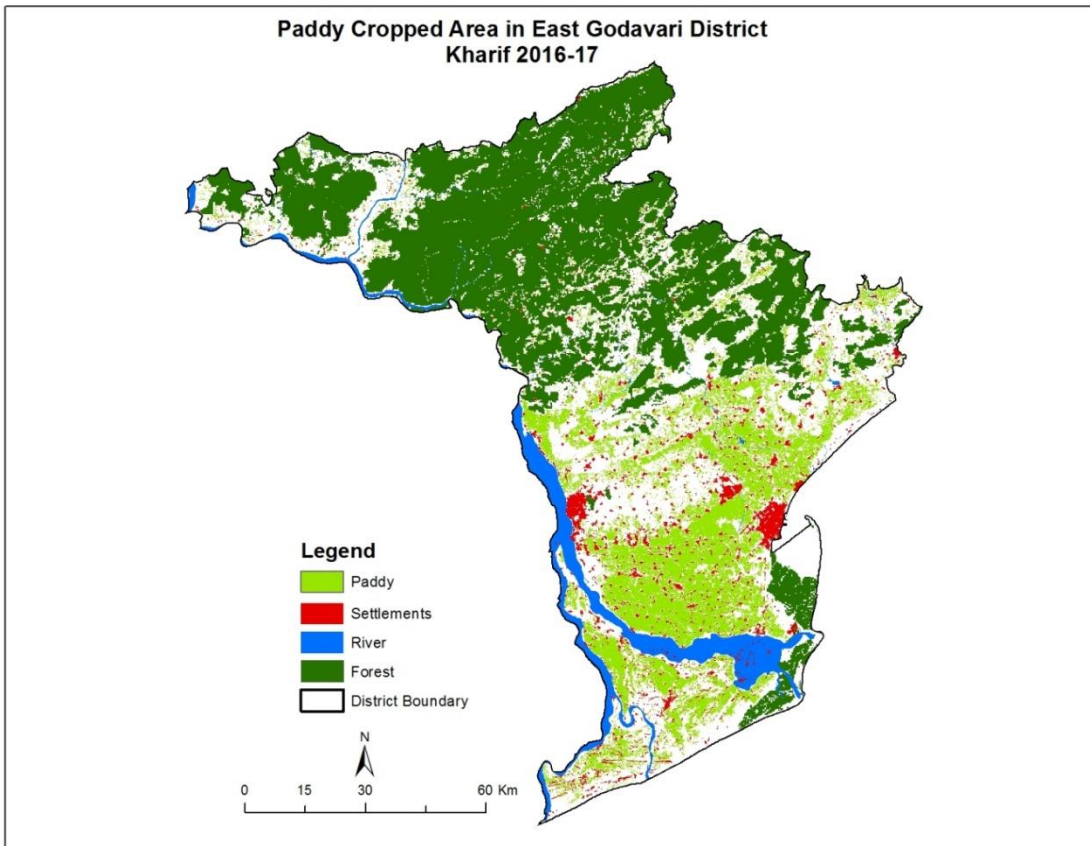


Fig. 12 Kharif Rice acreage estimation for Kharif 2016-17

| SNo. | District | Paddy acreage (ha.) using optical RS data |
|------|---------------|---|
| 1 | East Godavari | 242257 |

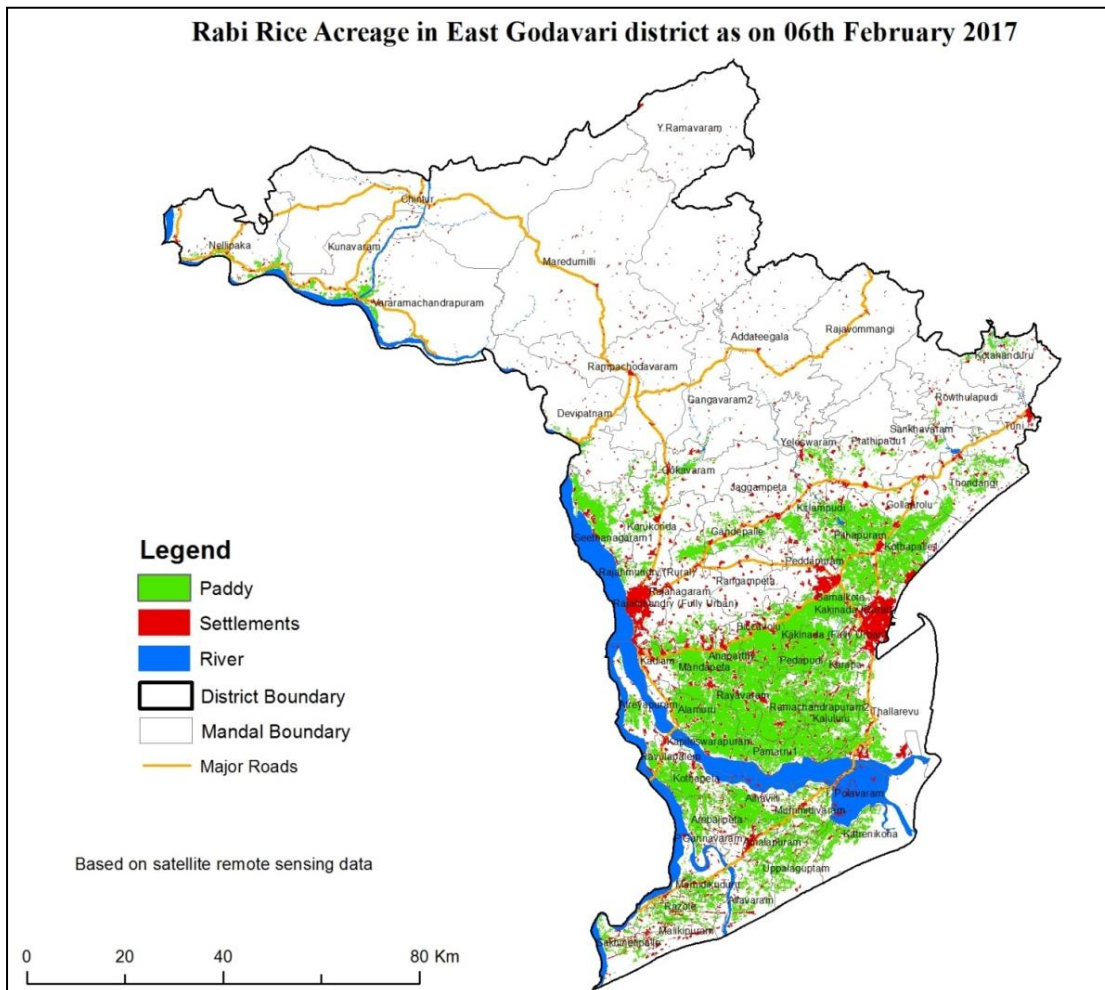


Fig. 13 Rabi Rice crop acreage estimation 2016-17

| SNo. | District | Paddy acreage (ha.) using optical RS data |
|------|---------------|---|
| 1 | East Godavari | 186808 |

3.3 Soil Resources of East Godavari district

The main soils in the district are alluvial (clay loamy) red soils, sandy loams and sandy clay. There are mostly alluvial soils in Godavari delta area and sandy clay soils at tail end portions of Godavari. There are red loamy soils in uplands and agency area of the district. As per the soil irrigation potential, 20.5 per cent area has moderate soil limitations for sustained use under irrigation; whereas 30.2 per cent lands that have moderate to severe soil limitations. As per the Land Irrigability Class, 37.4 per cent lands have moderate to severe limitations for sustained use under irrigation followed by 18.0 per cent lands with few limitations. The soils of most of the district are mostly under Inceptisols order followed by Entisols, Alfisols and Vertisols. The area under very deep soils is 77.5 per cent followed by moderately deep soils covering 8.1 per cent and deep soils with 2.6 per cent area coverage. (Source: Report SRM-19, Soil and Land Use Survey of India). The Soil resource map is shown in figure 14.

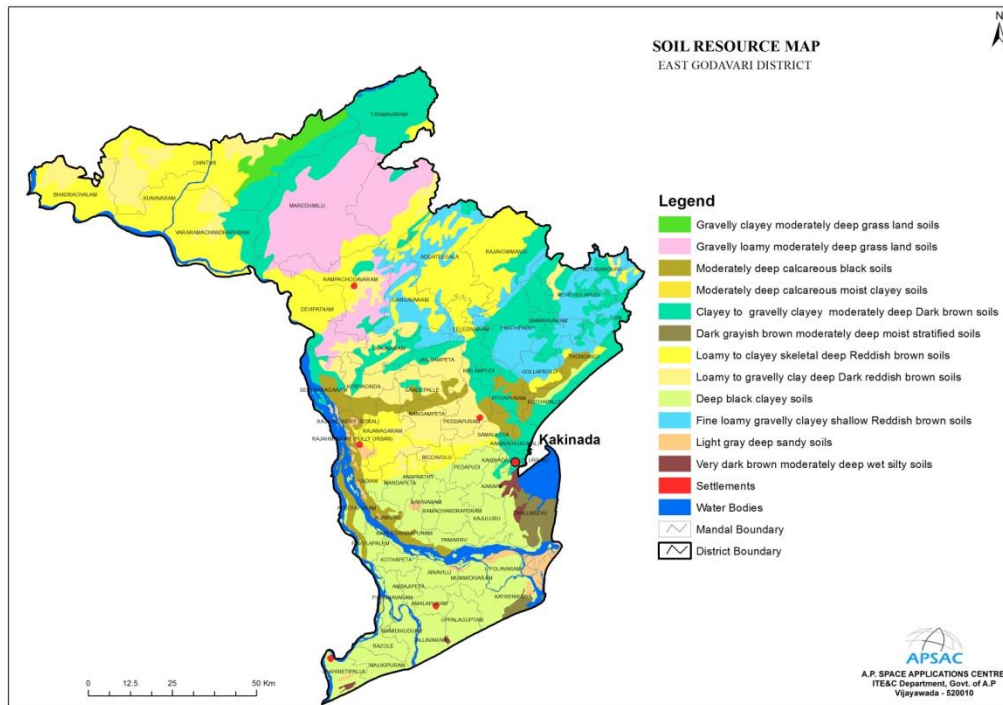


Fig. 14: Soil Resource map of East Godavari district

3.4 Horticulture Development in East Godavari District

In Andhra Pradesh, several horticultural crops are grown on a commercial scale in all the three regions and provide livelihood to millions of farmers in the state. Horticulture contributes to about 4 per cent of the state GDP. Horticultural crops cover 13% of the gross area in the state. The area under Horticulture is 19.06 lakh ha. with an annual production of 191.42 lakh tonnes. Andhra Pradesh with high geographical diversity, 9 agro-climatic zones, varied soil types and good irrigation resources is better placed in the production of various horticultural crops such as fruits (8.18 lakh ha; 104.95 MT), vegetables (2.51 lakh ha; 42.1 MT), plantation crops (3.48 lakh ha; 3.5 MT), spices (3.36 lakh ha; 11.8 MT), flowers (0.21 lakh ha; 1.16 MT) and medicinal and aromatic plants (0.09 lakh ha; 0.13 MT). Andhra Pradesh ranks first in the production of mango, chillies, turmeric, sweet orange and papaya. Coconut, oil palm and cashew are important plantation crops. Mango, sweet orange and banana are the leading fruit crops of Andhra Pradesh and accounts for over 86% of the area under fruit crops and over 77% of the total production. Tomato, brinjal and bhendi are the major vegetables grown in the state. Among the spices, Andhra Pradesh ranks first in area and production of chillies and turmeric. Rose, jasmine, crossandra, chrysanthemum, marigold, tuberose are the traditional flower crops of the state.

The Horticultural Department of Government of Andhra Pradesh has launched upon several programmes of development of horticulture, some of which are quite innovative: programmes for cultivation of pineapple as an inter crop in coconut orchards, mushroom cultivation; bee keeping suitable in upland agency areas in the district, and growth of non traditional plantations viz., Amla, Drumstick, Soapnut etc. Efforts are also made for the establishment of nutritional gardens in rural areas in the recent times. It is reported that 5091 beneficiaries are covered under this scheme so far. East Godavari district is a leader in Andhra Pradesh State in the matter of development of horticulture and growth of horticultural produce. With this rich horticultural wealth, there is immense potential for the development of agro based industries in the district.

Area statistics in hectares and production in metric tonnes of six types of horticultural species/ categories are collected for East Godavari District from the Department of Horticulture, Govt. of Andhra Pradesh for 2017-2018. They are fresh fruits, vegetables, plantations, spices, flowers, and medicinal & aromatic plants and the information is presented in Tables 5 -10. In each Table, the breakup of each horticultural variety is given in terms of aerial extent (ha) and production (MT).

| Sl.No | Name of The Fresh Fruit | Statistics | |
|-------|------------------------------------|------------|------------|
| | | Area | Production |
| 1 | Amla | Area | 0 |
| | | Production | 0 |
| 2 | Banana | Area | 13592 |
| | | Production | 747560 |
| 3 | Ber | Area | 0 |
| | | Production | 0 |
| 4 | Lemon (Lime & Other Citrus Fruits) | Area | 1247 |
| | | Production | 19952 |
| 5 | Orange & Batavia | Area | 3187 |
| | | Production | 82862 |
| 6 | Custered Apple | Area | 538 |
| | | Production | 4604 |
| 7 | Grapes | Area | 0 |
| | | Production | 0 |
| 8 | Guava | Area | 212 |
| | | Production | 8056 |
| 9 | Jack Fruit | Area | 133 |
| | | Production | 4522 |
| 10 | Mango | Area | 14275 |
| | | Production | 199848 |
| 11 | Papaya | Area | 339 |
| | | Production | 33391.5 |
| 12 | Pineapple | Area | 12 |
| | | Production | 192 |
| 13 | Pomegranate | Area | 10 |
| | | Production | 160 |
| 14 | Sapota | Area | 233 |

| | | | |
|----|--------------------|-------------------|-------------|
| | | <i>Production</i> | 3171 |
| 15 | Muskmelon | Area | 0 |
| | | Production | 0 |
| 16 | Watermelon | Area | 0 |
| | | Production | 0 |
| 17 | Other Fruits | Area | 0 |
| | | Production | 0 |
| | Total Fresh Fruits | Area | 33777.8425 |
| | | Production | 1104318.425 |

From the Table-3.1, it is observed that there are eleven types of fresh fruits available in East Godavari District. The total aerial extent of fresh fruits cultivated in East Godavari District is 33777.84 ha with a production of 1104318.43 metric tonnes. Among all the fresh fruit varieties, Mango has the maximum aerial extent of 14275 ha with a production of 199848 MT followed by Banana with an aerial extent of 13592 ha with a production of 747560 MT.

| Sl.No | Name of The Vegetables | Statistics | |
|-------|------------------------|------------|--------|
| | | | |
| 1 | Beans | Area | 263 |
| | | Production | 4129.1 |
| 2 | Bitter Guard | Area | 326 |
| | | Production | 5868 |
| 3 | Bottle Gourd | Area | 125 |
| | | Production | 2625 |
| 4 | Brinjal | Area | 2129 |
| | | Production | 63231 |
| 5 | Cabbage & Knol-Khol | Area | 52 |
| | | Production | 988 |
| 6 | Capsicum | Area | 17 |
| | | Production | 561 |
| 7 | Carrot | Area | 80 |
| | | Production | 1600 |
| 8 | Cauliflower | Area | 78 |
| | | Production | 1170 |
| 9 | Cucumber | Area | 52 |

| | | | |
|----|-----------------------|------------|----------|
| | | Production | 1300 |
| 10 | Chillies Green | Area | 719 |
| | | Production | 20132 |
| 11 | Garlic | Area | 0 |
| | | Production | 0 |
| 12 | Elephant Foot Yam | Area | 257 |
| | | Production | 1542 |
| 13 | Bhendi | Area | 1087 |
| | | Production | 18479 |
| 14 | Onion | Area | 10 |
| | | Production | 250 |
| 15 | Parwal / Ponted Gourd | Area | 646 |
| | | Production | 24593 |
| 16 | Peas | Area | 740 |
| | | Production | 8876 |
| 17 | Potato | Area | 0 |
| | | Production | 0 |
| 18 | Radish | Area | 80 |
| | | Production | 1440 |
| 19 | Pumpkin | Area | 41 |
| | | Production | 861 |
| 20 | Sweet Potato | Area | 5 |
| | | Production | 150 |
| 21 | Tapioca | Area | 13639 |
| | | Production | 259141 |
| 22 | Tomato | Area | 470 |
| | | Production | 21150 |
| 23 | Other Vegetables | Area | 3353 |
| | | Production | 80472 |
| | Total Vegetables | Area | 24169 |
| | | Production | 518558.4 |

From the Table-3.2, it is observed that there are 21 varieties of vegetables grown in East Godavari District. The total aerial extent of vegetables cultivated in East Godavari District is 24169 ha with a production of 518558.4 metric tonnes. Among all the vegetable varieties, Tapioca has the maximum aerial extent of 13639 ha

with a production of 259141 MT followed by Brinjal with an aerial extent of 2129 ha with a production of 63231MT.

| Sl.No | Name of The Plantation | Statistics | |
|-------|------------------------|------------|------------|
| | | | |
| 1 | Arecanut | Area | 191 |
| | | Production | 382 |
| 2 | Cashew | Area | 30351 |
| | | Production | 33083 |
| 3 | Cocoa | Area | 5920 |
| | | Production | 4999 |
| 4 | Coconut | Area | 55501 |
| | | Production | 7242 |
| 5 | Oilpalm | Area | 30912 |
| | | Production | 587328 |
| 6 | Coffee | Area | 0 |
| | | Production | 0 |
| | Total Plantations | Area | 122875 |
| | | Production | 625791.438 |

From the Table-3.3, it is observed that there are 5 varieties of plantations grown in East Godavari District. The total aerial extent of plantations cultivated in East Godavari District is 122875 ha with a production of 625791.4 metric tonnes. Among all the plantation varieties, Oilpalm has the maximum aerial extent of 30912 ha with a production of 587328 MT followed by Coconut with an aerial extent of Cashew ha with a production of 33083 MT.

| Sl.No | Name of The Spices | Statistics | |
|-------|--------------------|------------|---------|
| | | | |
| 1 | Ajwan | Area | 0 |
| | | Production | 0 |
| 2 | Betelvine | Area | 224 |
| | | Production | 3819648 |
| 3 | Pepper | Area | 0 |

| | | | |
|---|------------------|------------|-----------|
| | | Production | 0 |
| 4 | Chillies (Dried) | Area | 2893 |
| | | Production | 17356.5 |
| 5 | Coriander | Area | 63 |
| | | Production | 126 |
| 6 | Ginger | Area | 16 |
| | | Production | 144 |
| 7 | Tamarind | Area | 0 |
| | | Production | 0 |
| 8 | Turmeric | Area | 558 |
| | | Production | 6138 |
| 9 | Others Spices | Area | 39 |
| | | Production | 273 |
| | Total (Spices) | Area | 3793 |
| | | Production | 3849946.5 |

From the Table-3.4, it is observed that there are 6 varieties of spices grown in East Godavari District. The total aerial extent of spices cultivated in East Godavari District is 3793 ha with a production of 3849946.5 metric tonnes. Among all the spices varieties, Chillies (Dried) has the maximum aerial extent of 2893 ha with a production of 17356.5 MT followed by Turmeric with an aerial extent of 558 ha with a production of 6138 MT.

| Sl.No | Name of The Flowers | Statistics | |
|-------|--------------------------|------------|------|
| 1 | Chrysanthemum | Area | 287 |
| | | Production | 5740 |
| 2 | Jasmine | Area | 121 |
| | | Production | 762 |
| 3 | Marigold | Area | 162 |
| | | Production | 1782 |
| 4 | Rose (Lakhs. Of Flowers) | Area | 22 |
| | | Production | 132 |
| 5 | Tuberose | Area | 198 |
| | | Production | 2376 |
| 6 | Crossandra | Area | 109 |
| | | Production | 360 |

| | | | |
|---|---------------|-------------------|-------|
| 7 | Other Flowers | <i>Area</i> | 68 |
| | | <i>Production</i> | 612 |
| 8 | Total Flowers | <i>Area</i> | 967 |
| | | <i>Production</i> | 11632 |

From the Table-3.5, it is observed that there are 7 varieties of flowers grown in East Godavari District. The total aerial extent of flowers cultivated in East Godavari District is 967 ha with a production of 11632 metric tonnes. Among all the flower varieties, Chrysanthemum has the maximum aerial extent of 287 ha with a production of 5740 MT followed by Tuberose with an aerial extent of 198 ha with a production of 2376 MT.

4. Coastal and Aquaculture Scenario of East Godavari

4.1 Shoreline Change Status of East Godavari District

The district of East Godavari, which is located in the Eastern Ghats, is a part of the old Godavari district. The district is also called as “Konaseema” because it is the cradle of coconut plantation in Andhra Pradesh. Two main branches of the Godavari pass through the district to join the Bay of Bengal. The headquarters of

the district is Kakinada. The East Godavari district lies on the North East coast of Andhra Pradesh. It is bounded by the Visakhapatnam district and the state of Orissa in the north; in the east and south by the Bay of Bengal; and Khammam and West Godavari districts in the west. East Godavari is located between the northern latitudes of 16°30 and 18° and between the eastern latitudes of 80°31 and 82°30. The Climate is comparatively moderate throughout the year except during the months of April to June when the temperature reaches a maximum of 48 deg. Centigrade. The normal rainfall of the district is 1280.0 mm. More than half of the rainfall is brought by South-West Monsoon while a large portion of the rest of the district receives rainfall from the North-East Monsoon also, during October and November. The shoreline change estimation was carried out for entire East Godavari coast which is about 200.35 km in length. In this study, shorelines were extracted from satellite images for 1989, 1999, 2005, 2010 and 2012 by visual interpretation. Shoreline changes are presented with an emphasis on shoreline erosion, because it is an important natural coastal risk along coastal wetlands. The analysis of Table: 4.1 discovered that about 43.97% of the coastlines were under accretion, whereas 40.39% region was experiencing varying erosion and the 15.64% of the coast has stable form. While near Southside of Kakinada port and north portion of Vasishtha river area is noticed with high accretion and near North side of Kakinada port area has more erosion areas are found.

Table:4.1 Shoreline Characteristics and statics for East Godavari Coast

| Classification of Coast | Extent (km) | Percentage of Coast | Cumulative (%) |
|-------------------------|-------------|---------------------|----------------|
| High Erosion | 36.45 | 18.19 | |
| Medium Erosion | 20.94 | 10.45 | |
| Low Erosion | 23.54 | 11.75 | 40.39 |
| High Accretion | 61.14 | 30.52 | |
| Medium Accretion | 17.53 | 8.75 | |
| Low Accretion | 9.42 | 4.70 | 43.97 |

| | | | |
|--|--------|-------|-------|
| Stable Coast | 31.33 | 15.64 | 15.64 |
| Number of port/Harbour | 1 | | |
| Length of Breakwater ' / Groyne /Seawall | 4.11 | | |
| Length of coastline Including River Mouth and Ports | 200.35 | | |

Shoreline Change Erosion/Accretion East Godavari District - Andhra Pradesh

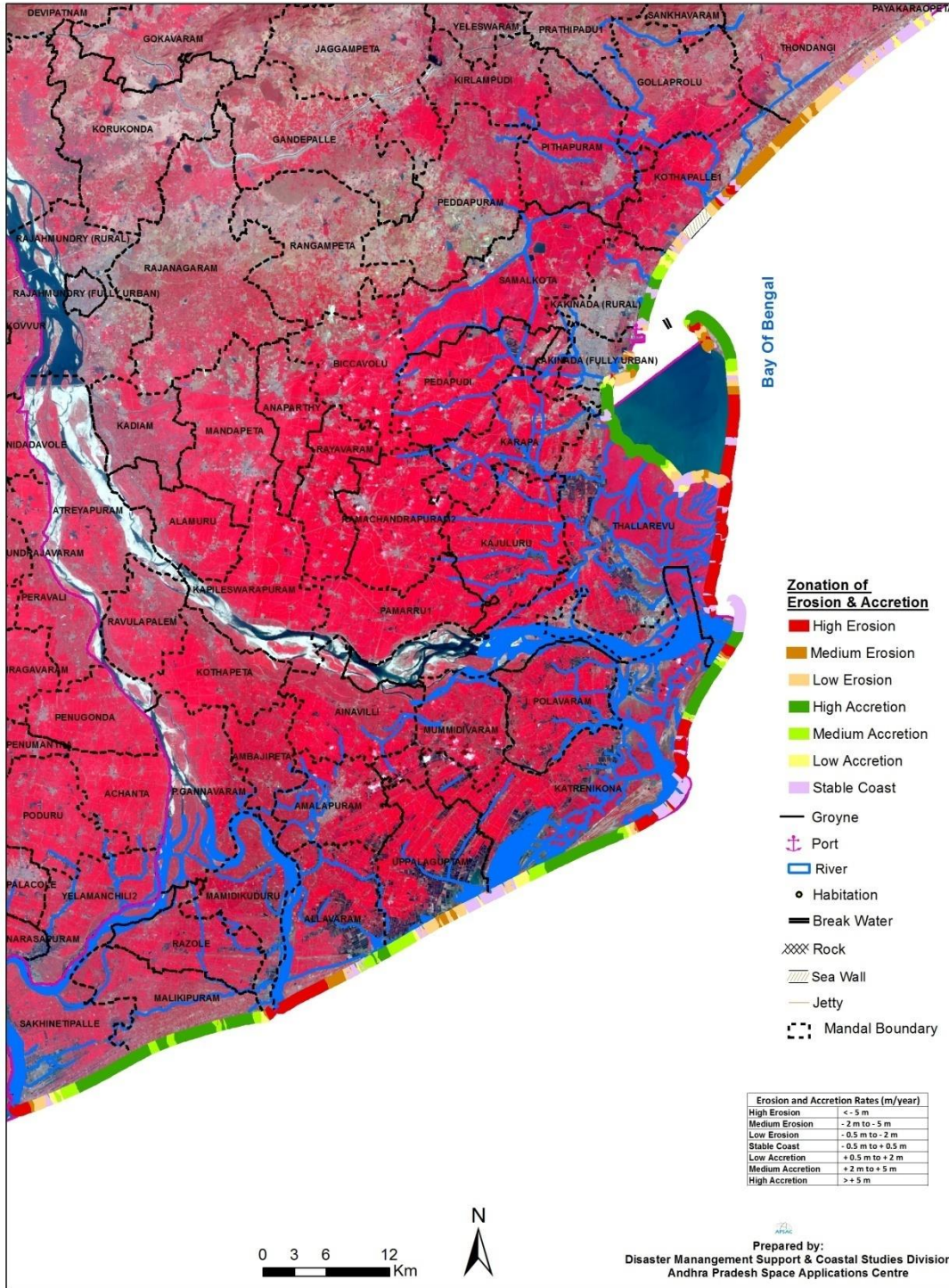


Fig. 15 Status of shoreline change in East Godavari district

4.2 Aquaculture in East Godavari District

Nine percent of aqua area of Andhra Pradesh has been distributed in East Godavari district along Vasishta Godavari, Vainateyam Godavari, Gautami Godavari, Gaderu River, Bandaru Kaluva, Kunavaram Drain, Nimmakayala Kottapalli Channel, Vasalatippa Drain, Lower Kausika Drain, Samantakurru Channel, Gundipudi Channel, Adivipalem Branch Channel, Gudimula Channel and other small rivers, streams, drains and Canals. In East Godavari, 15,533 ha Aquaculture, 7763 ha Abandoned/dry/Potential, 27 ha Saltpans and 23,324 ha total aqua area is distributed. In East Godavari district, the highest aquaculture area is distributed in Uppalaguptam Mandal i.e 2,629 ha aquaculture, 964 ha Abandoned/dry/Potential and total 3,593 ha area is distributed and least is in Ambajipeta mandal 2 ha, Samalkota 5 ha, Rayavaram 6 ha aquaculture and Abandoned/dry/Potential area has been distributed. (Fig.16)

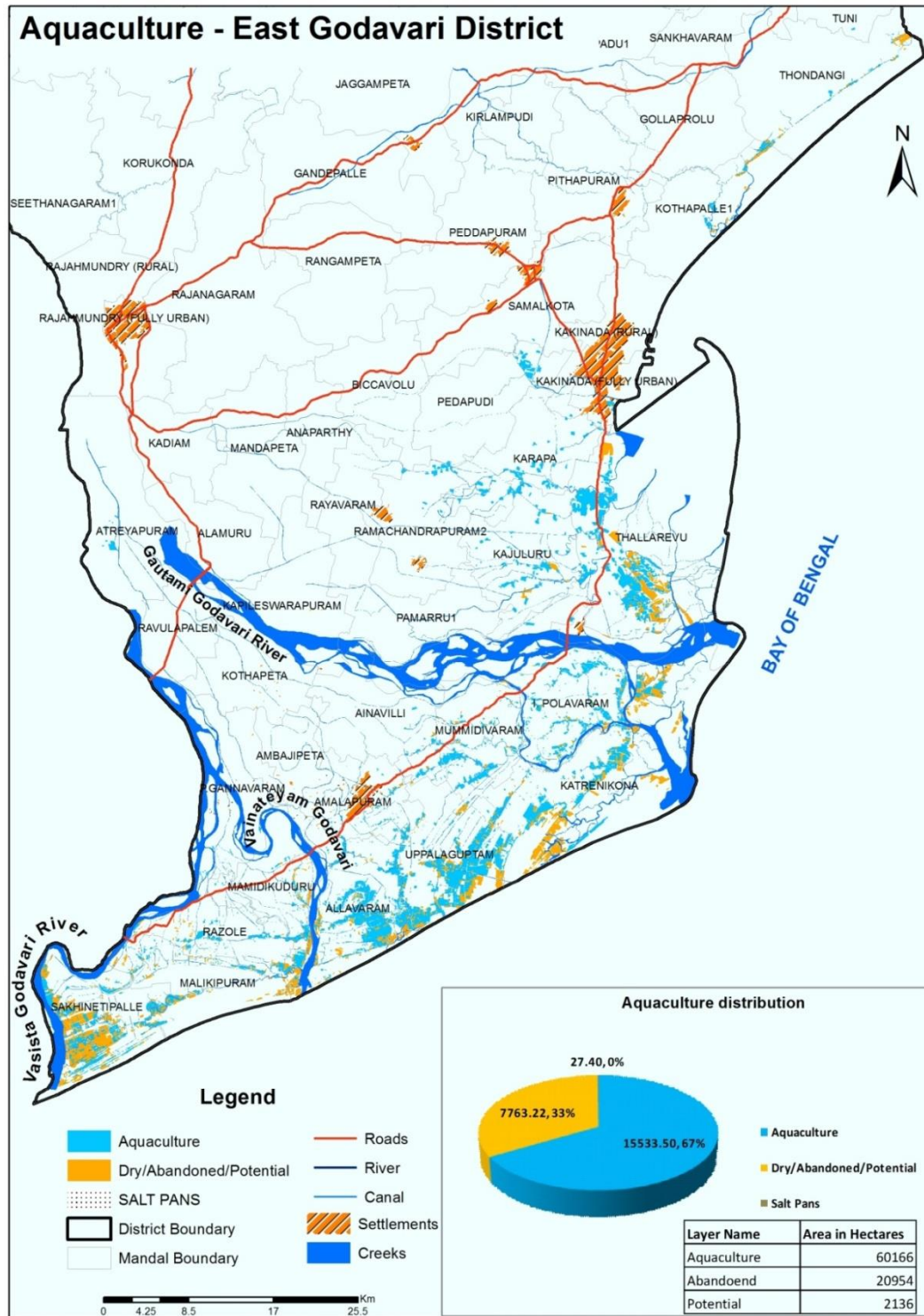


Fig. 16 Aquaculture distribution in East Godavari district

Table.4.2 Mandal - wise Aquaculture distribution in East Godavari district

| Mandal - wise Aquaculture in East Godavari (Area in ha) | | | | | |
|---|------------------------|----------|--------------|---------|--------|
| Sn | Mandal Name | Aquacult | Dry/Abandone | Saltpan | Total |
| 1 | Ainavilli | 69 | 11 | | 79 |
| 2 | Allavaram | 2122 | 531 | | 2653 |
| 3 | Amalapuram | 191 | 32 | | 223 |
| 4 | Ambajipeta | 2 | 0 | | 2 |
| 5 | Atreyapuram | 72 | 0 | | 72 |
| 6 | I. Polavaram | 1114 | 146 | | 1260 |
| 7 | Kajuluru | 567 | 95 | | 662 |
| 8 | Kakinada (Fully Urban) | 39 | 5 | | 44 |
| 9 | Kakinada (Rural) | 19 | 0 | | 19 |
| 10 | Karapa | 416 | 0 | | 416 |
| 11 | Katrenikona | 2124 | 1792 | 27 | 3944 |
| 12 | Kothapalle | 153 | 125 | | 278 |
| 13 | Malikipuram | 361 | 324 | | 685 |
| 14 | Mamidikuduru | 409 | 412 | | 821 |
| 15 | Mummidivaram | 379 | 89 | | 467 |
| 16 | P.Gannavaram | 51 | 0 | | 51 |
| 17 | Pedapudi | 235 | 0 | | 235 |
| 18 | Ramachandrapuram | 134 | 0 | | 134 |
| 19 | Rayavaram | 6 | 0 | | 6 |
| 20 | Razole | 414 | 109 | | 523 |
| 21 | Sakhinetipalle | 1456 | 1960 | | 3416 |
| 22 | Samalkota | 5 | 0 | | 5 |
| 23 | Thallarevu | 2443 | 1001 | | 3444 |
| 24 | Thondangi | 114 | 169 | | 284 |
| 25 | Tuni | 7 | 0 | | 7 |
| 26 | Uppalaguptam | 2629 | 967 | | 3596 |
| | Total | 15,534 | 7,764 | 28 | 23,325 |

5 Water Resources in East Godavari District

5.1 Surface Water Resources of East Godavari district

Andhra Pradesh state is rich in water resources. River Godavari is the largest and broadest river in the southern India, which originates at Triambakeshwar near Nasik in Maharashtra. The Delta coastal line in the district is around 150 Kms in the Eastern sea board of India with minor ports at Kakinada and Odalarevu. The details of major and medium projects of East Godavari district are as follows:

5.1.1 Major and Medium Irrigation Projects in East Godavari district

Irrigation has assumed an increasing significance in agriculture in the context of new technology, where high yielding varieties and multiple cropping is being practiced. The main reasons for low yields are inadequate rainfall, uneven and uncertain rains during the period of crop growth. It is generally found that the introduction of irrigation is associated with changes in the cropping pattern. The shift from traditional cropping pattern to the most advantageous cropping pattern is possible only in the presence of irrigation facilities. The new agricultural technology is highly based on sufficient moisture conditions. Thus, the development of irrigation is crucial for increasing agricultural production. The irrigation projects are classified as major, medium and minor irrigation projects.

5.1.2 Major Irrigation Project

The major irrigation projects covering East Godavari district are Godavari Eastern Delta. The district is enriched by huge water resources of River Godavari and major streams like Yeleru, Suddagedda, Pampa and Thandava. The Delta coastal line is around 150 Kms in the Eastern sea board of India with minor ports at Kakinada and Odalarevu. Sir Arthur Cotton Barrage has an extent of 483199 acres and Yeluru reservoir project an extent of 53017 acres, Thandava reservoir project with an extent of 16947 acres and Chagalnadu L.I. Scheme an extent of 22846 acres are the major projects of East Godavari districts (Fig. 17). The overall coverage under major irrigation project is 5,76,009 acres. The major ongoing irrigation project is Polavaram project. Under this ongoing project, about 71,000

acres are covered and second major river ongoing project is Venkatnagaram Lift Irrigation project under which anthe area about 24,000 acres are covered.

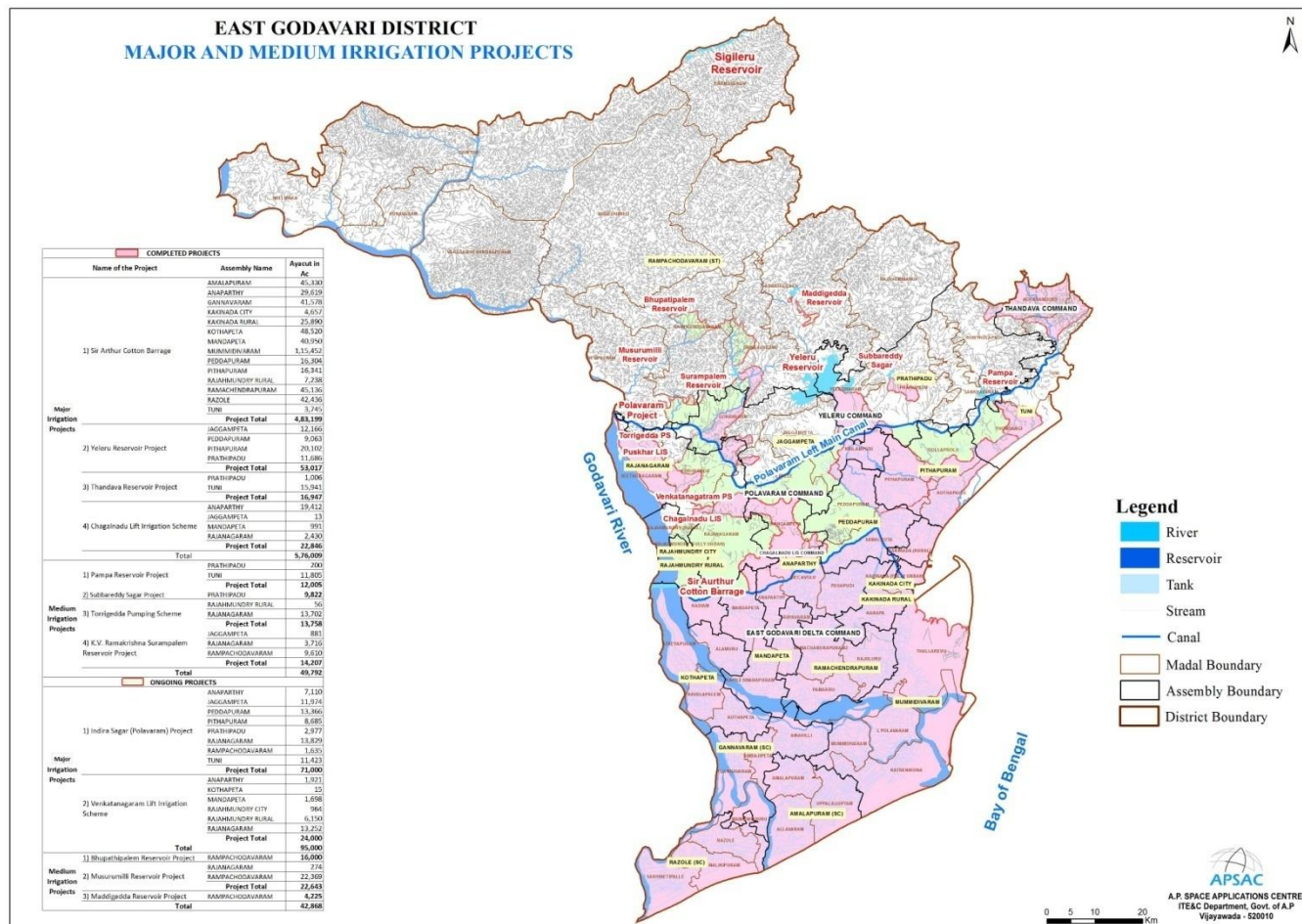


Fig. 17 Major and Medium Irrigation Projects of East Godavari District

5.1.3 Medium Irrigation Project

The Medium Irrigation projects are Pampa reservoir Project, Subbareddy Sagar project, Torrigeedda pumping scheme and K.V. Ramakrishna Surampalem reservoir Project. These medium irrigation projects fall under eight assembly

segments with an ayacut of 49,792 acres. The medium ongoing projects are Bhupathipalem reservoir project, Musurumilli reservoir project and Maddigedda reservoir project. These medium irrigation projects fall under four assembly segments with an ayacut of 42,868 acres.

5.1.4 Tank Information System

Andhra Pradesh Space Application centre developed Web Portal GIS for Tank Information System (TIS) in Andhra Pradesh. In the web portal, minor irrigation tanks are classified as more than 40 ha, 10 to 40 ha and less than 10 ha command. Information pertaining to nearly 15,000 tanks in Andhra Pradesh has been published in APSAC website , while information related to 454 tanks of East Godavari district has been published in the said website so far. The tank-wise information presents the location details, hydrological details and other standard information related to the tank. The details are shown in website. <http://apsac.ap.gov.in:8090/tis/index.html>

5.2 Ground Water Scenario and Quality of the District

5.2.1 Geomorphology of the District

Geomorphologically, the district is divisible into (1) a low lying deltaic and coastal plain, having a gentle easterly slope in the south, (2) a sediplain region with mesas, structural hills, pediment, and piedmont complex, comprising valley fins, taluscones and fans in the middle and pediment / pediplain complex, with structural and denudational hills in the north. The deltaic plain shows a relief between 15m, at its apex to 2m, near the coast. The upland plain (plateau) of Rajahmundry Formation rises to a height of 45m to 70m, near Rajahmundry. The deltaic and coastal plains are characterised by landforms of both fluvial_and marine regimes. Amongst the fluvial landforms, active channel (Gautami Godavari and Vasistha Godavari) with associated braided/ channel bars and levees form a part of the sub-aerial top-set beds of the delta. Of all the levees, the one developed near Dowleswaram, 500mwide, 2m high over the ambient flood plain is worth

noting. Using IRS satellite data and GIS detailed geomorphological and structural map of Krishna District was generated as per Rajiv Gandhi National Drinking Water Mission (RGNDWM) guidelines on 1:50,000 scale. The objective of this mapping is to map lithology, geomorphology and structural characteristics of an area on 1:50,000 scale and to integrate the same to locate potential ground water prospect zones and to recommend suitable structures for ground water recharge. Various hydrogeomorphic units are delineated and suitable recharge structures are proposed at drinking water affected villages under this project. The description of geomorphic units of different origins (Fig.18) mapped in East Godavari District are described below.

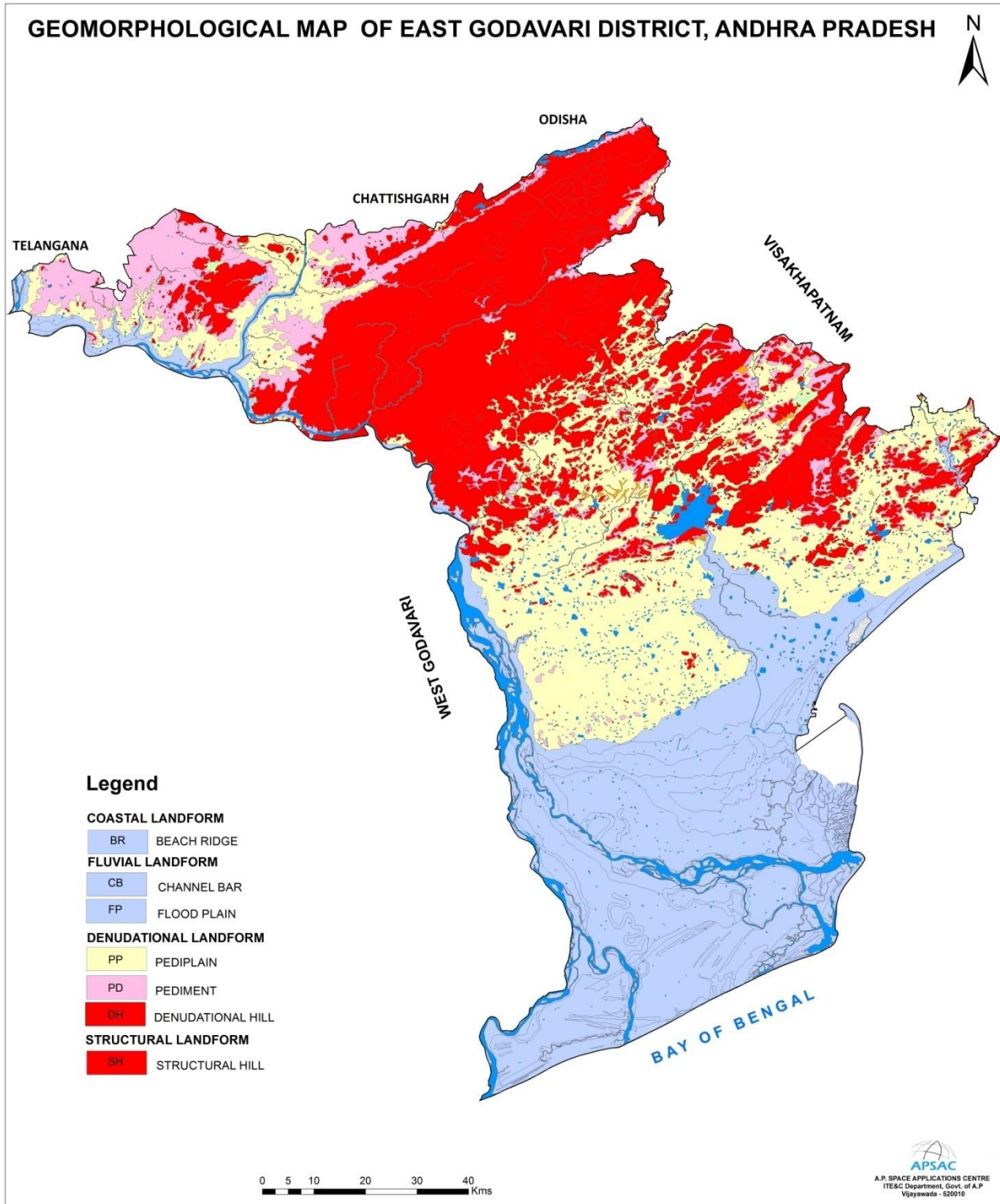


Fig. 18 Geomorphology of East Godavari District, Andhra Pradesh

5.2.2 Landforms of fluvial origin

The word fluvial is used in Earth science to refer to the processes and landforms produced by running water. As with other surficial processes, running water can either erode material from the earth's landscape, or deposit layers of sediment. The resulting landforms can thus be classified as either erosional landforms or depositional landforms. The incredible power of running water in carving various erosional and depositional landforms is well known. Although the quantity of water in stream is small at one time during the course of the year, very large volumes of water move through the channel and they form an important component in the hydrological cycle. The fluvial dissection of the landscape consists of valleys and their included channel ways organized into a system of connection known as a drainage network. Drainage networks display many types of quantitative regularity that are useful in analyzing both the fluvial systems and the terrains that they dissect (NRSA, 2007).

Alluvial plain: A level or gently sloping tract or a slightly undulating land surface produced by extensive deposition of alluvium, usually adjacent to a river that periodically overflows its banks; it may be situated on a flood plain, a delta, or alluvial fan. This landform is predominantly seen on the southern part of the District.

Palaeochannel: Deep valleys cut in the bedrock terrain and today filled largely with alluvium, glacial outwash gravels and sands or with tills. These are good source for underground water.

Flood plain: The surface or strip of relatively smooth land adjacent to a river channel constructed (or in the process of being constructed) by the present river in its existing regimen and covered with water when the river overflows its banks at times of high water. It is built of alluvium carried by the river during floods and deposited in the sluggish water beyond the influence of the swiftest current.

Delta: The low, nearly flat, alluvial tract of land deposited at or near the mouth of a river, commonly forming a triangular or fan shaped plain of considerable area

enclosed and crossed by many distributaries of the main river, perhaps extending beyond the general trend of the coast, and resulting from the accumulation in a wider body of water (usually a sea) of sediment supplied by a river in such quantities that it is not removed by tides, waves and currents.

Valley fills: The unconsolidated sediment deposited by any agent so as to fill or partly fill a valley.

5.2.3 Landforms of coastal origin

Coasts are also the loci of a unique assemblage of erosional and depositional processes. The various landforms of coastal areas are almost exclusively the result of the action of ocean waves. Wave action creates some of the world's most spectacular erosional landforms. Where wave energy is reduced, depositional landforms like beaches are created. The source of energy for coastal erosion and sediment transport is wave action. A wave possesses potential energy as a result of its position above the wave trough, and kinetic energy caused by the motion of the water within the wave. This wave energy is generated by the frictional effect of winds moving over the ocean surface. Higher the wind speed and the longer the fetch or distance of open water across which the wind blows and waves travel, larger the waves and the more energy they, therefore, possess. Long open ocean waves or swells travel faster than short, locally generated sea waves. They also have longer wave periods and this is how they are distinguished from the short sea waves on reaching the coast. Long swells, which have travelled hundreds of kilometers, may have wave periods of up to 20 seconds. Smaller sea waves have wave periods of 5 to 8 seconds. Where ocean depths are greater than the length of the waves, the wave motion does not extend to the ocean floor and therefore remains unaffected by the floor. As the ocean depth falls below half the wavelength, the bottom increasingly affects the wave motion. As the depth of water decreases, the wave height increases rapidly and the wavelength decreases rapidly. Thus, the wave becomes more and more peaked as it approaches the shore, finally curling over as a breaker and breaking on the shore.

As the wave breaks, its potential energy is converted into kinetic energy, providing a large amount of energy for the wave to do work along the shoreline. Transportation by waves and currents is necessary in order to move rock particles eroded from one part of a coastline to a place of deposition elsewhere. One of the most important transport mechanisms results from wave refraction. Since waves rarely break onto a shore at right angles, the upward movement of water onto the beach (swash) occurs at an oblique angle. However, the return of water (backwash) is at right angles to the beach, resulting in the net movement of beach material laterally. This movement is known as beach drift. The endless cycle of swash and backwash and resulting beach drift can be observed on all beaches. Frequently, backwash and rip currents cannot remove water from the shore zone as fast as it is piled up there by waves. As a result, there is a build up of water that results in the lateral movement of water and sediment just offshore in a direction with the waves. The currents produced by the lateral movement of water are known as long shore currents. The movement of sediment is known as long shore drift, which is distinct from the beach drift described earlier, which operates on land at the beach. The combined movement of sediment via long shore drift and beach drift is known as littoral drift. Tidal currents along coasts can also be effective in moving eroded material. While incoming and outgoing tides produce currents in opposite directions on a daily basis, the current in one direction is usually stronger than the other resulting in a net one-way transport of sediment. Long shore drift, long shore currents, and tidal currents in combination determine the net direction of sediment transport and areas of deposition. Using multi-temporal satellite data can bring out the dynamics of the coast (NRSA, 2007).

Beach: A gently sloping zone, typically with a concave profile, of unconsolidated material that extends landward from the low-water line to the place where there is a definite change in material or physiographic form (such as a cliff) or to the line of permanent vegetation (usually of the effective limit of the highest storm waves).

Beach ridge: A low, essentially continuous mound of beach or beach and dune material (sand, gravel, shingle) heaped up by the action of waves and currents on

the backshore of a beach beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.

Coastal plain: A low, generally broad but sometimes narrow plain that has its margin on the shore of a large body of water (esp. the ocean) and its strata either horizontal or very gently sloping toward the water, and that generally represents a strip of recently emerged sea floor or continental shelf.

Dune and Swale complex: It is a large complex of parallel wetland swales and upland beach ridges (dunes) found in coastal embayment and on large sand spits along the shorelines of the Great Lakes. The upland dune ridges are typically forested, while the low swales support a variety of herbaceous or forested wetland types, with open wetlands more common near the shoreline and forested wetlands more prevalent far from the lake.

Tidal flat: An extensive, nearly horizontal, marshy or barren tract of land that is alternately covered and uncovered by the rise and fall of the tide, and consisting of unconsolidated sediment (mostly mud and sand). It may form the top surface of a deltaic deposit.

5.2.4 Landforms of Structural Origin

Landform of structural origin is related to structural aspect of the area. Most of the landforms under this class have genesis related to underlying structure. Structure plays an important role in reducing the resistance of rock which manifests itself in different geomorphic forms. Some of the variations in minor and some are in mega scale. The mega scale forms have a dramatic effect on the genesis of landforms and hence mapping of such forms indirectly indicates the structural set up of the area. The mega scale structural features like fault and fold depending on

its type plays an important role in genesis of structural landform. The influence of geologic structures on the development and appearance of landscapes is prominent. The influence of geologic structures ranges from large features, which exert a dominant influence on the form of an entire landscape, to small features, which affect an individual landform and the geomorphic processes operating on it. The structural control could be active structures whose form is directly impressed on the modern landscape or ancient structural features whose influence on a modern landscape is due primarily to differential erosion (NRSA, 2007).

Dome: A general term for any dome shaped landform or rock mass, such as a smoothly rounded rock-capped mountain summit, roughly resembling the dome of a building.

Structural Hills: Hills and valleys, which are originated due to tectonic process and are highly dissected by the drainage lines. This can be further classified as highly, moderately and low dissection depending on the density of joints and drainage. Mostly, this will be interpreted from a planimetric satellite data and the classification is highly subjective.

Dyke Ridge: Intrusive features that are emplaced within the pre-existing fractures or where the fluid pressure is great enough for them to form their own fracture during emplacements. They are discordant bodies.

Cuesta: A hill or ridge with a gentle slope on one side and a steep slope on the other; specifically an asymmetric ridge with one face (dip slope) long and gentle and conforming with the dip of the resistant bed or beds that form it, and the opposite face (scarp slope) steep or even cliff-like and formed by the out crop of the resistant rocks, the formation of the ridge being controlled by the differential erosion of the gently inclined strata.

5.2.5 Landforms of denudational origin

Landform of denudational origin is formed where the denudation process dominates over the other process. Most of the landforms resulting due to this process is the combined effect of mechanical and chemical weathering.

Denudation is the process of removal of material by erosion and weathering. This has direct influence on the relief of the area especially in the reduction of relief to the base level. The agents are mostly water, ice and wind. The major factors affecting denudation are geology, climate, tectonics and anthropogenic effects. All rocks and minerals at or near surface are attacked by physical and chemical process. The effect of this process is not same everywhere because of rocks varying resistance to change. As a result, weathering and erosion yield number of landforms, which have typical shape and forms. Weathering is an essential part of the rock cycle. The parent material, or rock weathered material is disaggregated to form smaller fragments and some of the minerals are dissolved and removed by the agent of water. This removal of material is erosion and is accomplished by running water, wind, glacier etc. The weathering provides a raw material for the sedimentary rock and soil (NRSA, 2007).

Denudational Hill: It is a highly dissected hill which has obliterated the structures.

Inselberg: A prominent, isolated, steep sided, usually smoothed and rounded, residual knob, hill or small mountain of circumdenudation rising abruptly and surrounded by an extensive and nearly level, lowland erosion surface in a hot, dry region (as in the deserts of southern Africa or Arabia), generally bare and rocky although partly buried by the debris derived from and overlapping its slopes; it is characteristic of an arid or semiarid landscape in a late stage of the erosion cycle.

Pediment: A broad, flat or gently sloping, rock floored erosion surface or plain of low relief, typically developed by sub aerial agents (including running water) in an arid or semiarid region at the base of an abrupt and receding mountain front or plateau escarpment, and underlain by bedrock (occasionally by older alluvial deposits) that may be bare but more often partly mantled with a discontinuous veneer of alluvium derived from the upland masses and in transit across the surface.

Pediment-Inselberg Complex: The pediments dotted by numerous inselbergs of small sizes, which make it difficult to distinguish from the pediments. Hence, it is called a complex of pediment and inselberg.

Pediplain: An extensive, a multi-concave, rock cut erosion surface formed by the coalescence of two or more adjacent pediments and occasional desert domes, and representing the end result (the “peneplain”) of the mature stage of the erosion cycle. Based on the thickness of weathering, they are further classified as shallow, moderate and deep pediplains.

Residual Hill: A small remnant hill, which has witnessed all forms of denudation.

5.3 Structural Features of East Godavari District

East Godavari District has consolidated formations which include crystallines (Khondalites, Charnockites and granitic gneisses) and Meta sediments (Dolomites, shales, phyllites and quartzites) of Archaean and Pre-cambrian periods, respectively. The Khondalite Group of rocks are seen as prominent hill ranges (strike ridges) south of Vijayawada city, extending towards north and northeast. The rocks of Khondalite, Charnockite groups and the layered complex show foliation trending dominantly N-S with local swerves to NE-SW and NW-SE (GSI, 2000). The semi consolidated formations are represented by Tertiary formations (Rajahmundry & Gollapalli sandstones) and unconsolidated formations comprise deltaic alluvial deposits of Quaternary period (CGWB, 2013). The structural map (Fig.19) of East Godavari District is given below:

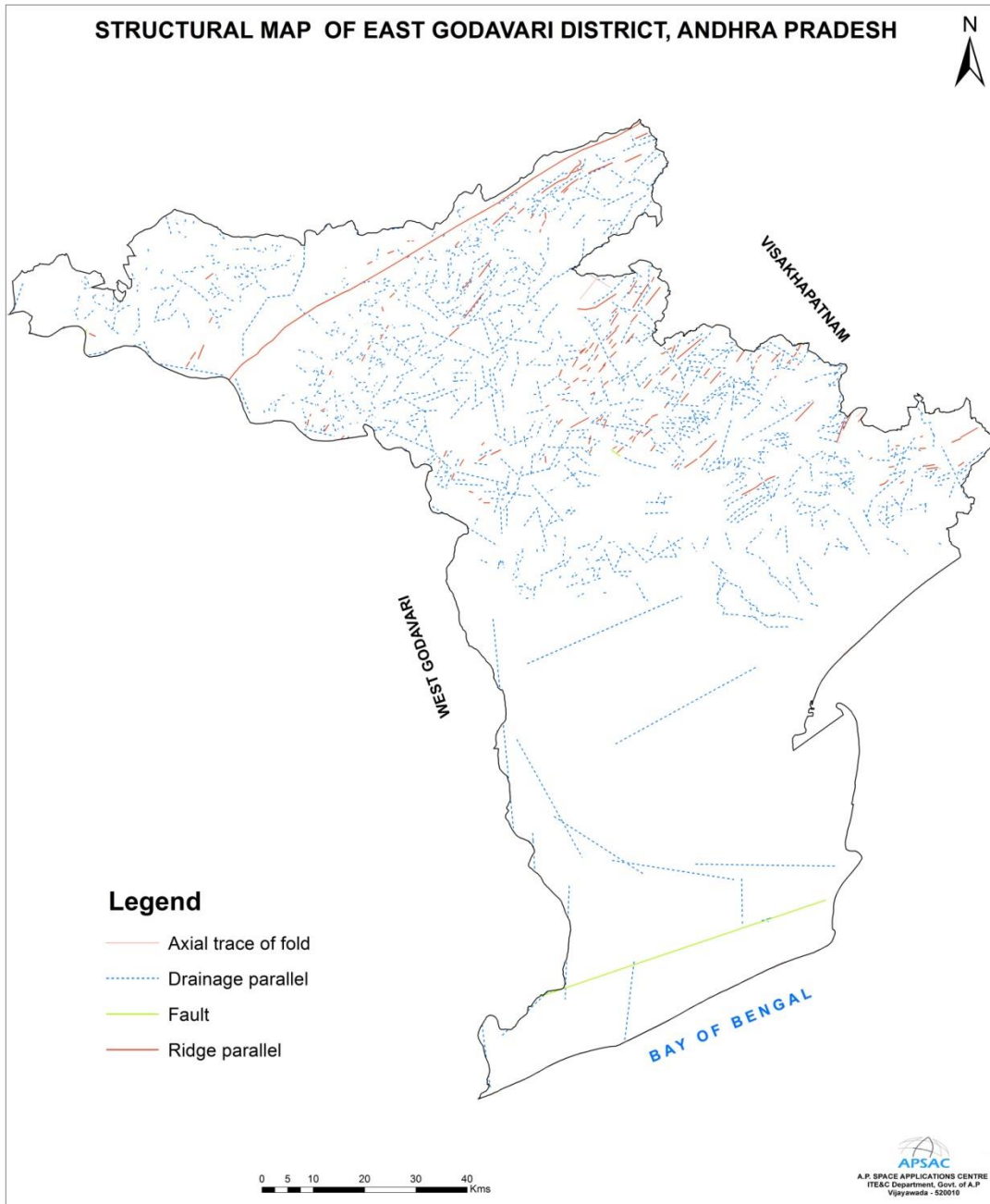


Fig. 19 Structural Map of East Godavari District, Andhra Pradesh

5.4 Ground Water Prospects in the District

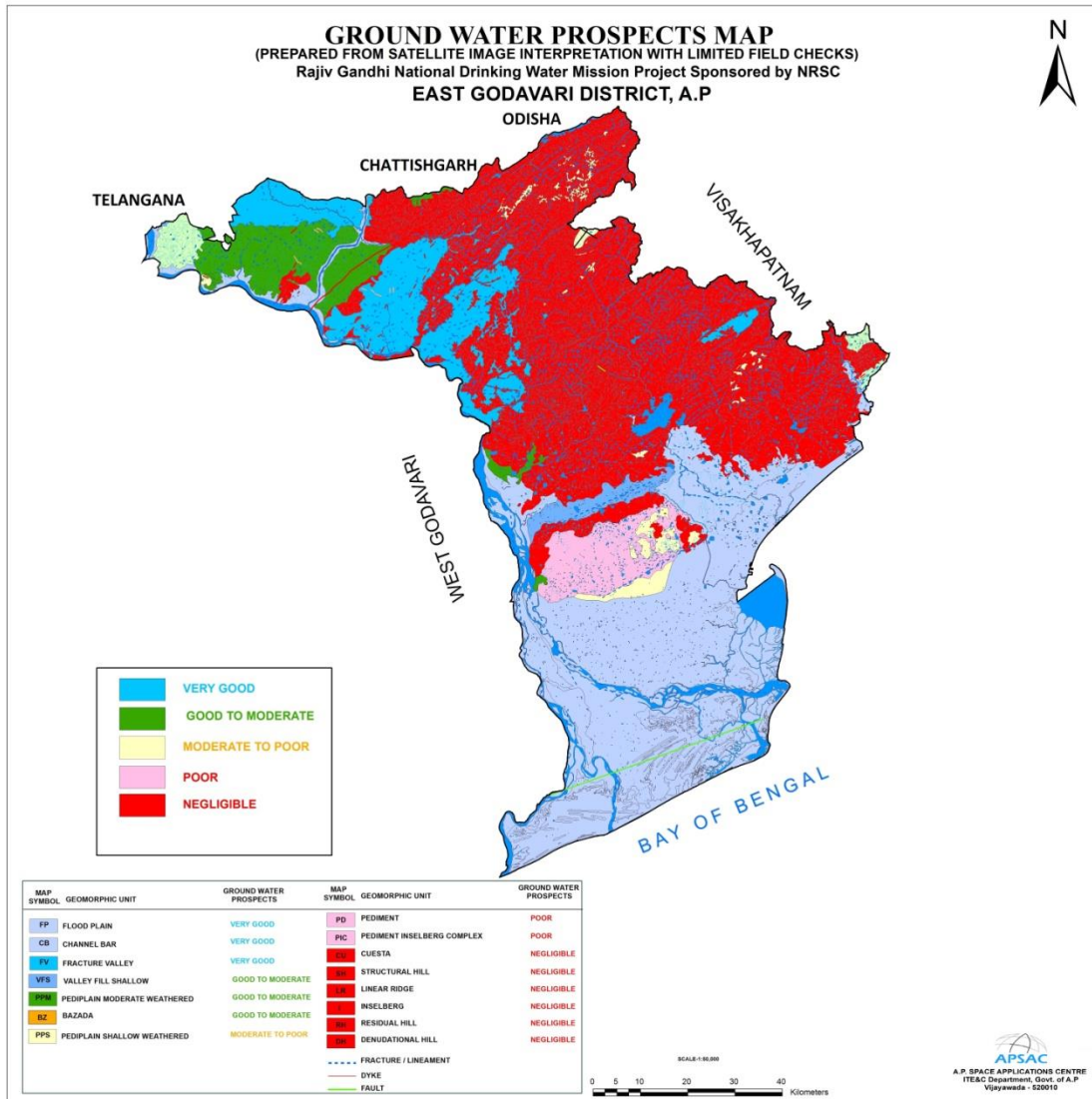


Fig. 20 Ground Water Scenario in East Godavari District, Andhra Pradesh

Ground water occurs in all most all geological formations and its potential depends upon the nature of geological formations, geographical setup, and incidence of rainfall, recharge and other hydrogeological characters of the aquifer. In consolidated formations, ground water occurs under unconfined to semi-confined conditions. Ground water is developed in these formations by dug wells, dug cum bore wells and bore wells tapping weathered and fractured zones. The yields are in the range of 20 to 70 m/day. The occurrence of fractures in the

crystalline formations is limited down to 30 to 40 m bgl and occasionally extends down to 70 - 100 m bgl. The bore wells constructed in the crystalline formations generally tap the weathered and fractured zones. The yields of the bore wells generally range between 80 and 400 m³/day. The higher yields are limited to the available thickness of fractured and jointed zones. In the meta sediments, the yields are very limited and are in the range of 10 to 80 m³/day. Higher yields occur in limestone formations. Ground water in semi-consolidated formations occurs under unconfined to confined conditions. Ground water is developed in these formations by dug cum tube wells and tube wells. These formations are potential aquifers. The yields of the dug cum tube wells are in the range of 30 to 45 m³/day. Granularity of the sandstone bed is the deciding factor of the yield potential as the higher yields are recorded in the Rajahmundry sandstones tapping coarse sandstone beds. The yields of the tube wells in Gollapalli sandstones and Rajahmundry sandstones are in the range of 60 to 200 m³/day and 600 to 1500 m³/day, respectively. The deltaic area is underlain by alluvium of recent age consisting of varying proportions of clay, silt, sand and gravel. The thickness of alluvium ranges from few meters to about 600 m followed by tertiary formations. In deltaic area, ground water occurrence is controlled by landforms. In deltaic area also, a lot of heterogeneity in hydrogeological conditions exist both spatially and vertically. Fresh water is generally limited to shallow to moderate depths only, whereas in the southern part of the delta it occurs as pockets and lenses. Deep aquifers are generally saline. Palaeo-channels are favourable locations for fresh water aquifers. Ground water occurs under phreatic to confined conditions and is developed through shallow dug wells, filter point wells and shallow tube wells. The depth of dug wells ranges from about 2 to 7 m, while the depth of filter point wells varies from 5 to 13 m and the depth of tube wells varies from 40 to 80 m. The yields generally range in this aquifer between 250 and 400 m³/day. Occasionally high yields up to 15 lps exist in the palaeo-channels. The transmissivity value of the aquifer in the semi & unconsolidated formations varies from 2.5 to 5560 m²/day. The depth of water levels during pre-monsoon season (May, 2012) in the district

ranges between 2 and 10 m bgl. The Ground water Department established extensive network of piezometer observation wells throughout Andhra Pradesh and monitoring the ground water levels (Fig.20) and distribution of Piezometer observation well is given in figure 21.

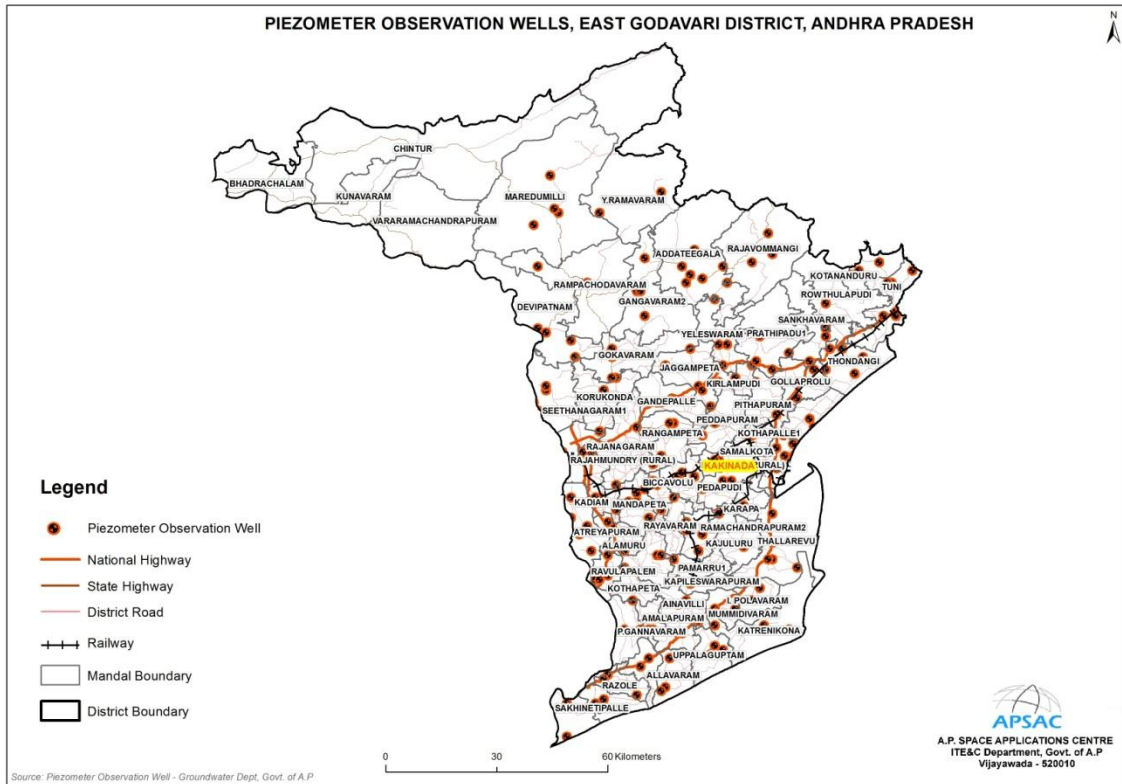
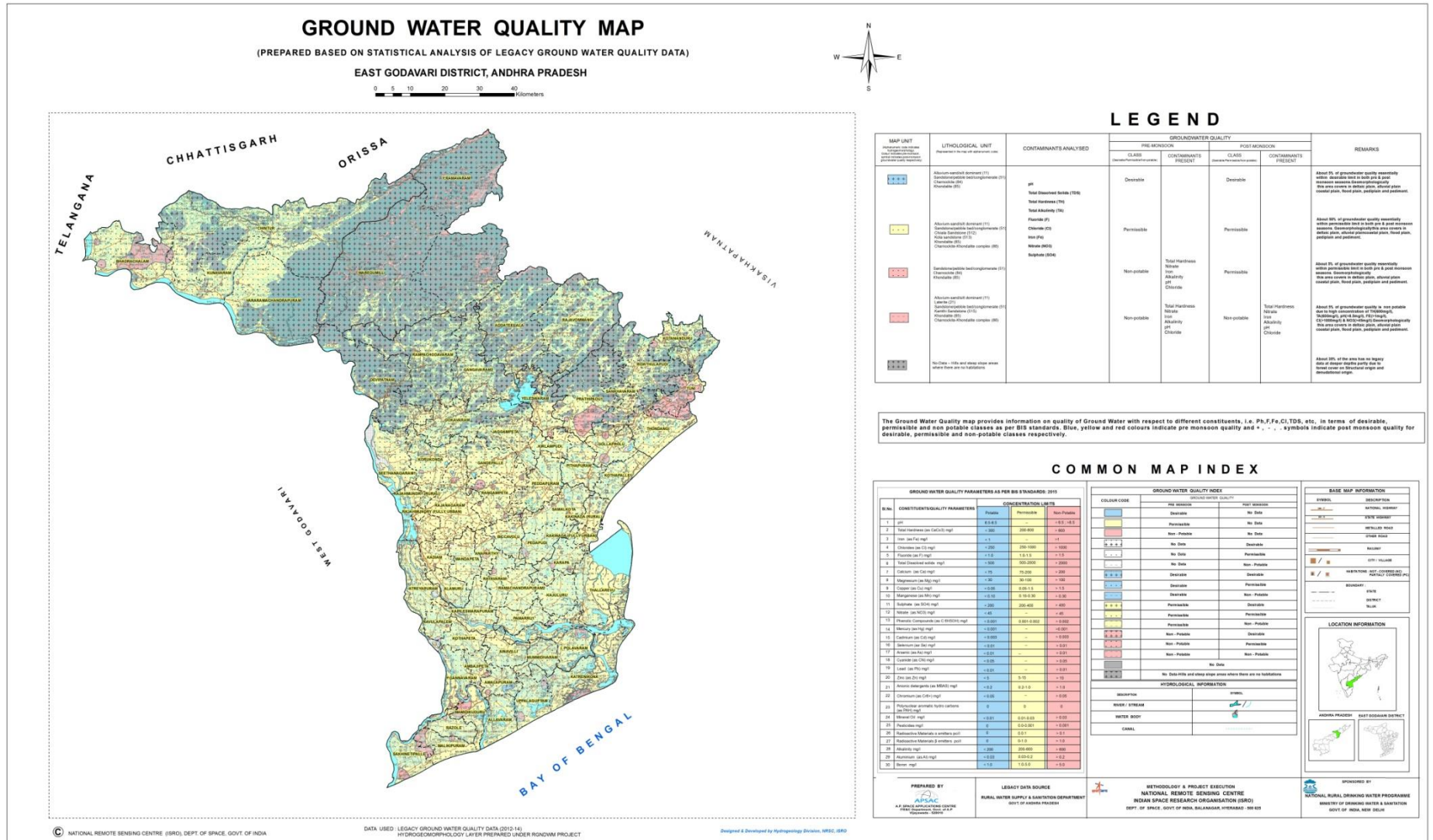


Fig. 21 Distribution of Piezometer Observation wells in East Godavari

5.5 Ground Water Quality of the District

The Godavari is the major river drain the district, which is perennial and flows along the western boundary of the district. South of Rajahmundry, the river bifurcates into two viz., Gautami Godavari in the East and Vasista Godavari in the West. The Godavari River further splits into smaller arms before it debouches into the Bay of Bengal. The other important rivers and tributaries of Godavari flowing in the district are Gondiyeru, Pamuleru, and Polavaram vagu, Sileru River, Suddagedda, Yeleru, Madeyeru and Tandava. The general drainage pattern is dendritic to sub-dendritic. The drainage density varies from less than 0.4 km/sq.km in poorly drained alluvial areas which covers the entire southern parts of the

district to 0.6 km/sq.km in the Northern parts occupied by crystalline rocks. Climate of the District is mainly warm. The District can be divided into four natural agro climatic zones – Central Delta, Eastern Delta, the Uplands and the Agency tracts. The delta lands are formed along the lower drainage basins of the major rivers flowing through the District viz., the Godavari, the Yeleru and the Pampa, where the elevation is usually a few feet above the mean sea level. Ground water samples were collected from 1892 habitations out of 2913 habitations representing two seasons i.e., post monsoon and pre monsoon in December 2012 and June 2014 for the entire District. The water samples were collected from Rural Water Supply and Sanitation Department (RWS & S) and analyzed for physico-chemical parameters like TDS, TH, Cl, NO₃, pH, F, Fe, TA and SO₄ using standard techniques in the laboratory and compared with the BIS (10500-2015), in terms of desirable, permissible and non potable classes. Blue, yellow and red colours indicate pre monsoon quality and +, -, Symbols indicate post monsoon quality for desirable, permissible and non-potable classes, respectively. From the analysis, it has been observed that the ground water is polluted in pre monsoon and post monsoon as about 55% of the area is under non potable category due to high concentration of Nitrate and Total Hardness. About 20% of the area is potable category remaining 25% of the area is covered in hills and water bodies of the entire District. The occurrence and movement of groundwater in an area is governed by several factors such as topography, lithology, and geological structure, depth of weathering, extent of fractures, drainage pattern, and climate conditions and interrelationship between these factors. The ground water quality map of East Godavari district is given in figure 22.



6 Geology and Mineral Resources of the District

6.1 Geology of East Godavari District

The northern half of the East Godavari district forms a part of the Eastern Ghats Mobile Belt, exposing all the characteristic litho units of the Eastern Ghats Viz., the Khondalite, Charnockite, and Migmatite groups. The Khondalite group is represented by Quartz, garnet-sillimanite gneiss (Khondalite), along with unmappable units of quartzite and calc-granulite/gneiss. Within the Khondalite suite itself, varied mineralogical assemblages like graphite schist, cordierite-sillimanite gneiss, and sapphirine-bearing quartzo-feldspathic gneiss occur. The Charnockite group consists of acidic, intermediate and basic varieties. The Migmatite group includes a host of rock types, like porphyroblastic granitoid gneiss, garnetiferous quartzo-feldspathic gneiss (leptynite), garnet-biotite-hypersthene gneiss and quartzo-feldspathic mobilizates. Unconformably resting over the crystalline rocks of Archaean age occur, the uppermost member (Tirupathi Sandstone) of the Gondwana Supergroup, deposited in a transitional environment, along the coast. It consists of coarse grained sandstone with conglomerate and clay zones. Ptylophyllum flora is recorded in the clay zone. Near Annavaram, the Gondwana rocks have yielded marine fauna (Triaonia Sp. Inoceramus Sp., Pseudomontis Sp., Pecten Sp. and Heiicoceras Sp.). The Deccan Traps occur, 2 km. north and east of Rajahmundry and extend in ENE-WSW direction. Limestone intertrappeans, rich in Gastropod and Lamellibranch fossils, occur near Kotilingala, Korukonda and Kateru. Rajahmundry Formation, named after the type locality, Rajahmundry, is an ensemble of fine-grained, purple coloured sandstone, grit and conglomerate, overlain by current bedded sandstone with clay and shale bands. Intermittently exposed between Rajahmundry and Samalkot, it is equivalent to Warkalli Beds of Kerala and Cuddalore Formation of Tamil Nadu. The deltaic plain is characterized by fluvial to fluvio-marine and marine deposits of Quaternary age, which are described in detail under geomorphology.

The Geological Survey of India (GSI, 2000) gave a detailed account of the geology/lithology of the District with a map on 1: 2,50,000 scale (Fig.23) and an elaborate legend with stratigraphic sequence (Fig.24). The description given by GSI is as follows.

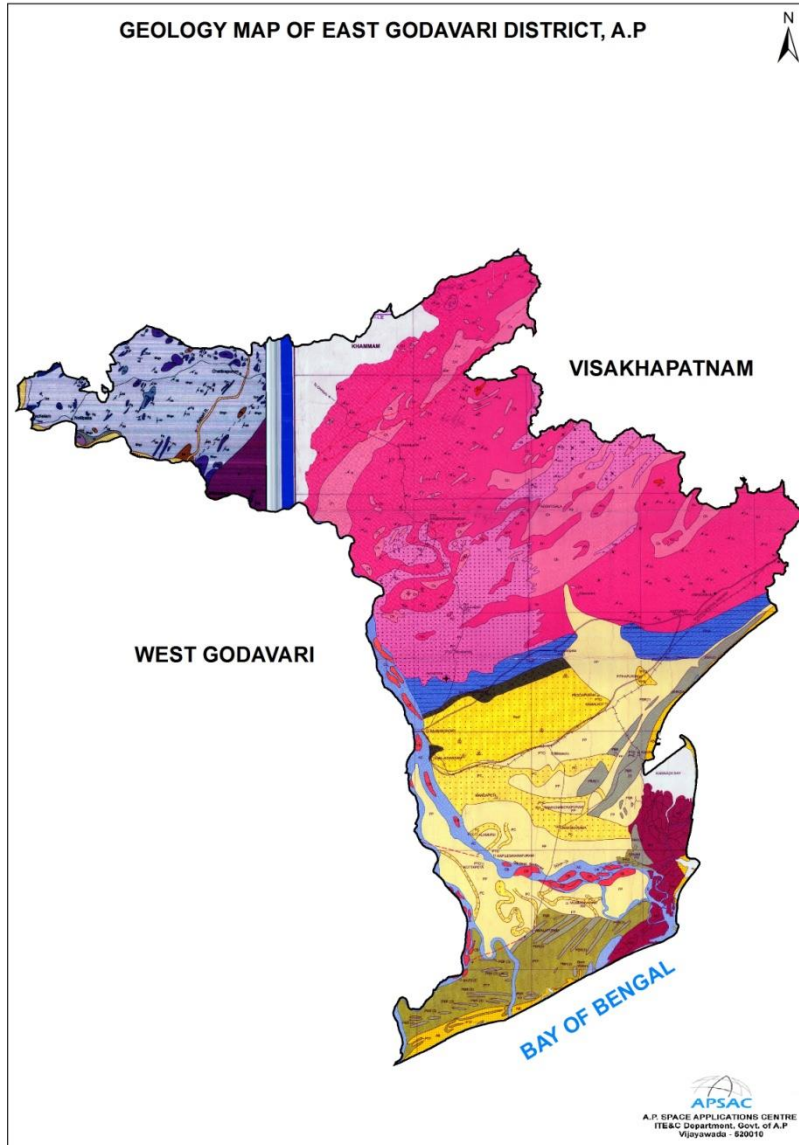


Fig. 23 Geology of East Godavari District, Andhra Pradesh

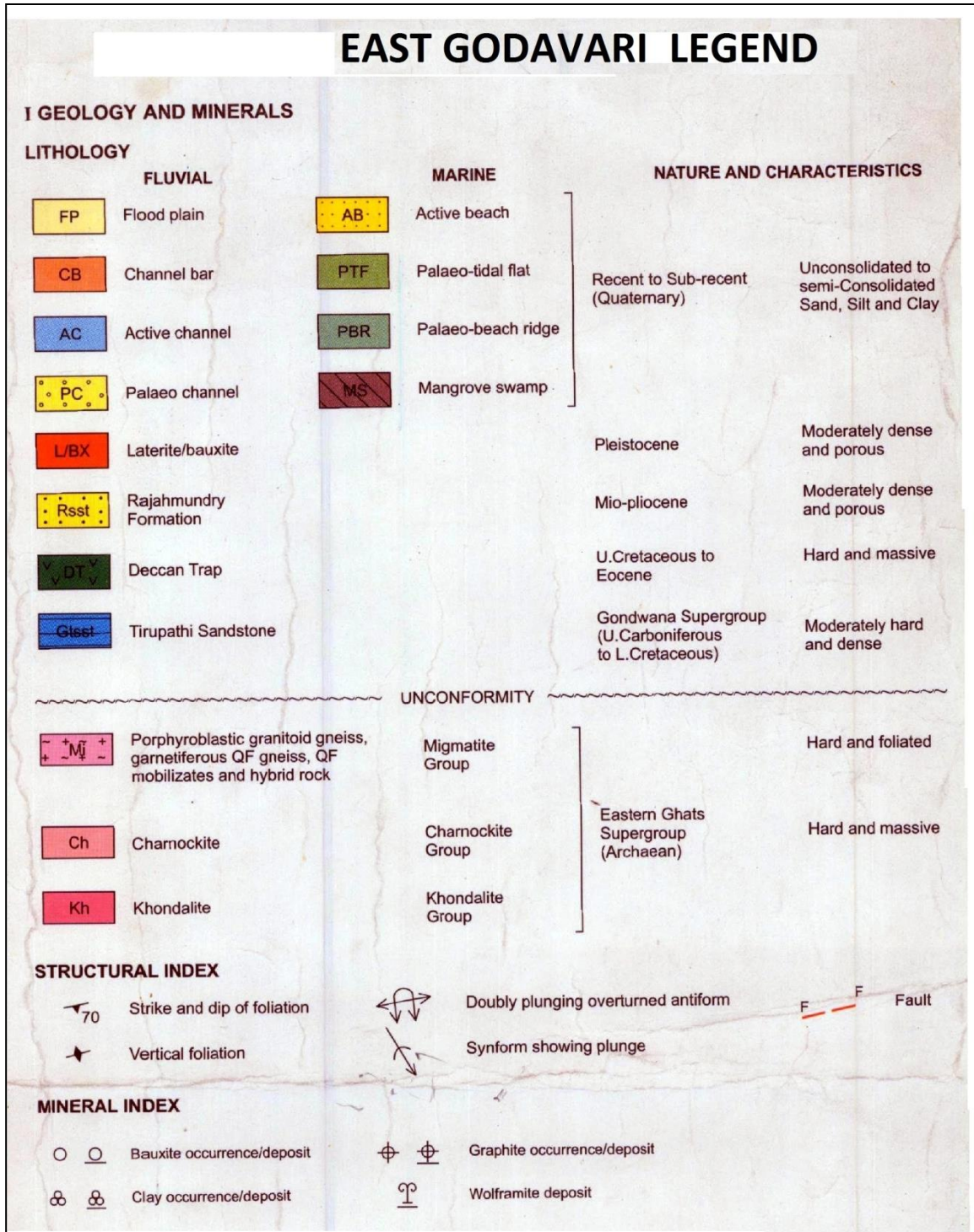


Fig.

24 Detailed Legend with Stratigraphic Sequence of East Godavari District

6.2 Mineral Resources of East Godavari District

East Godavari district has very good mineral resources. Graphite, fire clay, china clay, laterite, and bauxite that are used extensively in several industries are found in the district. There are several mineral-based industries set up in the district already. Mangalore tiles, bricks, graphite crucibles, chemical refractories are some of the industries set up with the help of the mineral resources available in the district. Apart from these, road metal, gravel and sand are also available in plenty in the district. East Godavari district has a coastline of 114 kms as stated already. There are 12500 acres of land on this coastline, particularly on the Kakinada and Yanam road, where salt is manufactured. This provides immense potential for the development of salt industries and a number of salt-based chemical industries in the district. The rich deposits of graphite, clay and fire clay and laterite in the district provide immense scope for setting up the pencil grade graphite units; grease, lubricants, electronic goods and ceramic based industries in the district. Oil and Natural Gas Commission already made substantial efforts in the direction of striking oil in Godavari basin of the district. It has already established that plenty of gas is available in the district particularly in the Razole region of Godavari basin. Recent finding of availability of huge deposits of oil and gas in the Godavari basin has catapulted East Godavari district on the national and international scenario because natural gas is going to be the foremost and abundantly available source for power generation and energizing the industrial sector. When these huge deposits of oil and natural gas are fully exploited, the ever-growing problems of power deficiency causing frequent power cuts and load shedding will be solved and the pace of industrial development will be further accelerated.

7 Details of Major and Minor Minerals-Their Production and Revenue in the District

7.1 Administrative Set-Up of DMG in East Godavari District:

The functions of the office of the Asst. Director of Mines and Geology at Rajamahendravaram is promoting Mineral regulatory work and development in East Godavari District within the purview of APMMC Rules, 1966 in case of Minor Mineral and M.C.Rules, 1960 and MM(D&R) Act, 1957 and other rules.

7.2 Overall view of Mining Activity in the District

In East Godavari district, Mandal wise minerals distribution given in table 7.1.

Table-7.1 Mineral and Place of distribution Mandal-wise

| Sl. No | Mineral | Place of distribution Mandal-wise |
|--------|----------------|---|
| 1 | Oil & Gas | S.Yanam, Mori, Pasarlapudi, Razole I &II, Tatipaka, Manepalli, Eenamuru, Chintalapalli. |
| 2 | Laterite | Maredumilli, Prathipadu |
| 3 | Fire Clay | Rajanagaram & Rajahmundry |
| 4 | China Clay | Jaggampeta, Gandepalli |
| 5 | Road Metal | Addateegala, Ganavaram, Gokavaram, Korukonda, Prathipadu, Rampachodavaram, Seetanagaram, Yeleswaram, Rowthulapudi, Tuni, Rajahmundry & Rajanagaram and Sankavaram |
| 6 | Building Stone | Kirlampudi, Prathipadu, Tuni |
| 7 | Gravel / Earth | Anaparthi, Biccavolu, Kadiyam, Karapa, Thondangi, Rangampeta, Mandapeta, Peddapuram, Samarlakota, Gandepalli, Biccavole etc |
| 8 | Granite | Rampachodavaram, Addateegala, Yeleswaram, Gangavaram, Rowthulapudi, Sankavaram |

Bauxite

Bauxite is basically an aluminous rock that contains hydrated aluminium oxide as main constituent and Iron oxide, Silica & Titania as minor constituents present in varying proportions. Hydrated aluminium oxides present in the bauxite ore are diaspore and boehmite, $\text{Al}_2\text{O}_3 \cdot \text{H}_2\text{O}$ (Al_2O_3 -85%; Al-45%); gibbsite or hydrargillite, $\text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$ (Al_2O_3 - 65.4%; Al-34.6%), and bauxite (containing colloidal alumina hydrogel), $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ (Al_2O_3 -73.9%; Al-39.1%). Bauxite is the principal ore of aluminium which is one of the most important non-ferrous metals used in the modern industry. It is also an essential ore for Refractory and Chemical industries. In East Godavari District, capping of Laterite which contains at places Bauxite, the raw material for manufacture of Aluminium are found in Dumakonda (V) near Y. Ramavaram. The estimated reserves are about 0.25 million tonnes.

Uses: Bauxite is used in a lot of industries like the chemical industry, refractory, abrasive, cement, steel, and petrol industry amongst others. In chemical, bauxite along with alumina is used in the manufacturing of aluminium chemicals.

Laterite

Laterite is a surface formation that is enriched in iron and aluminium. Found mainly in hot, wet tropical areas, it develops by intensive and long-lasting weathering of the underlying parent rock. The mineralogical & chemical composition of Laterite depends on their parent rock. Due to the presence of iron oxides, lateritic soils are red in colour ranging from light bright to brown shades. The term 'laterite' was originally used for highly ferruginous deposits. It is a highly weathered material, rich in secondary oxides of iron, aluminium or both. It is either hard or capable of hardening on exposure to moisture and drying. Laterite and bauxite show a tendency to occur together. Aluminous laterites and ferruginous bauxites are quite common. The most common impurity in both is silica. Laterite gradually passes into bauxite with a decrease in iron oxide and an increase in aluminium oxide. In East Godavari District, Laterite mineral is formed under process of weathering of Khondalite suit of rocks i.e Aluminium rich rocks of Archean Age. The mineral occurs in most of the hill ranges above 300 Mt to 900 Mt of MSL of Khondalite suit of Rocks and distributed mandals of Y.Ramavaram, Vanthada, Chintaluru, Gajjanapudi of Prathipadu(M) and Avelthi, Anumarthi of Sankavaram (M), Pedduru of Rowthulapudi (M). Low grade Laterite capping is found 2 to 4 meters over the Rajahmundry Sand Stone in G.Yerrampalem, Kadiyam, Kesavaram, Biccavolu villages around Rajahmundry. The estimated reserves are about 94.84 million tonnes of an extent of 431.11 Hects out of 33 leases.

Uses: Laterite is a soil and rock type rich in iron and aluminum, and is commonly considered to have formed in hot and wet tropical areas. Historically, laterite was cut into brick-like shapes and used in monument-building.



Fig. 25 Laterite specimen in East Godavari District



Fig. 26 Mining Operations in Vanthada village, East Godavari

Colour Granite

Colour Granite genetically occurs in Eastern Ghats Mobile Belt of Charnokite suit of Rocs and composed of mineral constituents mineral Garnet – Ferrous Gneisses granites of Archean age. These Colour Granites formed Granulite phases of Migmatization. In East Godavari District, the colour granite type is Leptynites. Leptynites composed of Garnet – Quartzo-Feldspathic gneiss and Megmatized

charnokites and the trade name is “Kashmir White”. In East Godavari District, the Colour Granite quarries are located in Rowthulapudi, Gangavaram and Rampachodavaram Mandals.

Uses: These rocks are useful for cutting and polishing, and as decorative monuments.

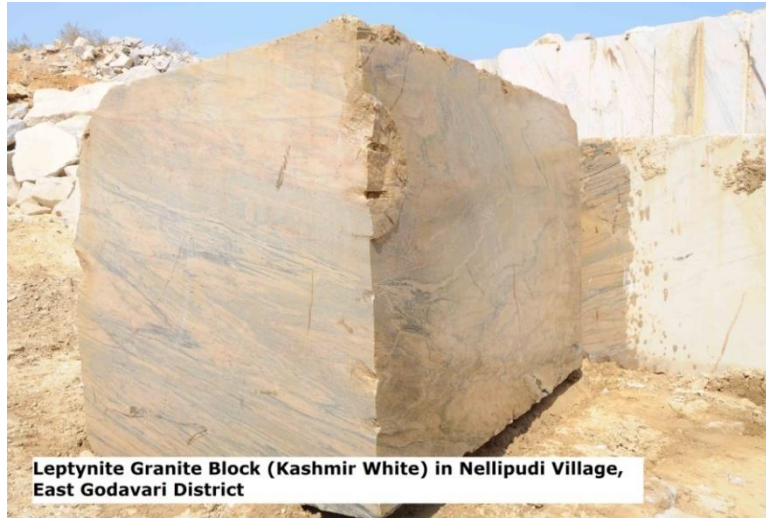


Fig. 27 Leptynite Granite Block in Nellipudi village, East Godavari



Fig. 28 Granite Systematic in Nellipudi village, East Godavari

Quartz

Geologically, the occurrence of Quartz in the district as intrusive belongs to Peninsular Gneissic Complex of Archaean Age. The vein deposit of the quartz in the district observes in association with two litho units viz. (1) Quartz vein with Feldspar

as Hanging wall and (2) quartz vein with muscovite schist. The quartz body is generally covered by the soil and Feldspar in the lower altitudes i.e. on either side of the Quartz vein. The Quartz is massive, glassy in nature. It is colour-less to translucent. General strike of the Quartz vein is NW-SE. Feldspar occurs as a hanging wall over the exposed Quartz Bodies. Quartz, quartzite and silica sand are used in various industries like glass, refractory, foundry, ceramic, cosmetic, electrical, abrasives, paints, etc. The primary use of silica is in the manufacture of virtually all types of glassware, ceramics and ceramic glazes. Other major uses are in metallurgy, (where silica is used as a refractory, foundry mould, fluxes and as a source of silicon for the production of silicon metal and ferro-silicon and other ferro-alloys), silicon carbide manufacture, chemical & construction sectors, and as a natural abrasive. Known for its piezoelectric properties, high quality quartz crystal is used in electronic devices, multiple telephone lines, depth-sounding devices, range finders, chronometers, etc. In East Godavari District, the Quartz quarries located in Chintoor, Vara Ramachandrapuram and Yetapaka Mandals (Fig 29).



Uses: The available Quartz mineral in the district is semi glass quartz and milky quartz variety and is used in Ceramic-tile manufacturing industry. Fine powder of the Quartz is widely used in the paint industry and glass industry.

Fig. 29 Quartz at Chintoor village, East Godavari District

Fire Clay

The name fireclay is given to a group of refractory clays which can withstand temperatures above pyrometric cone equivalent (PCE) - 19. Refractoriness and plasticity are the two main properties needed in fireclay for its suitability in the manufacture of refractory bricks. A good fireclay should have a high fusion point

(>1580o C) and good plasticity. Fireclay containing high alumina and low iron oxide, lime, magnesia & alkalies is preferred by refractory manufacturers. The aluminous (kaolinitic) variety of fireclay is more refractory because of its hardness and density and absence of iron, giving it a white burning colour. The absence of alkalies gives it a very high fusion temperature. Fireclays are used in the manufacture of cement, bricks, blocks, retorts, crucibles, mortars, masses, pottery, floor tiles, etc. Low-grade material is used for manufacturing heavy sanitary-ware, such as, pipes and bath tubs. Firebricks are used where heat generation is involved. Firebricks are used extensively in furnaces, kilns and ovens. Firebricks are required chiefly by metallurgical industries. In East Godavari District, the Fire Clay quarries are located in Rajamahendravaram Rural, Rajanagaram and Kadiyam Mandals.



Uses: Fire clay is a range of refractory clays used in the manufacture of ceramics, especially fire brick. The United States Environmental Protection Agency defines fire clay very generally as a "mineral aggregate composed of hydrous silicates of aluminium ($Al_2O_3 \cdot 2SiO_2 \cdot 2H_2O$) with or without free silica."

Fig. 30 Fire Clay Specimen in East Godavari District

China Clay

The name kaolin (China Clay) is derived from the village of Gaoling in Jiangxi province, China, where the white clay was mined. Kaolin also known as china clay, is a white commercial clay consisting predominantly of the mineral kaolinite, a hydrated aluminosilicate formed by chemical weathering of aluminium silicate minerals like feldspars through a complex sequence of events. It is relatively a pure clay predominantly consisting of kaolinite ($Al_2Si_2O_5(OH)_4$), associated with other

clay minerals like dickite, halloysite, nacrite and anauxite, Kaolinite and halloysite which are the most commonly found members of the kaolin group whilst nacrite and dickite are considered rare but with the progress made in infrared spectroscopy techniques, nacrite and dickite are now found in association with kaolinite in many deposits. The levels of these two minerals are used as a guide by the Oil Industry as an indication of depth of burial of sediments, the levels of the two minerals increase with the higher temperatures and pressures at depth. Crude china clay is normally processed. Almost, all the china clay user industries except cement, insecticide and refractory units consume processed china clay. The natural china clay is processed in the country mostly by conventional method of levigation/washing. In addition, hi-tech processes, such as, Mozeley hydrocyclone separator, high-intensity magnetic separator, bleaching (chemical de-colorization), spray drying and calcination are in practice. There is a need to use more sophisticated processing techniques like ultra froth-flotation, cryo-filter, etc. The recovery percentage of processed china clay from raw china clay ranges from as low as 14% to as high as 56%, depending upon the quality of china clay. In East Godavari District, the China Clay quarries are located in Jaggampeta, Gandepalli and Prathipadu Mandals.



Uses: It is widely used in the making of paper, rubber, paint, and many other products. Kaolin is named after the hill in China (Kao-ling) from which it was mined for centuries

Fig. 31 China Clay Specimen in East Godavari District



Fig. 32 China Clay Mine in Jaggampeta village of East Godavari District

Oil and Natural Gas

Krishna Godavari Basin is a Peri-Crotonic passive basin on the East Coast of India. The on-land part consists of 28000 Sq.Km. and is mostly Alluvium covered. The Krishna and Godavari are the two major rivers systems which drain the area and discharge in the Bay of Bengal. The off shore area covers 24000 Sq. Km to the isobath of 200M. However, the basin extends into deeper water and covers a much larger area. The basin's characteristic feature is en-echelon horst and graben system which is filled with a thick pile of sediments of Permian to Recent age and emerging as one of India's most promising petroliferous areas with commercial accumulation of Hydro Carbons occurring in sediments from the Permian to as young as the Pliocene. ONGC operates 31 Leases to explore Oil and Gas in K.G Basin.

- Expected Reservoirs: Permian to Triassic sandstones, Cretaceous to Paleocene sandstones, Eocene limestones & Sandstones Miocene to Pliocene sandstones
- Expected Source Rocks: Shales in Permian, Cretaceous & Paleocene – Eocene sequences. Expected Cap Rocks: Intra-formational shales.

The average annual production of Crude Oil is 2,74,030.19 MT and Natural Gas is 1,14,28,04,369 SCM. M/s. Oil and Natural Gas Corporation Limited has

obtained Petroleum Mining Lease (PML) permissions for Oil and Natural Gas in East Godavari District as detailed below in Table 7.2:

Table 7.2: (PML) permissions for Oil and Natural Gas in East Godavari District

| Sl. No. | Name of PML | Area (Sq.Km) | Area falling under PML | Mandal |
|---------|--|--------------|------------------------|----------------|
| 1 | Mori-1 | 6.50 | Mori | Sakhinetipalli |
| 2 | Kesavadasapalem | 25.50 | Kesavadasapalem | Sakhinetipalli |
| 3 | Tatipaka-Pasarlapudi | 62.00 | Tatipaka | Mamidikuduru |
| 4 | Manepalli | 10.00 | Manepalli | P.Gannavaram |
| 5 | Razole – 1 & 2 | 18.85 | Razole | Razole |
| 6 | Pasarlapudi – 8 & 9 | 12.10 | Pasarlapudi | Mamidikuduru |
| 7 | Mandapeta – 19 & West | 26.00 | Mandapeta | Mandapeta |
| 8 | Srikatpalli–Pasarlapudi (24)-Gopavaram | 163.00 | Pasarlapudi | Mamidikuduru |
| 9 | Kesanapalli(Regrant) | 3.70 | Kesanapalli | Sakhinetipalli |

Uses: Nearly all pesticides and many fertilizers are made from oil or oil by-products. Gas provides electricity and is also used for cooking. It can also be used in the form of compressed natural gas (CNG) or liquefied natural gas (LNG) as a transportation fuel for vehicles.

7.3. Availability of Sand, Gravel and Aggregate Resources

River Godavari enters East Godavari District at Yetapaka Mandal and flows as Akhanda Godavari until Dowlaiswaram Sir Aurthor Cotton Barrage. Subsequently, the River Godavari splits into three branches and flows as Gowthami, Vasishta and Vynateya. The Sand Reaches in this District exist along Akhanda Godavari Left Bank, Gowthami Left & Right Banks, Vasishta Left Bank and Vynateya Left & Right Banks. River Godavari flows through East Godavari approximately a distance of 250 KM and merges into the Bay of Bengal at Antarvedi. The Yeleru River flows through Yeleswaram, Prathipadu, Kirlampudi, Peddapuram Mandals in East Godavari District. There is only one identified reach in Yeleswaram Mandal i.e., Marriveedu. The Thandava River flows through Tuni & Kotananduru mandals in East Godavari District. The sand reaches along Thandava River were not recommended as per AP WALTA Rules by the line departments during the course of Joint Inspection. The Sand Reach details

along the Godavari River Banks are given in Table 7.1. The Gravel and Aggregate resources in East Godavari District: Khondalite group of rocks are used for Building Stone and Charnockite group of rocks are used for Road Metal for civil constructions. The Deccan traps overlie the Tirupathi Sand Stones and are exposed only in a smaller area of Rajahmundry, Rajanagaram and Gandepalli mandals. The Traps extended over a distance of 32 Km from Katheru in the west to Katrevulapalli, Jaggampeta Mandal in the East. The traps are basaltic in composition and it is useful for Road Metal for construction of civil works. The Gravel and Aggregate resource place-wise information is given in Table 7.2.

Road Metal/Building Stones

Charnockites/Khondalites

Road Metal occurred in Charnockite Group of Eastern Ghats Super Group of Archaean age, where the Eastern Ghat Mobile Belt is tapering to less than 20 km width and trending in NNE-SSW in the area and Charnockite zone represented mainly of Charnockite and Basic Granulite. The Charnockite in the area forms dome shaped steeply sloping hills. The rock is medium to coarse grained texture comprises Greasy quartz, hypersthene, orthoclase and plagioclase with or without Garnet. In East Godavari District, Charnockite Road Metal quarries are located in Seethanagaram, Gokavaram, Korukonda, Rampachodavaram, Yeleswaram, Prathipadu, Rowthulapadu, Tuni, Sankhavaram & Kotananduru Mandals. The available Charnockite rock in the district is in massive nature which can sustain rock strength for usage of civil works. However consisting of predominantly irregular joints, it is not useful for cutting and polishing. As such these are being utilized for breaking and crushing purpose only and the aggregate products so derived have been used in Civil Construction works, Railway Ballast and for making Railway Sleepers, etc., In East Godavari District, Building Stone occurred in Khondalite Group of Eastern Ghats. The Villagers of Prathipadu, Kirlampudi & Sankhavaram Mandals generally used Khondalite Rocks as Building Stone for foundation and construction of Retaining Walls from the ancient period. Further, the Irrigation Department is using the Building Stone in Revetment along the Flood Bank and Construction of groins to prevent the erosion of the Flood Banks/Lanka lands.

Uses:The available Charnockite rock in the district is in massive nature which can sustain rock strength for usage of civil works. However, consisting of predominantly irregular joints, it is not useful for cutting and polishing. As such these are being utilized for breaking and crushing purpose only and the aggregate products derived so have been used in Civil Construction works, Railway Ballast and making Railway Sleepers, etc.



Fig. 33 Charnockite Specimen East Godavari District



Fig. 34 Charnockite Hill Deposite in East Godavari District

Deccan Traps (Basaltic Lava)

In East Godavari District, Road Metal occurred in Deccan Trap formation of upper cretaceous period. The Deccan traps overlie the Tirupathi. Sand Stones and are exposed only in a smaller area of Rajahmundry, Rajanagaram and Gandepalli mandals. Road Metal quarries are located in Kateru, Konthamuru & Kolamuru in Rajamahendravaram Rural, Palacherla, Rajanagaram and Gandepalli Mandals. The Traps extended over a distance of 32 Km from Katheru in the west to Katrevulapalli, Jaggampeta Mandal in the East. The traps are basaltic in composition and it is useful for Road Metal for construction of civil works.



Fig. 35 Basalt Specimen in Rajamahendravaram, East Godavari District



Fig. 36 Basalt Rock in Deccan Trap Formation in Rajamahendravaram, East Godavari

Gravel

Gravel is formed due to in situ weathering of Khondalite rocks of Eastern Ghat Super Group of Archaean age due to the effect of wind, water & temperature. Large gravel deposits are a common geological feature, being formed as a result of the weathering and erosion of rocks. The action of rivers and waves tends to pile up gravel in large accumulations. This can sometimes result in gravel becoming compacted and lithified into the sedimentary rock called conglomerate. In East Godavari District, Gravel formations are generally occurred in upland i.e. Table plateau which consists of formations of Miocene to mio-pleiestocene period and weathering of Khondalite suit of rocks Mineral constituent namely Gravel. Gravel formations are distributed in Peddapuram, Samalkot, Gandepalli, Gollaprolu, Biccavolu, Anaparthi, Mandapeta, Rangampeta and Rajanagaram Mandals.

Uses: Gravel is used for formation of Kacha roads and filling low level areas.



Fig. 37 Gravel quarry in East Godavari

Earth

In East Godavari District, Southern part of the district mostly covering Alluvial Soil formed by the Godavari Delta consists of Black cotton Soils, Sandy Soils, Loamy

Soils. The Mineral Earth is available in the Revenue Divisions of Rajamahendravaram, Amalapuram, Ramachandrapuram and Kakinada.

Beach Sands

In East Godavari District, Beach Sand Minerals like Zircon, Illimanite, Monazite, Rutile etc., are deposited along coastline of the Bay of Bengal stretching from Thondangi Mandal to Sakhinetipalli Mandal approximately covering a distance of 150 KM. Beach Sand Minerals usually categorized as Rare Earth Elements (REE) are characterized by high density, high melting point, high conductivity and high thermal conductance. A number of rare earth minerals contain thorium and uranium in variable amounts but thorium and uranium do not constitute essential components in the composition of the minerals. Rare earth materials are utilized in a wide range of critical products enabling many emerging green energy technologies, high-tech applications and defense systems such as hybrid cars, plug-in hybrid electric-vehicles (PHEVs), the latest generation of efficient wind power turbines, computer disc drives, missile guidance systems, etc. Monazite contains about 25.28% P₂O₅ which can be recovered as a by-product for manufacture of fertilizers and production of elemental phosphorus or its salts. Besides, rare earths, thorium is recovered from monazite. It is a source of atomic energy. An important use of thorium is for addition to tungsten in minute quantity (about 0.75%) to increase the ductility of tungsten wire and thus to facilitate its drawing into filaments used in electric lamps. Metallic thorium is also used in photoelectric cells and X-ray tubes and in certain alloys. Thorium is used as catalytic agent for various processes. Amongst thorium salts, thorium nitrate is used largely in the manufacture of incandescent gas mantles. Mesothorium, the chief radioactive element recovered as a byproduct in the chemical treatment of monazite, is marketed usually in the form of its bromide and used in self-luminous paints or enamels. Mesothorium is also used in the treatment of certain types of cancer and skin diseases. At present, there is no Beach Sand Mining Leases in East Godavari District.



Fig. 38 Beach Sand in Kona village in East Godavari

Sand

Godavari River (V Order Stream)

River Godavari enters into East Godavari District at Yetapaka Mandal and flows as Akhanda Godavari up to Dowlaiswaram Sir Aurthor Cotton Barrage. Subsequently, the Godavari splits into three branches and flows as Gowthami, Vasishta and Vynateya. The Sand Reaches in this District exist along Akhanda Godavari Left Bank, Gowthami Left & Right Banks, Vasishta Left Bank and Vynateya Left & Right Banks. River Godavari flows through East Godavari approximately a distance of 250 KM and merges into the Bay of Bengal at Antarvedi. The Sand Reach details along the Godavari River Banks are as follows:

Uses: Sand is used to provide bulk, strength, and other properties to construction materials like asphalt and concrete. It is also used as a decorative material in landscaping. Specific types of sand are used in the manufacture of glass and as a moulding material for metal casting.

Table-7.3 The Sand Reach details along the Godavari river

| Sl. No. | Name of the River | Name of the Sand Reach | Chainage | Type of Reach |
|---------|----------------------------------|-----------------------------|---------------------|---------------|
| 1 | Akhanda Godavari Left Bank | Vangalapudi | 32.000 to 35.00 KM | Open Reach |
| 2 | | Muggalla | 26.000 to 32.000 KM | Open Reach |
| 3 | | Munikudali | 25.000 to 26.000 KM | Open Reach |
| 4 | | Katavaram | 22.000 to 25.000 KM | De-siltation |
| 5 | | Rajahmundry | 3.000 to 8.800 KM | De-siltation |
| 6 | Gowthami Left Bank | Vemagiri – Kadiyapulanka | 3.000 to 8.000 KM | Open Reach |
| 7 | | Jonnada | 9.000 to 19.400 KM | Open Reach |
| 8 | | Tatapudi | 23.200 to 25.900 KM | Open Reach |
| 9 | | Kapileswarapuram | 29.000 to 29.900 KM | Open Reach |
| 10 | | Korumilli | 30.400 to 32.400 KM | Open Reach |
| 11 | | Kotipalli | 40.000 to 48.000 KM | Open Reach |
| 12 | | Pillanka | 55.000 to 60.400 KM | By Boats |
| 13 | Govallanka | 59.000 to 60.400 KM | By Boats | |
| 14 | Gowthami Right Bank | Bobbarlanka – Peravaram | 3.00 to 5.00 KM | Open Reach |
| 15 | | Vaddiparru | 7.400 to 10.800 KM | Open Reach |
| 16 | | Atreyapuram | 10.000 to 15.000 KM | Open Reach |
| 17 | | Ubalanka | 19.000 to 22.000 KM | Open Reach |

| | | | | |
|----|-----------------------|-----------------------------------|---------------------|--------------------------|
| 18 | | Ravulapalem | 22.000 to 24.900 KM | Open Reach |
| 19 | | Mandapalli | 27.000 to 29.000 KM | Open Reach |
| 20 | | Kothapeta – Kedartalanka | 27.000 to 31.000 KM | Open Reach |
| 21 | | Vadapalem – Narayanalanka | 31.400 to 34.200 KM | Open Reach |
| 22 | | Invallilanka – Veeravallipalem | 45.000 to 51.000 KM | Open Reach |
| 23 | | Kondakuduru | 51.000 to 55.000 KM | Underwater excavation |
| 24 | | Kommanapalli – Gedallanka | 58.000 to 58.500 KM | Open Reach |
| 25 | | Muramalla | 59.000 to 72.000 KM | By Boats |
| 26 | | Pallamkurru | 75.000 to 79.100 KM | By Boats |
| 27 | Vasishta Left Bank | Rajavaram – Velicheru | 3.500 to 7.500 KM | Open Reach |
| 28 | | Pulidindi | 8.800 to 10.500 KM | Open Reach |
| 29 | | Tadipudi | 12.000 to 14.000 KM | Open Reach |
| 30 | | Ankampalem | 19.000 to 30.000 KM | Open Reach |
| 31 | | Gopalapuram | 30.000 to 44.200 KM | Open Reach |
| 32 | | Y.V.Palem – Bendapudi | 44.200 to 48.400 KM | Open Reach |
| 33 | | Soampalli | 48.400 to 63.000 KM | Underwater |

| | | | | |
|----|------------------------|------------------------------------|---------------------|--------------------------|
| | | | | excavation |
| 34 | | Dindi | 63.000 to 80.000 KM | By Boats |
| 35 | | Tekisettipalem - Sakhinetipalli | 63.000 to 80.000 KM | Underwater excavation |
| 36 | Vynateya Right Bank | D.S.Palem | 0.800 to 0.900 KM | Open Reach |
| 37 | | Manepalli | 5.000 to 10.000 KM | Open Reach |
| 38 | | Pedapatnam – Appanapalli | 5.000 to 15.000 KM | Underwater excavation |
| 39 | | Pasarlapudi | 15.000 to 18.000 KM | By Boats |
| 40 | Vynateya Left Bank | Bodaskurru | 22.000 to 35.000 KM | Underwater excavation |
| 41 | PIP Flood Bank | Yedurlanka | 0.000 to 12.000 KM | Underwater excavation |
| 42 | | Guttinadeevi | 12.000 to 15.000 KM | |
| 43 | | Pasuvulanka | 35.000 to 40.575 KM | |
| 44 | | Kesanakurru | 22.0 35.000 KM | |

From the above sand reaches on an average sand quantities of 25.00 to 30.00 Lakhs per annum have been excavating to meet the needs of public in East Godavari District and adjacent Districts.



Fig. 39 Sand deposits in River Godavari

Yeleru River (III Order Stream)

The Yeleru River originated from Eastern Ghats of Y.Ramavaram Mandals and flows through Addateegala (Agency area), Yeleswaram, Prathipadu, Kirlampudi, Peddapuram Mandals in East Godavari District. There is only one identified reach in Yeleswaram Mandal i.e., Marriveedu. There is a possibility of small Sand shoals at Yeleswaram and Kirlampudi Mandals for utilization of sand for local consumption only.

Thandava River (III Order Stream)

The Thandava River originated at Eastern Ghat hills from Chodavaram Mandal, Visakha District and flows through Kotananduru & Tuni Mandals of East Godavari District. There is a possibility of small Sand shoals at Kotananduru and Tuni Mandals for utilization of sand for local consumption only.

Table-7.4

Annexure - I

Statement showing the list of leases for Major and Minor Minerals and details of lease wise production and Revenue collections during the last three years pertaining to O/o Asst. Director of Mines & Geology, Rajamahendravaram

| Sl. No | LesseeID | Lessee Name | Mineral Name | Location | | | Extent (in Hectares) | Lease Period | | Production(Dispatches) | | | Mineral Revenue Collections | | | Remarks |
|--------|-----------|--|--------------|-----------|----------------|-------------|----------------------|--------------|-----------|------------------------|---------|---------|-----------------------------|-----------|---------|--------------------|
| | | | | Survey No | Village | Mandal | | From | To | 2015-16 | 2016-17 | 2017-18 | 2015-16 | 2016-17 | 2017-18 | |
| 1 | 411070012 | Smt K. Anasuya | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | 2 | 27-Jan-07 | 26-Jan-17 | 1050 | 1350 | 0 | 100075 | 21239.73 | 0 | Renewal applied |
| 2 | 411070391 | P.Kannayamma | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | 2 | 27-Jan-07 | 26-Jan-17 | 880 | 1350 | 0 | 100000 | 21107.73 | 0 | Renewal applied |
| 3 | 411080004 | Smt Palla Sanyasamma, | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | 1 | 10-Jun-08 | 9-Jun-18 | 450 | 670 | 2050 | 50000 | 59550.87 | 131250 | |
| 4 | 411080006 | M/s Bhavani Girijana Quarry Workers LC C Society | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | | 26-Jun-08 | 25-Jun-18 | 0 | 560 | 1266 | 0 | 42500 | 52450 | |
| 5 | 411080007 | Sri Manepalli Chandra Rao, | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | 9.5 | 31-Jul-08 | 30-Jul-18 | 5150 | 6356 | 7855 | 497564 | 68279.45 | 589125 | |
| 6 | 411080008 | Sri Manepalli Chandra Rao | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | 1.4 | 31-Jul-08 | 30-Jul-18 | 1500 | 1078 | 8451 | 100000 | 553350 | 158825 | |
| 7 | 411080215 | M/s Gontivanipalem Girijana QW Indl.co Society | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | 1.507 | 4-Jul-08 | 3-Jul-18 | 750 | 1000 | 1005 | 75531 | 89537.65 | 75350 | |
| 8 | 411080216 | M/s Vijaya Girijana Q. L.C.c. Society | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | 3.87 | 4-Jun-08 | 3-Jun-18 | 2320 | 2760 | 4950 | 213117 | 232552.95 | 171959 | |
| 9 | 411120005 | Sri Pallala Sanyasamma | Road Metal | 207/1 | GONTUVANIPALEM | Addateegala | 0.125 | 18-Dec-12 | 3-Jun-18 | 150 | 150 | 1300 | 9333 | 11250 | 97250 | |
| 10 | 411060214 | Sri P.Krishna | Road Metal | 24 | Puligogulapadu | Addateegala | 1.85 | 1-Jun-06 | 31-May-16 | 906 | 0 | 0 | 16849 | 0 | 0 | Expired/Determined |
| 11 | 411080010 | Sri J. Satya Vara Prasad | Road Metal | 24 | PULIGOGULAPADU | Addateegala | 2 | 25-Jun-08 | 24-Jun-18 | 936 | 1533 | 1333 | 114015 | 118653.41 | 100000 | |

| | | | | | | | | | | | | | | | | |
|----|---------------|---|--------------------------|-----------------------------------|---------------------|-----------------|-----------|-------------------|---------------|--------|------------|------|-------------|---------|------------|----------------------------|
| 12 | 4110802 17 | Sri N.Naga Raju | Road Metal | 24 | PULIGOGULA PADU | Addateegal a | 6 | 4-Jul- 08 | 3-Jul-18 | 2955 | 4050 | 3240 | 355835 | 303750 | 3000 00 | |
| 13 | 4111402 19 | Sri karri Sambasiva Reddy | Gravel | 8/1DP | DUPPALAPUD I | Anaparthi | 3.08 | 29-Jan- 14 | 28-Jan- 17 | 225040 | 1675 0 | 0 | 569297 7 | 400228 | 0 | Expire d/Dete rmined |
| 14 | 4111503 75 | A.SATISH KUMAR | Gravel | 8/1CP | Duppalapudi | Anaparthi | 0.87 | 26-Jun- 15 | 4-Apr-20 | 54800 | 0 | 0 | 154704 5 | 0 | 0 | |
| 15 | 4111604 28 | A.RAMESH | Gravel | 8/1C | DUPPALAPUD I | Anaparthi | 0.79 7 | 13-Apr- 16 | 12-Apr- 19 | 0 | 2200 0 | 5500 | 0 | 628120 | 1965 00 | |
| 16 | 4111604 37 | S.SIVANNARAYANA REDDY | Gravel | 23 | DUPPALAPUD I | Anaparthi | 1.84 1 | 21-Jun- 16 | 2-Sep-19 | 0 | 8850 0 | 0 | 0 | 2654960 | 0 | |
| 17 | 4111403 49 | MALLIDI VEERA RAGHA VA REDDY | Gravel | 28 | BALABHADRA PURAM | Biccavolu | 4.07 7 | 16-Apr- 14 | 15-Apr- 19 | 18850 | 8000 0 | 5430 | 664315 | 2172800 | 0 | |
| 18 | 4111403 55 | S.VEERA VENKATA SATYANARAYANA REDDY | Gravel | 49/P | BALABHADRA PURAM | Biccavolu | 2.4 | 12- May- 14 | 11-May- 17 | 49806 | 2500 | 0 | 126093 6 | 0 | 0 | Expire d/Dete rmined |
| 19 | 4111503 60 | K.V.V.S.SUBRAHMANYAM | Gravel | 73 | BALABHADRA PURAM | Biccavolu | 1.01 2 | 20-Jan- 15 | 3-Jan-17 | 66798 | 1000 | 0 | 149313 5 | 0 | 0 | Expire d/Dete rmined |
| 20 | 4111504 09 | S.SIVANNARAYANA REDDY | Gravel | 152/4B ,4C,4D, 4E,4F,4 G | KAPAVARAM | Biccavolu | 1.61 8 | 9-Oct- 15 | 6-Jul-20 | 82875 | 1119 30 | 0 | 252434 1 | 3293100 | 0 | |
| 21 | 4111604 38 | S.SIVANNARAYANA REDDY | Gravel | 152/2 | KAPAVARAM | Biccavolu | 0.74 5 | 21-Jun- 16 | 12-Sep- 20 | 0 | 375 | 0 | 0 | 30000 | 0 | |
| 22 | 4111604 41 | G.SATYA PRAKASH | Gravel | 108/1 | THUMMALAP ALLE | Biccavolu | 0.98 7 | 21-Jun- 16 | 30-Jun- 21 | 0 | 1116 | 2450 | 0 | 39600 | 2718 0 | |
| 23 | 4110904 40 | P.SATYANARAYANA | Quartz | 26 | KESARAM | Chintur | 0.87 4 | 25- Mar-09 | 24-Mar- 29 | 0 | 300 | 2137 | 0 | 37500 | 1805 00 | |
| 24 | 4111002 22 | Sri P.S.V.S Chowdary | Gravel | 255/2P ,3,4P,5 | Gandepalle | Gandepalle | 2.38 | #N/A | #N/A | 10005 | 0 | 0 | 205000 | 0 | 0 | Expire d/Dete rmined |
| 25 | 4120502 64 | Sri DVV Ramana Reddy | China Clay (Crude) | 23/2P, 24/2P | GANDEPALLE | Gandepalle | 1.03 3 | 21- Nov-05 | 20-Nov- 25 | 3900 | 2650 | 5400 | 25322 | 83808 | 2600 00 | |
| 26 | 4121002 99 | M/s Hindustan Sanitaryware and Industries Ltd | China Clay (Crude) | 3/P,4/P | Gandepalle | Gandepalle | 1.78 | 27- Dec-10 | 26-Dec- 30 | 1000 | 0 | 0 | 0 | 0 | 0 | |
| 27 | 4111403 58 | SIDHVI INFRASTRUCTURE PROJECTS LIMITED | Gravel | 212/1 23 AND 213/3 | P.nayakampal le | Gandepalle | 2.40 8 | 8-Sep- 14 | 13-Sep- 16 | 1305 | 0 | 0 | 0 | 0 | 0 | Expire d/Dete rmined |

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|----|-----------|---------------------------------------|--------------------------|-----------------|--------------------|------------|-------|-----------|-----------|----------|----------|----------|---------|-----------|---------|-----------------|-----------------|
| 28 | 411140359 | SIDHVI INRASTRUCTURE PROJECTS LIMITED | Gravel | 212/6 | P.nayakampalle | Gandepalle | 0.728 | 8-Sep-14 | 13-Sep-16 | | | | | | | | Renewal applied |
| 29 | 411150388 | JETTY SATYANARAYANA & OTHERS | Ordinary Earth | 79/P,2 P,3P 4P | YELLAMILLI | Gandepalle | 5.75 | 3-Feb-15 | 2-Feb-25 | 300 | 0 | 0 | 29729 | 7091.34 | 0 | | |
| 30 | 411150388 | JETTY SATYANARAYANA & OTHERS | Road Metal | 79/P,2 P,3P 4P | YELLAMILLI | Gandepalle | 5.75 | 3-Feb-15 | 2-Feb-25 | 800 | 0 | 3500 | 287934 | 733876.71 | 1610000 | | |
| 31 | 411150388 | JETTY SATYANARAYANA & OTHERS | Ballast | 79/P,2 P,3P 4P | YELLAMILLI | Gandepalle | 5.75 | 3-Feb-15 | 2-Feb-25 | 2300 | 10650 | 29500 | 0 | 0 | 0 | | |
| 32 | 411150388 | JETTY SATYANARAYANA & OTHERS | Boulders | 79/P,2 P,3P 4P | YELLAMILLI | Gandepalle | 5.75 | 3-Feb-15 | 2-Feb-25 | 300 | 1000 | 0 | 0 | 0 | 0 | | |
| 33 | 412020296 | Sri K.Venkata Rao | China Clay (Crude) | 21-Jan | ZAMINDAR RAGAMPETA | Gandepalle | 1.01 | 7-Aug-02 | 6-Aug-22 | 0 | 1000 | 0 | 0 | 0 | 0 | | |
| 34 | 412040274 | Smt K.V.V.S.A.Subba Laxmi | Fire Clay | 63/3B | ZAMINDAR RAGAMPETA | Gandepalle | 0.729 | 22-Nov-04 | 21-Nov-24 | 4650 | 4530 | 8650 | 138850 | 226500 | 432500 | | |
| 35 | 412040352 | K.SRINIVASA RAO | China Clay (Crude) | 21/2,2 2/1 22/2 | ZAMINDAR RAGAMPETA | Gandepalle | 2.412 | 8-Dec-04 | 7-Dec-24 | 2950 | 3400 | 2700 | 93099 | 161000 | 130000 | | |
| 36 | 411050332 | M/s Mars Granites | Color Granite-Leptinites | 486/1, 488/1 | NELLIPUDI | Gangavaram | 1.52 | 5-Oct-05 | 4-Oct-25 | 4650 | 4000 | 6200 | 120441 | 201180 | 306356 | | |
| 37 | 411160442 | RATHOD PREM | Color Granite-Leptinites | 487 | NELLIPUDI | Gangavaram | 1 | 10-Aug-16 | 9-Aug-36 | 1450.073 | 2345.504 | 1203.551 | 3663330 | 7033044 | 3593879 | | |
| 38 | 411060226 | Sri K.Srinivas | Road Metal | 1 | Pothandorapalem | Gangavaram | 1.5 | 12-May-06 | 10-May-18 | 0 | 278.905 | 725.857 | 0 | 842000 | 2155294 | | |
| 39 | 411090227 | A.P. Tribal Mines Co. Ltd | Road Metal | 1 | POTHANDOR APALEM | Gangavaram | 1.5 | 12-Mar-09 | 11-Mar-19 | 600 | 0 | 1002 | 75081 | 89054.8 | 75150 | Renewal applied | |
| 40 | 411070229 | Sri P.Ananda Reddy | Road Metal | 104 | KALIJOLLA | Gokavaram | 2.02 | 7-Nov-07 | 6-Nov-27 | 0 | 1000 | 1650 | 0 | 75000 | 123750 | | |
| 41 | 411070230 | Sri P.Veera Reddy | Road Metal | 104 | KALIJOLLA | Gokavaram | 2.02 | 7-Nov-07 | 6-Nov-27 | 936 | 600 | 450 | 101086 | 119927.13 | 101000 | | |
| 42 | 411070231 | Sri K.Seetha Rama Laxmana Reddy | Road Metal | 104 | KALIJOLLA | Gokavaram | 2.19 | 7-Nov-07 | 6-Nov-27 | 938 | 600 | 450 | 101705 | 119925.32 | 101000 | | |
| 43 | 411070232 | Sri K.Nagi Reddy | Road Metal | 104 | KALIJOLLA | Gokavaram | 1.27 | 7-Nov-07 | 6-Nov-27 | 964 | 600 | 450 | 109512 | 129360 | 109500 | | |
| | | | | | | | | | | 697 | 600 | 300 | 66474 | 72922.91 | 63077 | | |

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| 44 | 411080233 | M/s Swasthik Metals | Road Metal | 359/7 | KALIJOLLA | Gokavaram | 1.456 | 20-May-08 | 19-May-18 | 0 | 540 | 0 | 0 | 0 | 145600 | |
| 45 | 411100235 | Smt K. Atchuta Padma | Road Metal | 104/P | KALIJOLLA | Gokavaram | 1.32 | 3-Feb-10 | 2-Feb-20 | 630 | 300 | 0 | 66000 | 75017.67 | 0 | |
| 46 | 411070018 | Sri M.Srinivas | Road Metal | 546 | MALLAVARAM | Gokavaram | 2.63 | 27-Nov-07 | 26-Nov-27 | 1068 | 900 | 0 | 131500 | 156065.89 | 131449 | |
| 47 | 411070228 | Sri S.Subash Chandra Bose | Road Metal | 359 | MALLAVARAM | Gokavaram | 3 | 27-Oct-07 | 28-Oct-27 | 0 | 3000 | 2000 | 150000 | 178109.59 | 140976 | |
| 48 | 411070444 | T.NAGESWARA RAO | Road Metal | 359 | MALLAVARAM | Gokavaram | 2 | 18-Oct-07 | 17-Oct-27 | 0 | 1333 | 750 | 0 | 100000 | 100000 | |
| 49 | 411070446 | PRUDHVI GRANITES | Road Metal | 546 | MALLAVARAM | Gokavaram | 2 | 2-Nov-07 | 6-Nov-17 | 0 | 900 | 0 | 0 | 100000 | 0 | Expire d/Determined |
| 50 | 411150432 | M/S SWASTHIK METALS | Road Metal | 359/7 | MALLAVARAM | Gokavaram | 0.575 | 24-Feb-15 | 23-Feb-25 | 0 | 420 | 0 | 0 | 0 | 0 | |
| 51 | 411150433 | M/S SWASTHIK METALS | Road Metal | 359/10 | MALLAVARAM | Gokavaram | 0.886 | 24-Feb-15 | 23-Feb-25 | 0 | 420 | 0 | 0 | 0 | 0 | |
| 52 | 411060019 | Sri T. Venkata Reddy | Road Metal | 1P | Thantikonda | Gokavaram | 1 | 20-May-06 | 19-May-16 | 564 | 0 | 0 | 0 | 0 | 0 | Expire d/Determined |
| 53 | 412970292 | M/s Bharat Clays | China Clay (Crude) | 102/3 | JAGGAMPETA | Jaggampeta | 2.023 | 7-Oct-97 | 10-Jun-37 | 0 | 750 | 1950 | 0 | 37500 | 97500 | |
| 54 | 412000295 | Sri K.Srinivasa Rao | China Clay (Crude) | 26 | RAMAVARAM | Jaggampeta | 0.882 | 18-Feb-00 | 17-Feb-20 | 3650 | 2300 | 4100 | 117353 | 113834 | 200000 | |
| 55 | 412010266 | M/s Jyothula Industries | China Clay (Crude) | 21 | RAMAVARAM | Jaggampeta | 2.023 | 20-Nov-01 | 1-Sep-36 | 1500 | 1400 | 1800 | 69645 | 80324 | 75000 | |
| 56 | 412980276 | Sri D.V.V.Ramana Reddy | China Clay (Crude) | 19-Feb | RAMAVARAM | Jaggampeta | 0.607 | 20-Aug-98 | 19-Aug-18 | 1350 | 4630 | 4500 | 35200 | 231500 | 225000 | Renewal applied |
| 57 | 412080263 | M/s Gowri Shankar Mines | Fire Clay | 536/P | KADIAM | Kadiam | 1.214 | 10-Jul-08 | 9-Jul-28 | 4130 | 2880 | 2170 | 145044 | 144000 | 108500 | |
| 58 | 412100273 | Sri D. Subba rao | Fire Clay | 533/1 | KADIAM | Kadiam | 1.66 | 6-Jul-10 | 5-Jul-30 | 1010 | 475 | 20 | 50350 | 24900 | 0 | |
| 59 | 412960271 | Sri S.Sitharama Raju | Fire Clay | 536/3 | KADIAM | Kadiam | 2.233 | 22-Oct-96 | 21-Oct-18 | 16604 | 22300 | 20422 | 679446 | 1115000 | 1004595 | |
| 60 | 411130020 | Sri K.V.V.Satyanarayana Murthy | Gravel | 135 | Vemagiri | Kadiam | 2.218 | 25-Mar-13 | 24-Mar-18 | 12270 | 0 | 0 | 233061 | 0 | 0 | Expire d/Dete |

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| | | | | | | | | | | | | | | | | rmined |
| 61 | 4111604 23 | N.GANAPATHI RAO | Gravel | 86/1 | VEMAGIRI | Kadium | 0.82 1 | 24- Feb-16 | 23-Feb- 21 | 900 | 1530 0 | 28500 | 0 | 568160 | 7678 40 | |
| 62 | 4110802 37 | PRATHIPADU HARIJANA QUARRY KARMIKA SANGAM | Road Metal | 66/1Y | Jagapathinag aram | Kirlampudi | 1 | 4-Dec- 06 | 3-Dec-16 | 300 | 0 | 0 | 0 | 0 | 0 | Expire d/Dete rmined |
| 63 | 4110802 37 | PRATHIPADU HARIJANA QUARRY KARMIKA SANGAM | Building Stone | 66/1Y | Jagapathinag aram | Kirlampudi | 1 | 4-Dec- 06 | 3-Dec-16 | 360 | 0 | 0 | 3000 | 0 | 0 | Expire d/Dete rmined |
| 64 | 4111202 40 | M/s Sai Ram Building Stone | Building Stone | 1 | VELANKA | Kirlampudi | 1 | 1-Mar- 12 | 28-Feb- 22 | 420 | 720 | 420 | 76 | 63369.87 | 5000 0 | |
| 65 | 4110600 23 | Smt A.Manga Devi | Road Metal | 75/3A | BOLLEDDUPA LEM | Korukonda | 1 | 29- Mar-06 | 28-Mar- 26 | 750 | 690 | 900 | 62136 | 51750 | 6750 0 | |
| 66 | 4110600 24 | Sri K.P.C.S.Poojitha Rao | Road Metal | 75/3A | Bolleddupale m | Korukonda | 1 | 21- Aug-06 | 30-Mar- 18 | 492 | 0 | 0 | 9742 | 0 | 0 | Renew al applie d |
| 67 | 4111202 42 | Sri Venturi Rama Gopal | Road Metal | 75/3A | BOLLEDDUPA LEM | Korukonda | 1 | 6-Sep- 12 | 5-Sep-22 | 450 | 300 | 0 | 50000 | 56945.21 | 0 | |
| 68 | 4111200 28 | Sri Vundamatla Narayana Rao | Gravel | 80/2P | Kesavaram | Mandapeta | 1.30 8 | #N/A | #N/A | 12450 | 0 | 0 | 251726 | 0 | 0 | Expire d/Dete rmined |
| 69 | 4111503 78 | K.SIVANNARAYANA | Gravel | 79/1 | KESAVARAM | Mandapeta | 0.54 2 | 20- Feb-15 | 19-Feb- 18 | 9750 | 4600 | 2200 | 268916 | 142600 | 4719 8 | |
| 70 | 4111504 10 | K.MUNEESWARA RAO | Gravel | 69.P | KESAVARAM | Mandapeta | 2.20 5 | 4-Nov- 15 | 3-Nov-20 | 20780 | 3920 0 | 0 | 623600 | 1104900 | 0 | |
| 71 | 4111503 86 | N.RAJESWARI | Gravel | 103/1A 7,1A8, 1A11,1 A12 | VEMULAPALL E at SEETAY | Mandapeta | 1.62 | 13-Jul- 15 | 12-Jul-17 | 70500 | 5960 | 0 | 204320 0 | 114000 | 0 | Expire d/Dete rmined |
| 72 | 4111604 31 | P.ESWARA REDDY | Gravel | 103/A2 /C | VEMULAPALL E at SEETAY | Mandapeta | 1.61 9 | 25-Apr- 16 | 24-Apr- 21 | 0 | 6744 5 | 0 | 0 | 2023402 | 0 | |
| 73 | 4110504 51 | G.PADMAVATHI | Quartz | 17/A 17/VU | Rangapuram | Nellipaka | 1.25 | 27- Sep-05 | 26-Sep- 25 | 0 | 0 | 1400 | 0 | 0 | 9247 8 | |
| 74 | 4110702 51 | Sri Prathipati Surya Bhaskar Rao | Gravel | 897/3A P | PEDDAPURA M | Peddapura m | 1.41 7 | 9-Jan- 14 | 8-Jan-17 | 42640 | 6605 0 | 0 | 106280 0 | 1923775 | 0 | Expire d/Dete rmined |
| 75 | 4111103 44 | K.VENKATA KRISHNA REDDY | Gravel | 439 | Peddapuram | Peddapura m | 2.02 3 | 22-Jul- 11 | 21-Jul-16 | 5775 | 0 | 0 | 125772 | 0 | 0 | Expire d/Dete rmined |
| 76 | 4111400 | Sri Gunnam Surya Rao | Gravel | 897/3A | PEDDAPURA | Peddapura | 2.02 | 9-Jan- | 8-Jan-17 | 282450 | 3020 | 0 | 708932 | 824744 | 0 | |

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| | 40 | | | P | M | m | 4 | 14 | | | 0 | | 0 | | | |
| 77 | 4111400 41 | Sri Kanta Shankar | Gravel | 897/3A P | PEDDAPURA M | Peddapura m | 1.61 9 | 9-Jan- 14 | 8-Jan-17 | 227400 | 2200 | 0 | 520530 0 | 32200 | 0 | Expire d/Dete rmined |
| 78 | 4111403 50 | GUNNAM.RANGA RAO | Gravel | 70/1AP | Peddapuram | Peddapura m | 1.61 9 | 14- Mar-14 | 13-Mar- 16 | 3000 | 0 | 0 | 40014 | 0 | 0 | Expire d/Dete rmined |
| 79 | 4111503 53 | K.SRIMANNARAYANA | Gravel | 900 | Peddapuram | Peddapura m | 1.14 9 | 20-Jan- 15 | 10-Nov- 16 | 30585 | 0 | 0 | 642950 | 0 | 0 | Expire d/Dete rmined |
| 80 | 4111503 56 | CH.TULASIDAS | Gravel | 207/3, 4,5,6 | PEDDAPURA M | Peddapura m | 1.82 1 | 9-Feb- 15 | 22-Jan- 17 | 35550 | 2250 | 0 | 848300 | 0 | 0 | Expire d/Dete rmined |
| 81 | 4111503 57 | CH.RAMESH | Gravel | 207/1, 2 | PEDDAPURA M | Peddapura m | 2.02 3 | 9-Feb- 15 | 22-Jan- 17 | 26200 | 1545 0 | 0 | 874300 | 360000 | 0 | Expire d/Dete rmined |
| 82 | 4111503 68 | P.PAPARAO | Gravel | 207/7, 8 | PEDDAPURA M | Peddapura m | 4.56 | 7-Apr- 15 | 31-Mar- 18 | 59150 | 5000 | 0 | 160640 0 | 182400 | 0 | Expire d/Dete rmined |
| 83 | 4111503 84 | K.Seshagiri Rao | Gravel | 899/1C | PEDDAPURA M | Peddapura m | 0.80 9 | 13-Jul- 15 | 3-Mar-18 | 0 | 2100 | 0 | 0 | 63624 | 0 | Expire d/Dete rmined |
| 84 | 4111503 93 | M/S. PAVANAPUTHRA PROJECTS | Gravel | 898/11 | PEDDAPURA M | Peddapura m | 1.14 9 | 30-Jul- 15 | 29-Jul-20 | 31250 | 5217 5 | 7500 | 940540 | 1565250 | 3590 00 | |
| 85 | 4111504 21 | N.SATHI BABU | Gravel | 901/1C | PEDDAPURA M | Peddapura m | 0.60 7 | 18- Nov-15 | 19-May- 17 | 1320 | 5040 0 | 0 | 44400 | 1477100 | 0 | Expire d/Dete rmined |
| 86 | 4111503 70 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 1/2,1/3 ,1/4,1/ 5,2/3,2 /4 | RAMESWARA M | Peddapura m | 2.99 | 11-Jun- 15 | 10-Jun- 20 | 71594 | 3948 6 | 3986 | 187588 5 | 1064980 | 2392 00 | |
| 87 | 4111503 89 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 2/2,3/2 ,3/4,3/ 5 4/1 | RAMESWARA M | Peddapura m | 2.15 | 3-Aug- 15 | 2-Aug-20 | 25230 | 6869 | 10066 | 618705 | 119990 | 3019 80 | |
| 88 | 4111503 90 | M/S.SRI SATYA MINING & MULTIPURPOSE MUTUALLY AIDED CO- OPERATIVE SOCIETY LIMITED | Gravel | 23/3,2 3/5,23/ 6,23/9, 24/2,2 4/6, | RAMESWARA M | Peddapura m | 4.35 | 16-Jul- 15 | 15-Jul-20 | 20438 | 8203 | 8000 | 655000 | 245975 | 6600 0 | |

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| 89 | 4111503 95 | M/s.SRI SATYA MINING & MULTIPURPOSE MUTUALLY AIDED CO-OP SOCIETY LIMITED | Gravel | 6/1,6/2 .6/6,6/ 8 | RAMESWARA M | Peddapura m | 2.18 | 26- Aug-15 | 25-Aug- 20 | 6500 | 3022 | 2900 | 243907 | 87200 | 8720 0 | |
| 90 | 4111503 96 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 7/1,8/1 .8/3 | RAMESWARA M | Peddapura m | 1.61 9 | 26- Aug-15 | 25-Aug- 20 | 32879 | 2161 | 2158 | 939717 | 64800 | 1295 20 | |
| 91 | 4111503 97 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 12-Feb | RAMESWARA M | Peddapura m | 0.52 6 | 26- Aug-15 | 25-Aug- 20 | 4485 | 3707 | 0 | 111200 | 90000 | 4208 0 | |
| 92 | 4111503 98 | M/s. SRI SATYA MINING & MULTIPURPOSE MUTUALLY AIDED CO-OP SOCIETY LIMITED | Gravel | 6/4,6/9 | RAMESWARA M | Peddapura m | 0.31 5 | 26- Aug-15 | 25-Aug- 20 | 3340 | 4727 | 0 | 107800 | 128995 | 2520 0 | |
| 93 | 4111503 99 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 10/1,1 0/3,10/ 4,10/5, 10/6,1 0/7, | RAMESWARA M | Peddapura m | 6.47 5 | 26- Aug-15 | 25-Aug- 20 | 38145 | 1570 6 | 0 | 963400 | 471200 | 0 | |
| 94 | 4111504 01 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 11/1, 12/3 | RAMESWARA M | Peddapura m | 1.05 2 | 26- Aug-15 | 25-Aug- 20 | 14745 | 1400 | 0 | 466990 | 0 | 0 | |
| 95 | 4111504 02 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 04-Mar | Rameswaram | Peddapura m | 0.22 3 | 26- Aug-15 | 25-Aug- 20 | 6020 | 0 | 0 | 185800 | 0 | 1784 0 | |
| 96 | 4111504 04 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 08-Feb | RAMESWARA M | Peddapura m | 0.54 6 | 26- Aug-15 | 20-Aug- 20 | 8135 | 5634 | 10828 | 257000 | 146995 | 3466 80 | |
| 97 | 4111504 14 | M/S.SRI SAI VENKATA VIGNESH MULTI PURPOSE AND LABOUR CONTACT MUTUALLY AIDED CO-OPERATIVE SOCIETY LTD | Gravel | 15- May | RAMESWARA M | Peddapura m | 0.54 6 | 26- Nov-15 | 25-Nov- 17 | 700 | 9385 | 720 | 22000 | 280696 | 0 | Expire d/Dete rmined |
| 98 | 4111504 15 | M/S.SRI SAI VENKATA VIGNESH MULTI PURPOSE & LABOUR CONTRACT MUTUALLY AIDED CO- | Gravel | 13/3 14/4 | RAMESWARA M | Peddapura m | 1.09 3 | 26- Nov-15 | 25-Nov- 17 | 13340 | 1255 0 | 0 | 400093 | 376500 | 0 | Expire d/Dete rmined |

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| | | OPERATIVE SOCIETY LTD | | | | | | | | | | | | | | |
| 99 | 4111504 16 | M/S.SRI SAI VENKATA VIGNESH MULTI PURPOSE & LABOUR CONTRACT MUTUALLY AIDED CO-OPERATIVE SOCIETY LTD | Gravel | 14/3,6, 21/1 AND 22/2,3 | RAMESWARA M | Peddapura m | 2.56 6 | 26- Nov-15 | 25-Nov- 17 | 11300 | 2400 | 3420 | 339169 | 102800 | 0 | Expire d/Dete rmined |
| 100 | 4111504 17 | M/S.SRI SAI VENKATA VIGNESH MULTI PURPOSE & LABOUR CONTRACT MUTUALLY AIDED CO-OPERATIVE SOCIETY LTD | Gravel | 24/3,2 4/5 | RAMESWARA M | Peddapura m | 0.98 5 | 26- Nov-15 | 25-Nov- 17 | 1415 | 5800 | 1320 | 39600 | 172743 | 0 | Expire d/Dete rmined |
| 101 | 4111504 18 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 5/3,8/4 ,8/6 | RAMESWARA M | Peddapura m | 1.30 7 | 21- Dec-15 | 20-Dec- 20 | 0 | 1743 | 1742 | 0 | 0 | 1045 60 | |
| 102 | 4111504 19 | M/S.SRI SATYA MINING & MULTIPURPOSE MUTUALLY AIDED CO-OPERATIVE SOCIETY LIMITED | Gravel | 13/5, 14/1, 14/2 | RAMESWARA M | Peddapura m | 1.61 8 | 21- Dec-15 | 20-Dec- 20 | 0 | 1835 7 | 2160 | 0 | 550790 | 6472 0 | |
| 103 | 4111504 20 | SRI SATYA MINING AND MULTIPURPOSE MUTUALLY AIDED CO OPERATIVE SOCIETY LIMIT | Gravel | 9/1,9/2 ,9/5,9/ 6,9/7 | RAMESWARA M | Peddapura m | 2.76 | 21- Dec-15 | 20-Dec- 20 | 0 | 1258 0 | 0 | 0 | 266900 | 0 | |
| 104 | 4111604 29 | G.SATYANARAYANA | Gravel | 473/3 | RAYABHUPAL APATNAM | Peddapura m | 0.4 | 25-Apr- 16 | 24-Apr- 21 | 0 | 8075 | 3000 | 0 | 242250 | 7400 0 | |
| 105 | 4110700 42 | M/s Murali Krishna Stone Crusher | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 0.80 9 | 28-Apr- 07 | 27-Apr- 22 | 400 | 636 | 540 | 40500 | 55056.67 | 0 | |
| 106 | 4110700 43 | M/s Murali Krishna Stone Crusher | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 1.90 2 | 28-Apr- 07 | 27-Apr- 22 | 702 | 1268 | 1267 | 95000 | 112876.6 3 | 9512 0 | |
| 107 | 4110904 50 | M.SREENIVASA RAO | Road Metal | 53 | China sankarlapudi | Prathipadu | 13.5 9 | 20- Nov-09 | 19-Nov- 19 | 0 | 0 | 6660 | 0 | 0 | 6795 00 | |
| 108 | 4110904 50 | M.SREENIVASA RAO | Boulders | 53 | China sankarlapudi | Prathipadu | 13.5 9 | 20- Nov-09 | 19-Nov- 19 | 0 | 0 | 2400 | 0 | 0 | 0 | |
| 109 | 4111000 46 | PKR PROJECTS AND ENGINEERS | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 0.95 | 27-Apr- 10 | 1-Jul-27 | 13920 | 2100 | 1620 | 103150 0 | 149500 | 1183 03 | |

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| 110 | 411110048 | PKR PROJECTS AND ENGINEERS | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 2.645 | 10-Mar-11 | 9-Mar-21 | 2100 | 2496 | 27636 | 155000 | 184700 | 2072265 |
| 111 | 411110049 | PKR PROJECTS AND ENGINEERS | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 1 | 10-Mar-11 | 15-Apr-21 | 10320 | 2520 | 5400 | 663000 | 189000 | 403434 |
| 112 | 411120047 | PKR PROJECTS AND ENGINEERS | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 6 | 25-Aug-12 | 24-Aug-22 | 31920 | 9802 | 50040 | 1809000 | 600000 | 3748100 |
| 113 | 411120058 | PKR PROJECTS AND ENGINEERS | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 1.376 | 18-Jun-12 | 17-Jun-22 | 2700 | 2220 | 6492 | 181500 | 159000 | 480567 |
| 114 | 411120060 | M/s Murali Krishna Stone Crusher | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 0.404 | 28-Aug-12 | 27-Aug-27 | 219 | 260 | 268 | 20000 | 23675.86 | 20268 |
| 115 | 411120061 | M/s Murali Krishna Stone Crusher | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 0.09 | 28-Aug-12 | 27-Aug-27 | 32 | 236 | 60 | 4500 | 18498.29 | 4500 |
| 116 | 411120062 | M/s Murali Krishna Stone Crusher | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 0.87 | 28-Aug-12 | 27-Aug-27 | 322 | 580 | 580 | 66 | 95151.78 | 43500 |
| 117 | 411120255 | Sri Chakkapalli Suryanarayana | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 0.49 | 9-Jul-12 | 8-Jul-22 | 183 | 30060 | 0 | 0 | 2258378.15 | 24495 |
| 118 | 411130063 | Sri G.Lakshmana Rao | Road Metal | 53 | CHINA SANKARLAPU DI | Prathipadu | 0.809 | 1-Mar-13 | 28-Feb-23 | 344 | 541 | 938 | 40500 | 44588.67 | 59 |
| 119 | 412070308 | M/s Maheswari Minerals | Laterite (Cement) | 1 | Chintaluru | Prathipadu | 24.281 | 28-Mar-07 | 27-Mar-27 | 240000 | 0 | 0 | 13770000 | 0 | 0 |
| 120 | 412080298 | M/s Coral Mineral Product Ltd | China Clay (Crude) | 419 | DHARMAVAR AM | Prathipadu | 1.597 | 1-Feb-08 | 31-Jan-28 | 370 | 260 | 600 | 23955 | 29074.47 | 9881 |
| 121 | 412130319 | Sri Andru Srinivas | Laterite (Cement) | 703 | GIRIJANAPUR AM | Prathipadu | 10 | 7-Dec-13 | 3-Dec-33 | 380000 | 80000 | 85000 | 21555000 | 16115010 | 35085000 |
| 122 | 412130319 | Sri Andru Srinivas | Laterite (Metallurgical Grade) | 703 | GIRIJANAPUR AM | Prathipadu | 10 | 7-Dec-13 | 3-Dec-33 | 0 | 40000 | 175000 | 0 | 0 | 0 |
| 123 | 412130320 | Smt Manyam Venkata Rajani | Laterite (Cement) | 703 | GIRIJANAPUR AM | Prathipadu | 10 | 7-Dec-13 | 3-Dec-33 | 60000 | 42500 | 45000 | 4642500 | 9522510 | 18200000 |

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|-----|-----------|-------------------------------------|--------------------------------|-----------------------|-------------------|------------|--------|-----------|-----------|--------|--------|--------|----------|------------|----------|-----------------|
| 124 | 412130320 | Smt Manyam Venkata Rajani | Laterite (Metallurgical Grade) | 703 | GIRIJANAPURAM | Prathipadu | 10 | 7-Dec-13 | 3-Dec-33 | 0 | 30000 | 105000 | 0 | 0 | 0 | |
| 125 | 412130321 | Smt Andru Sujatha | Laterite (Cement) | 7,03,589 | GIRIJANAPURAM | Prathipadu | 10 | 4-Dec-13 | 3-Dec-33 | 240000 | 54500 | 130000 | 1347000 | 12912510 | 33950000 | |
| 126 | 412130321 | Smt Andru Sujatha | Laterite (Metallurgical Grade) | 7,03,589 | GIRIJANAPURAM | Prathipadu | 10 | 4-Dec-13 | 3-Dec-33 | 0 | 60000 | 90000 | 0 | 0 | 0 | |
| 127 | 412130322 | Sri M.Venkateswara Rao | Laterite (Cement) | 7,03,589 | GIRIJANAPURAM | Prathipadu | 10 | 4-Dec-13 | 3-Dec-33 | 220000 | 147500 | 195000 | 1367000 | 33267520 | 48575000 | |
| 128 | 412130322 | Sri M.Venkateswara Rao | Laterite (Metallurgical Grade) | 7,03,589 | GIRIJANAPURAM | Prathipadu | 10 | 4-Dec-13 | 3-Dec-33 | 0 | 104500 | 235000 | 0 | 0 | 0 | |
| 129 | 412130323 | Sri Vempati Veerraju | Laterite (Cement) | 703 | GIRIJANAPURAM | Prathipadu | 10 | 4-Dec-13 | 3-Dec-33 | 25000 | 32500 | 45000 | 1805000 | 6147510 | 14825000 | |
| 130 | 412130323 | Sri Vempati Veerraju | Laterite (Metallurgical Grade) | 703 | GIRIJANAPURAM | Prathipadu | 10 | 4-Dec-13 | 3-Dec-33 | 0 | 12500 | 80000 | 0 | 0 | 0 | |
| 131 | 412130325 | Andru Ramesh Babu | Laterite (Cement) | 7,03,589 | GIRIJANAPURAM | Prathipadu | 10 | 4-Dec-13 | 3-Dec-33 | 145000 | 34500 | 150000 | 9675000 | 17787510 | 43700000 | |
| 132 | 412130325 | Andru Ramesh Babu | Laterite (Metallurgical Grade) | 7,03,589 | GIRIJANAPURAM | Prathipadu | 10 | 4-Dec-13 | 3-Dec-33 | 0 | 95000 | 170000 | 0 | 0 | 0 | |
| 133 | 411020252 | Sri Ch.Suryanarayana | Road Metal | 160 | PEDA SANKARLAPUDI | Prathipadu | 1.25 | 12-Nov-02 | 11-Nov-17 | 522 | 24830 | 0 | 0 | 1869281.51 | 0 | Renewal applied |
| 134 | 411130044 | Sri Murali Krishna Constructions | Road Metal | 160 | PEDA SANKARLAPUDI | Prathipadu | 0.809 | 1-Mar-13 | 27-Apr-23 | 300 | 541 | 541 | 40500 | 48052.64 | 40507 | |
| 135 | 411090050 | Sri G. Laxman Rao | Gravel | 80 | PRATHIPADU | Prathipadu | 3 | 9-Jan-09 | 8-Jan-19 | 2305 | 6024 | 5000 | 7027 | 358829.59 | 12 | |
| 136 | 412140311 | M/s Aurelia Laterite Mining pvt Ltd | Laterite (Cement) | USHP | VANTHADA | Prathipadu | 67.599 | 21-Feb-14 | 16-Sep-28 | 482500 | 100500 | 0 | 32730381 | 6075000 | 0 | |
| 137 | 412140326 | Smt Kude Laxmi | Laterite (Metallurgical) | 7/1,7/2,10/P,11/P,12/ | VANTHADA | Prathipadu | 10.417 | 13-May-14 | 12-May-34 | 0 | 161900 | 221300 | 1661111 | 25340840 | 20197500 | |

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|-----|-----------|-----------------------------|-------------------|------------------------------------|---------------------|-----------------------|--------|-----------|-----------|-------|-------|-------|--------|----------|--------|--------------------|
| | | | Grade) | P,16,17 /P | | | | | | | | | | | | |
| 138 | 412140326 | Smt Kude Laxmi | Laterite (Cement) | 7/1,7/2,10/P,11/P,12/P,16,17/P | VANTHADA | Prathipadu | 10.417 | 13-May-14 | 12-May-34 | 30000 | 86600 | 24000 | 0 | 0 | 0 | |
| 139 | 412990278 | Sri Ch.Suresh | Fire Clay | 42 | Bommuru(u) | Rajamahen dravaram(R) | 4.856 | 30-Jul-99 | 29-Jul-19 | 800 | 0 | 0 | 72840 | 0 | 0 | |
| 140 | 411060257 | Sri K.Nagaiah | Road Metal | 770 | KOLAMURU | Rajamahen dravaram(R) | 0.76 | 1-Nov-06 | 31-Oct-16 | 0 | 300 | 0 | 0 | 38200 | 0 | Renewal applied |
| 141 | 411070070 | Sri K.Suresh Kumar | Road Metal | 689/3 | KOLAMURU | Rajamahen dravaram(R) | 1.214 | 19-Jan-17 | 18-Jan-17 | 1950 | 300 | 0 | 139074 | 0 | 0 | Expired/Determined |
| 142 | 411080067 | Sri I. Anil Kumar | Road Metal | 771/2P | KOLAMURU | Rajamahen dravaram(R) | 0.668 | 19-Nov-08 | 18-Nov-18 | 2100 | 1950 | 3300 | 150140 | 146250 | 247400 | |
| 143 | 411080071 | M/s Ch.Veerraju Associates | Road Metal | 434,436/1,2,742/742/4C1,743/2AP | KOLAMURU | Rajamahen dravaram(R) | 10.08 | 15-Dec-08 | 14-Dec-23 | 4800 | 6732 | 0 | 504000 | 72439.67 | 0 | |
| 144 | 411080072 | M/s Ch. Veerraju & Co., | Road Metal | 689/7A,690/1C,690/2A,690/2B,690/2C | KOLAMURU | Rajamahen dravaram(R) | 1.842 | 15-Dec-08 | 14-Dec-23 | 1206 | 1230 | 1260 | 92000 | 92103.07 | 94600 | |
| 145 | 411050064 | M/s SriHari Metal Suppliers | Road Metal | 147/1C | RAJAHMUNDARY (PART) | Rajamahen dravaram(R) | 1.82 | 16-Sep-05 | 15-Sep-20 | 966 | 900 | 1200 | 91000 | 93290.27 | 90850 | |
| 146 | 411070066 | Sri B.Satyanarayana | Road Metal | 771/1,791/1A | RAJAHMUNDARY (PART) | Rajamahen dravaram(R) | 1.14 | 3-Jul-07 | 27-Aug-16 | 978 | 750 | 0 | 57000 | 114000 | 0 | Expired/Determined |
| 147 | 411080065 | Sri Satyanarayana Granites | Road Metal | 270/2,689/6 | RAJAHMUNDARY (PART) | Rajamahen dravaram(R) | 1.942 | 14-Feb-08 | 13-Feb-28 | 1057 | 360 | 0 | 0 | 97000 | 0 | |

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|-----|-----------|--------------------------------|----------------|-------------------------|---------------------|----------------------|--------|-----------|-----------|-------|-------|-------|---------|-----------|--------|----------------------|
| 148 | 411140354 | M.KRISHNA RAO | Gravel | 509/3 | RAJAHMUNDARY (PART) | Rajamahendravaram(R) | 0.506 | 30-Jul-14 | 29-Jul-16 | 8500 | 1200 | 0 | 260620 | 20000 | 0 | Expire d/Dete rmined |
| 149 | 412040268 | Sri Ch.Suresh | Fire Clay | 106/4B ,107/3, 154/1, 2 | BHUPALAPAT NAM | Rajanagara m | 1.04 | 22-Nov-04 | 21-Nov-24 | 350 | 400 | 250 | 18518 | 50000 | 0 | |
| 150 | 412100289 | M/S JSR CLAY MINES | Fire Clay | 156/1A P | BHUPALAPAT NAM | Rajanagara m | 1.612 | 14-May-10 | 13-May-30 | 75 | 100 | 155 | 2336 | 32230.75 | 46820 | |
| 151 | 411120412 | P.ADI CHANDRA SEKHAR | Gravel | 330/6G | G. YERRAMPAL E M | Rajanagara m | 1.469 | 2-Feb-12 | 1-Feb-17 | 8820 | 3800 | 0 | 294770 | 57500 | 0 | |
| 152 | 411050082 | M/s Sangham Minerals | Gravel | 35/3 | KONDA GUNTURU | Rajanagara m | 2 | 12-Jun-05 | 11-Jun-25 | 1750 | 16600 | 22200 | 80000 | 440222.01 | 666000 | |
| 153 | 411100083 | Sri U.Ganga Raju | Gravel | 629/10 | KONDA GUNTURU | Rajanagara m | 1.477 | 27-Apr-10 | 26-Apr-20 | 12000 | 6600 | 3600 | 332446 | 216000 | 30800 | |
| 154 | 411130086 | Sri Challa Siva Subrahmanyam | Gravel | 648/1 &648/2 | Konda gunturu | Rajanagara m | 3.72 | 3-Jul-13 | 2-Jul-18 | 14000 | 0 | 0 | 259651 | 0 | 0 | |
| 155 | 411130088 | Sri K.V.V.Satyanarayana Murthy | Gravel | 647/P | Konda gunturu | Rajanagara m | 1.105 | 8-Nov-13 | 7-Nov-18 | 18600 | 0 | 0 | 438400 | 0 | 0 | |
| 156 | 411130089 | Sri Allampalli Venkata Kishore | Gravel | 647/P | Konda gunturu | Rajanagara m | 0.648 | 8-Nov-13 | 7-Nov-18 | 10200 | 0 | 0 | 218743 | 0 | 0 | |
| 157 | 411150371 | A.VENKATA KISHORE | Gravel | 647/2 | Konda gunturu | Rajanagara m | 2.023 | 9-Jun-15 | 16-Jul-18 | 58700 | 0 | 0 | 1550800 | 80800 | 80920 | |
| 158 | 412050293 | M/s Sangam Minerals | Fire Clay | 35/3 | KONDA GUNTURU | Rajanagara m | 13.967 | 12-Jun-05 | 11-Jun-25 | 3300 | 5585 | 5785 | 303340 | 279341 | 289250 | |
| 159 | 411130090 | Sri Kusu Muneswar Rao | Gravel | 183/4B | Namavaram | Rajanagara m | 0.777 | 20-Dec-13 | 19-Dec-16 | 6548 | 0 | 0 | 163914 | 0 | 0 | Renew al applie d |
| 160 | 411060424 | SREE SAI CHAITANYA & CO | Ordinary Earth | 348 | PALACHARLA | Rajanagara m | 0.81 | 31-Oct-06 | 31-May-18 | 1344 | 2100 | 5980 | 40500 | 71870 | 179400 | Renew al applie d |
| 161 | 411060424 | SREE SAI CHAITANYA & CO | Gravel | 348 | PALACHARLA | Rajanagara m | 0.81 | 31-Oct-06 | 31-May-18 | 0 | 300 | 0 | 0 | 0 | 0 | Renew al applie |

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|-----|-----------|----------------------------------|------------|--|------------|--------------|--------|-----------|-----------|-------|-------|-------|---------|---------|---------|---|
| 162 | 411090074 | Smt M. Lalitha Kumari | Road Metal | 424/2P,425/2P | PALACHARLA | Rajanagara m | 2.81 | 6-Jul-09 | 29-Aug-24 | 0 | 1800 | 0 | 0 | 0 | 0 | |
| 163 | 411100068 | Sri Venkateswara Metals | Road Metal | 424/2P & 430 | PALACHARLA | Rajanagara m | 1.74 | 28-Apr-10 | 27-Apr-20 | 1800 | 3000 | 3900 | 145750 | 225000 | 292500 | |
| 164 | 411100261 | M/s Ratna Granites | Road Metal | 429/2P,3P,49,432 | PALACHARLA | Rajanagara m | 6.433 | 11-Feb-10 | 10-Feb-25 | 5400 | 9600 | 11700 | 474500 | 718917 | 877650 | |
| 165 | 411110080 | M/s Ratna Granites | Road Metal | 429/2P | PALACHARLA | Rajanagara m | 1.571 | 17-Apr-11 | 16-Apr-26 | 1500 | 1800 | 1500 | 99500 | 133527 | 112550 | |
| 166 | 411120076 | M/s Ch.Veerraju &Co., | Road Metal | 427/1,2P,3,428/1,2,429/4P,358/1,2,359,36 | PALACHARLA | Rajanagara m | 24.072 | 10-May-12 | 9-May-27 | 17100 | 16020 | 16044 | 1203500 | 1203500 | 1203500 | |
| 167 | 411120077 | M/s Ch.Veerraju &Co., | Road Metal | 346,347,348/P,419,420/P,420/1P420/2,3,42 | PALACHARLA | Rajanagara m | 19.429 | 10-Oct-12 | 9-Oct-27 | 13356 | 18900 | 63000 | 971500 | 1417263 | 4724950 | |
| 168 | 411120078 | M/s Ch.Veerraju &Co., | Road Metal | 418,333/1P,354/1,354/2P,355/P,356/1,357/ | PALACHARLA | Rajanagara m | 24.253 | 22-May-12 | 21-May-27 | 18492 | 16170 | 16164 | 1212500 | 1212650 | 1212650 | |
| 169 | 411120079 | M/s Ch. Veerraju & others | Road Metal | 269/3,4,270/3,4,5,343/1P343/2P,344,345,3 | PALACHARLA | Rajanagara m | 24.156 | 22-May-12 | 21-May-27 | 17172 | 16080 | 16104 | 1208000 | 1208000 | 1207450 | |
| 170 | 411120085 | Sri Medapati Veera Raghava Reddy | Road Metal | 424/2P,429/1P | PALACHARLA | Rajanagara m | 0.887 | 30-Oct-12 | 29-Oct-22 | 2200 | 593 | 1695 | 154398 | 44500 | 126975 | |

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|-----|-----------|--|--------------------------|------------------------------------|----------------|------------------|-------|-----------|-----------|----------|--------|-------|---------|-----------|---------|----------------------|
| 171 | 411140361 | CH VEERRAJU & CO | Road Metal | 424/2P,425/1,2P,426/1 | PALACHARLA | Rajanagara m | 3.7 | 6-Sep-14 | 5-Sep-29 | 1818 | 8520 | 64200 | 185000 | 661447.26 | 4815000 | |
| 172 | 411060069 | Sri K.Balaramakrishna | Road Metal | 125/1,148 | RAJANAGARAM | Rajanagara m | 2.748 | 24-Jul-06 | 23-Jul-16 | 2700 | 1833 | 0 | 188575 | 0 | 0 | Expire d/Dete rmined |
| 173 | 411100075 | Smt K.Ganga Bhavani | Road Metal | 126,146P | RAJANAGARAM | Rajanagara m | 3.16 | 31-May-10 | 30-May-20 | 2700 | 3600 | 0 | 181567 | 112000 | 0 | |
| 174 | 411140091 | Venkata Krishna Metal Crusher | Road Metal | 13/P,141/P,144/P,145/P,146/P,150/P | RAJANAGARAM | Rajanagara m | 7.294 | 10-Feb-14 | 9-Feb-29 | 17840 | 15500 | 1600 | 2116787 | 1689600 | 3985700 | |
| 175 | 411140091 | Venkata Krishna Metal Crusher | Ordinary Earth | 13/P,141/P,144/P,145/P,146/P,150/P | RAJANAGARAM | Rajanagara m | 7.294 | 10-Feb-14 | 9-Feb-29 | 25110 | 17570 | 52500 | 0 | 0 | 0 | |
| 176 | 411140259 | M/s Venkateswara Granites | Road Metal | 258/8,9 | RAJANAGARAM | Rajanagara m | 5.103 | 22-Jul-14 | 21-Jul-29 | 6300 | 7200 | 12450 | 938866 | 853650 | 995550 | |
| 177 | 411140259 | M/s Venkateswara Granites | Ordinary Earth | 258/8,9 | RAJANAGARAM | Rajanagara m | 5.103 | 22-Jul-14 | 21-Jul-29 | 15075 | 10455 | 2055 | 0 | 0 | 0 | |
| 178 | 412000277 | Sri P.Venkateswara Rao | Fire Clay | 130/4A | Rajanagaram | Rajanagara m | 0.453 | 11-Dec-00 | 10-Dec-20 | 50 | 0 | 0 | 960 | 15011.28 | 0 | |
| 179 | 411110331 | CHUPPARAPALEM GIRIJANA QUARRY WORKERS LABOUR CONTRACT CO-OPERATIVE SOCIETY LTD | Color Granite-Leptinites | 37/1,70/2,72 | CHUPPARIPAL EM | Rampachod avaram | 3.93 | 15-Sep-11 | 14-Sep-31 | 1146.791 | 184.11 | 0 | 2361650 | 534000 | 393000 | |
| 180 | 411040092 | Sri Parada Venkanna Dora | Road Metal | 58 | K.YERRAMPAL EM | Rampachod avaram | 0.5 | 28-Oct-14 | 27-Oct-24 | 318 | 150 | 0 | 25000 | 0 | 0 | |
| 181 | 411080346 | A.P.TRIBAL MINING COMPANY(P)LTD | Road Metal | 105 | NARASAPURAM | Rampachod avaram | 3 | 19-Aug-08 | 18-Aug-18 | 1286 | 300 | 0 | 150000 | 178109.59 | 0 | |
| 182 | 411140348 | Ambati Chamundeswara Rao | Gravel | 410/1,410/11 | G. donthamuru | Rangampet a | 4.451 | 4-Apr-14 | 3-Apr-19 | 20350 | 0 | 0 | 368000 | 0 | 0 | |

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|-----|-----------|---------------------------|-------------------------|--|---------------------|--------------|-------|-----------|-----------|----------|----------|----------|---------|-----------|----------|---------------------|
| 183 | 411160425 | K.RAMA CHANDRA REDDY | Gravel | 409/1, 409/2, 409/3, 409/4P ,409/5 | G. DONTAMUR U | Rangampeta | 1.255 | 5-Mar-16 | 17-Nov-18 | 1500 | 56046 | 0 | 114800 | 1561380 | 0 | |
| 184 | 411160439 | T.CHIRANJEEVI RAO | Gravel | 259 | G. DONTAMUR U | Rangampeta | 3.035 | 18-Jun-16 | 12-Jul-20 | 0 | 94800 | 22800 | 0 | 2844200 | 683800 | |
| 185 | 411180454 | S.SATYANARAYANA REDDY | Gravel | 410/7 | G. donthamuru | Rangampeta | 2.023 | 25-Jan-18 | 18-Sep-21 | 0 | 0 | 3800 | 0 | 0 | 127500 | |
| 186 | 411180453 | M.SATYA NARESH | Gravel | 178/3B | Nallamilli | Rangampeta | 1.926 | 3-Jan-18 | 2-Jan-23 | 0 | 0 | 8100 | 0 | 0 | 240040 | |
| 187 | 411180456 | K.CHAKRAVARTHI | Gravel | 178/3A | Nallamilli | Rangampeta | 1.926 | 1-Feb-18 | 31-Jan-23 | 0 | 0 | 2660 | 0 | 0 | 85840 | |
| 188 | 411180455 | K.ANIL SRIKANTH REDDY | Gravel | 182 | Singampalle | Rangampeta | 1.019 | 1-Feb-18 | 31-Jan-21 | 0 | 0 | 750 | 0 | 0 | 0 | |
| 189 | 411150377 | P.ABBULU | Gravel | 167/3 | Veerampalem | Rangampeta | 1.619 | 7-Jan-15 | 13-Aug-17 | 27750 | 0 | 0 | 631781 | 0 | 0 | |
| 190 | 411070105 | Sri J.Srinivasa Rao | Road Metal | 1 | China Mallapuram | Rowthulapudi | 18 | 29-Dec-07 | 28-Dec-17 | 0 | 319000 | 500000 | 170104 | 33900001 | 27750001 | Renewal applied |
| 191 | 411150394 | P.CHINA RAMI REDDY | Road Metal | 44 | Jaldam | Rowthulapudi | 4.5 | 1-May-15 | 30-Apr-25 | 1750 | 3000 | 0 | 225000 | 308373.29 | 0 | |
| 192 | 411010096 | Surya Stone Crusher | Road Metal | 1 | Mulagapudi | Rowthulapudi | 1 | 14-Oct-01 | 13-Oct-27 | 460 | 666 | 300 | 52106 | 59369.87 | 50000 | |
| 193 | 411070103 | Sri M.Murali Krishna | Road Metal | 1 | Mulagapudi | Rowthulapudi | 3 | 6-May-07 | 6-Apr-17 | 4500 | 4000 | 1000 | 228303 | 300000 | 0 | Expired/Determinded |
| 194 | 411110116 | Sri K. Aruna Kumar | Road Metal | 1 | Mulagapudi | Rowthulapudi | 1.5 | 31-Oct-11 | 30-Oct-21 | 1266 | 1001 | 1000 | 100750 | 75000 | 74975 | |
| 195 | 411150383 | K.SATISH KUMAR | Road Metal | 1 | Mulagapudi | Rowthulapudi | 1 | 7-Jul-15 | 6-Jul-25 | 790 | 666 | 0 | 68250 | 50000 | 50000 | |
| 196 | 411150407 | S.V.PRASADA REDDY | Road Metal | 1 | Mulagapudi | Rowthulapudi | 4 | 19-Jun-15 | 18-Jun-25 | 2200 | 2665 | 150 | 200000 | 200000 | 0 | |
| 197 | 411090109 | Sri Y. V Rama Krishna Rao | Road Metal | 158 | Raghavapatnam | Rowthulapudi | 7 | 7-Jul-09 | 6-Jul-19 | 2773 | 4666 | 500 | 350188 | 415589.04 | 0 | |
| 198 | 411090405 | S.V.PRASADA REDDY | Road Metal | 158 | Raghavapatnam | Rowthulapudi | 2 | 7-Jul-09 | 6-Jul-19 | 816 | 1334 | 150 | 100151 | 118789.73 | 0 | |
| 199 | 411110333 | M/s Silicon Rocs | Colour Granite (Others) | 135 | Raghavapatnam | Rowthulapudi | 4.6 | 30-Dec-11 | 13-Nov-26 | 1719.083 | 1401.535 | 1377.832 | 3670518 | 3208998 | 3118076 | |

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|-----|-----------|--|------------|------|------------------|--------------|------|-----------|-----------|-------|-------|-------|---------|----------|--------|----------------------|
| 200 | 411050098 | M/s Pioneer Builders | Road Metal | 81/2 | S. pydipala | Rowthulapudi | 1 | 24-Oct-15 | 23-Oct-25 | 9100 | 0 | 0 | 400000 | 0 | 0 | |
| 201 | 411070099 | M/s Sidhvi Infrastructures Project Ltd | Road Metal | 15 | S. Pydipala | Rowthulapudi | 2.12 | 24-Apr-07 | 27-Apr-22 | 15990 | 11634 | 10140 | 1010250 | 869350 | 760350 | |
| 202 | 411070101 | M/s Sidhvi Infrastructures Project Ltd | Road Metal | 15 | S. Pydipala | Rowthulapudi | 1.2 | 28-Apr-07 | 27-Apr-22 | 14790 | 8456 | 7670 | 900835 | 620700 | 573750 | |
| 203 | 411070102 | M/s Sidhvi Infrastructures Project Ltd | Road Metal | 15 | S. Pydipala | Rowthulapudi | 0.85 | 28-Apr-07 | 27-Apr-22 | 12910 | 7518 | 6864 | 760000 | 564350 | 514017 | |
| 204 | 411090107 | Ms Srinivasa Stone Crushers | Road Metal | 15 | S. pydipala | Rowthulapudi | 1 | 2-Jul-09 | 1-Jul-24 | 469 | 0 | 0 | 0 | 0 | 0 | |
| 205 | 411110115 | Sri K.Sridhar Naidu | Road Metal | 15 | S. pydipala | Rowthulapudi | 5 | 7-Jul-11 | 6-Jul-21 | 2400 | 0 | 0 | 46700 | 0 | 0 | |
| 206 | 411120119 | Sri P. Sri Rama Krishna | Road Metal | 15 | S. Pydipala | Rowthulapudi | 1 | 3-Jan-12 | 2-Jan-22 | 467 | 666 | 600 | 50076 | 9369.87 | 50000 | |
| 207 | 411120120 | Smt G. Vara Laxmi | Road Metal | 15 | S. Pydipala | Rowthulapudi | 1.5 | 21-Mar-12 | 20-Mar-22 | 651 | 1000 | 1000 | 75107 | 89054.8 | 75000 | |
| 208 | 411150443 | MADDUKURI SIVARAMA KRISHNA | Road Metal | 15 | S. Pydipala | Rowthulapudi | 2.5 | 16-Jul-15 | 15-Jul-25 | 0 | 1666 | 0 | 0 | 253647 | 0 | |
| 209 | 411050095 | Sri G.Laxmana Murthy | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 1 | 19-Jul-05 | 18-Jul-15 | 300 | 0 | 0 | 0 | 0 | 0 | Expire d/Dete rmined |
| 210 | 411060126 | Sri R. Kondala Rao | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 0.5 | 16-Nov-06 | 15-Nov-16 | 240 | 0 | 0 | 15685 | 4222.6 | 0 | Expire d/Dete rmined |
| 211 | 411070104 | Smt K.Padmavathi | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 0.5 | 25-May-07 | 24-May-27 | 282 | 540 | 420 | 25000 | 41083.6 | 31500 | |
| 212 | 411090108 | Sri G. Papa Rao | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 0.4 | 8-Jul-09 | 7-Jul-19 | 264 | 0 | 0 | 28543 | 20000 | 20000 | |
| 213 | 411100111 | Sri G. China Rama Reddy | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 0.8 | 8-Mar-10 | 7-Mar-20 | 510 | 630 | 600 | 52566 | 47250 | 45000 | |
| 214 | 411110117 | Sri K.Aruna Kumar | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 0.5 | 31-Oct-11 | 30-Oct-21 | 738 | 503 | 300 | 50300 | 37500 | 24925 | |
| 215 | 411110123 | Sri R. Rama Krishna Rao | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 0.4 | 5-Dec-11 | 4-Dec-21 | 300 | 180 | 0 | 27717 | 20000 | 19780 | |
| 216 | 411120121 | Sri G. Laxmana Murthy | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 1.5 | 21-Mar-12 | 20-Mar-22 | 650 | 1000 | 1000 | 75000 | 89054.8 | 74963 | |
| 217 | 411150365 | KARUTURI.VISWATEJA | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 1 | 19-Jan-15 | 25-May-25 | 576 | 1122 | 1982 | 50000 | 89488.21 | 148650 | |
| 218 | 411150372 | P.ANANTHA LAKSHMI | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 1 | 19-Mar-15 | 20-Mar-22 | 467 | 666 | 670 | 50075 | 59369.87 | 50250 | |

| | | | | | | | | | | | | | | | | |
|-----|-----------|---|------------|--------|------------------|--------------|-------|-----------|-----------|--------|-------|-------|---------|-----------|---------|--------------------|
| 219 | 411150373 | SAI RAMA STONE CRUSHER | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 2.5 | 15-Jun-15 | 9-Apr-27 | 1994 | 1667 | 1663 | 172250 | 125007 | 125000 | |
| 220 | 411150382 | M/S S.S.N.R.PROJECTS | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 3 | 9-Jun-15 | 6-Jul-27 | 1206 | 2000 | 300 | 150000 | 162739.73 | 150000 | |
| 221 | 411990094 | I.SURESH RAJU | Road Metal | 90 | Tirupatamma peta | Rowthulapudi | 1 | 22-Oct-99 | 21-Oct-24 | 444 | 1288 | 455 | 0 | 50000 | 49907 | |
| 222 | 411090110 | M/s Anjani Metal Crushers | Road Metal | 261 | Uppampalem | Rowthulapudi | 4 | 19-Nov-09 | 18-Nov-24 | 2071 | 2667 | 14625 | 200000 | 237455.82 | 1096875 | |
| 223 | 411090385 | A.RAJA BABU | Road Metal | 261 | Uppampalem | Rowthulapudi | 6 | 23-Dec-09 | 22-Dec-22 | 2952 | 4000 | 96 | 56712 | 600000 | 300000 | |
| 224 | 411120374 | M.ANTHARVEDI REDDY | Road Metal | 261 | Uppampalem | Rowthulapudi | 4 | 25-Jan-12 | 24-Jan-22 | 1792 | 2666 | 0 | 200293 | 37479.45 | 400000 | |
| 225 | 411070100 | Ravi Babu VS Peddireddi | Road Metal | 15 | S. pydipala | Rowthulapudi | 0.7 | 28-Apr-07 | 27-Apr-22 | 0 | 0 | 4552 | 37174 | 35000 | 341400 | |
| 226 | 411150408 | N.PALLAPU RAJU | Gravel | 24-Jan | JAGGAMMAG ARIPEA | Samalkota | 1.618 | 15-Oct-15 | 19-Aug-20 | 140945 | 40450 | 0 | 4266437 | 1158700 | 0 | |
| 227 | 411160430 | G.SATYANARAYANA | Gravel | 07-Jan | VETLAPALEM | Samalkota | 0.648 | 25-Apr-16 | 24-Apr-21 | 0 | 11510 | 7500 | 0 | 345420 | 199000 | |
| 228 | 411150406 | S.Venkata Ramana | Gravel | 60 | Konthangi | Sankhavaram | 0.809 | 2-Jan-15 | 1-Jan-20 | 17400 | 0 | 0 | 522151 | 0 | 0 | |
| 229 | 411070381 | S.NARAYANA REDDY | Road Metal | 39 | SIDDIVARIPAL EM | Sankhavaram | 15 | 31-Jul-07 | 30-Jul-27 | 5850 | 10000 | 10000 | 751114 | 890547.94 | 0 | |
| 230 | 411080127 | CH.BAPI REDDY | Road Metal | 1 | Siddivaripalem | Sankhavaram | 9.238 | 8-Aug-08 | 7-Aug-18 | 300 | 0 | 0 | 0 | 0 | 0 | |
| 231 | 411060138 | Sri M.V.V.Satyanarayana | Road Metal | 122 | CHINAKONDE PUDI | Seethanagar | 1.21 | 10-Apr-06 | 10-Apr-26 | 666 | 804 | 805 | 60500 | 11337.54 | 120919 | |
| 232 | 411060139 | Sri M.V.V.Satyanarayana | Road Metal | 67 | CHINAKONDE PUDI | Seethanagar | 2.821 | 10-Apr-06 | 8-Apr-26 | 1548 | 1878 | 1880 | 141000 | 26459.95 | 282071 | |
| 233 | 411050136 | M/s Balatripura Sundari Metal Suppliers | Road Metal | 241 | Nagampalle | Seethanagar | 1 | 28-Nov-05 | 26-Nov-17 | 372 | 0 | 0 | 0 | 9045.21 | 0 | Renewal applied |
| 234 | 411060137 | Sri M.Ramakrishna | Road Metal | 241 | NAGAMPALLE | Seethanagar | 1 | 17-Mar-06 | 14-Mar-18 | 456 | 666 | 0 | 7390 | 52054.8 | 0 | Renewal applied |
| 235 | 411060141 | Sri P.Eswara Reddy | Road Metal | 241 | NAGAMPALLE | Seethanagar | 0.55 | 18-Sep-06 | 17-Sep-16 | 198 | 140 | 0 | 27500 | 0 | 0 | Expired/Determined |
| 236 | 411060142 | Sri P.Eswara Reddy | Road Metal | 241 | NAGAMPALLE | Seethanagar | 1 | 18-Sep-06 | 17-Sep-16 | 666 | 300 | 0 | 72580 | 0 | 0 | Expired/Determined |

| | | | | | | | | | | | | | | | | |
|-----|-----------|---|------------|-------|-------------------|-------------|-------|-----------|-----------|------|------|-------|--------|-----------|------|--------------------|
| 237 | 411080147 | Sri Sathi Rama Chandra Reddy | Road Metal | 241 | NAGAMPALLE | Seethanagar | 1 | 9-Apr-08 | 8-Apr-18 | 366 | 300 | 0 | 52526 | 9369.87 | 0 | Expired/Determined |
| 238 | 411090143 | Sri P. Eswar Reddy | Road Metal | 209 | NAGAMPALLE | Seethanagar | 3.1 | 9-Feb-09 | 8-Feb-19 | 1128 | 900 | 0 | 155184 | 0 | 0 | |
| 239 | 411090145 | Smt M. Girisha | Road Metal | 209 | NAGAMPALLE | Seethanagar | 1 | 9-Feb-09 | 8-Feb-19 | 0 | 600 | 600 | 51653 | 50000 | 0 | |
| 240 | 411100146 | Sri Gowri Sankara Metals | Road Metal | 241 | Nagampalle | Seethanagar | 1 | 22-Oct-10 | 21-Oct-20 | 450 | 0 | 0 | 0 | 0 | 0 | |
| 241 | 411140362 | M.SRHARI REDDY | Road Metal | 241 | NAGAMPALLE | Seethanagar | 1 | 11-Mar-14 | 29-Jun-23 | 1008 | 750 | 1200 | 72320 | 56250 | 9000 | |
| 242 | 411140363 | M.SURYAKANTHAM | Road Metal | 241 | NAGAMPALLE | Seethanagar | 0.5 | 23-Jul-14 | 21-Mar-24 | 1050 | 450 | 1050 | 61020 | 33750 | 7875 | |
| 243 | 411150422 | M/S CHAMUNDESWARI MINERALS | Road Metal | 241 | NAGAMPALLE | Seethanagar | 1.619 | 28-Jan-15 | 20-Dec-23 | 798 | 390 | 150 | 96256 | 81000 | 8095 | |
| 244 | 411060140 | Smt D.Padma | Road Metal | 327 | PURUSHOTH APATNAM | Seethanagar | 2 | 12-Apr-06 | 12-Apr-26 | 1212 | 1332 | 1332 | 11915 | 109990.41 | 1000 | |
| 245 | 411150380 | R.Nageswara Rao | Gravel | 94/p | CHAMAVARAM | Tuni | 6.07 | 23-Jun-15 | 22-Jun-25 | 0 | 2260 | 3500 | 0 | 374500 | 4856 | |
| 246 | 411080154 | Sri S. Gopi Rama Krishna Reddy | Road Metal | 29/15 | D. POLAVARAM | Tuni | 6.5 | 16-Sep-08 | 15-Sep-18 | 3684 | 3600 | 4333 | 385050 | 326343.84 | 3250 | |
| 247 | 411150364 | S.GOPI RAMAKRISHNA REDDY | Road Metal | 122 | D. POLAVARAM | Tuni | 2.5 | 10-Apr-15 | 26-Apr-25 | 1512 | 1672 | 1666 | 147500 | 125050 | 1250 | |
| 248 | 411150379 | P.Varahalaraju | Gravel | 40/2P | HAMSAVARAM | Tuni | 6.07 | 23-Jun-15 | 22-Jun-25 | 6650 | 6000 | 0 | 25000 | 0 | 2428 | |
| 249 | 411080153 | Sri S.Gopi Ramakrishna Reddy | Road Metal | 17 | NANDIVAMP U | Tuni | 3.84 | 21-Jun-08 | 20-Jun-18 | 2334 | 2562 | 2560 | 224000 | 196419.59 | 1920 | |
| 250 | 411030173 | Sri Balaji Stone Crusher | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 2 | 7-May-03 | 6-May-18 | 1063 | 1380 | 1420 | 100000 | 112622.41 | 1065 | Expired/Determined |
| 251 | 411070172 | Sri Balaji Stone Crusher | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 0.5 | 14-Oct-07 | 13-Oct-27 | 276 | 324 | 336 | 25000 | 34345.2 | 2500 | |
| 252 | 411070178 | Sri S.Ramalingeswara Rao | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 1 | 12-Apr-07 | 11-Apr-27 | 373 | 667 | 666 | 0 | 108970.21 | 4997 | |
| 253 | 411070181 | M/s Seetharamanjanya Granite Metal Corp | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 0.5 | 5-Jun-07 | 4-Jun-27 | 900 | 900 | 300 | 58480 | 67500 | 2500 | |
| 254 | 411070182 | Sri K.Srinivasa Reddy | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 2 | 12-Jun-07 | 11-Jun-27 | 835 | 1332 | 1330 | 103151 | 118739.73 | 0 | |
| 255 | 411070183 | M/s Ramalinga Granite Corp. | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 1.214 | 12-Jun-07 | 11-Jun-27 | 964 | 807 | 805 | 60500 | 60500 | 0 | |
| 256 | 411070207 | Sri P. Anantha Subba Raju | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 4 | 31-Jul-07 | 30-Jul-27 | 2100 | 2666 | 11666 | 17439 | 420280.82 | 8749 | |

| | | | | | | | | | | | | | | | | |
|-----|-----------|---|--------------------------------|-----|---------------|------------|------|-----------|-----------|--------|--------|--------|----------|------------|----------|------------------|
| 257 | 411070209 | Sri S.Phani Kumar | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 0.25 | 1-Nov-07 | 31-Oct-27 | 2100 | 300 | 6250 | 151496 | 22500 | 468750 | |
| 258 | 411080186 | M/s Ramalinga Granite Corp. | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 0.81 | 14-Jul-08 | 13-Jul-18 | 360 | 540 | 2100 | 40500 | 47175.62 | 157492 | |
| 259 | 411080211 | Sri M. Appa Rao | Road Metal | 313 | J. ANNAVARAM | Yeleswaram | 5 | 10-Mar-08 | 9-Mar-28 | 4500 | 3300 | 10300 | 332400 | 250000 | 522189 | |
| 260 | 411080213 | Smt K. Vara Lakshmi | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 0.64 | 21-Feb-08 | 20-Feb-28 | 1500 | 1858 | 1516 | 96500 | 138946 | 106000 | |
| 261 | 411100197 | Sri P.Srinivas | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 1 | 7-Sep-10 | 6-Sep-20 | 3300 | 666 | 1800 | 225001 | 50000 | 135000 | |
| 262 | 411110203 | Sri R. Eswar Rao | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 1 | 2-May-11 | 2-Mar-20 | 960 | 654 | 666 | 72500 | 50126 | 0 | |
| 263 | 411140369 | SRI SEETHARAMANJANEYA GRANITE METAL CORPORATION | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 1 | 1-Apr-14 | 21-Jun-27 | 900 | 900 | 1200 | 64600 | 67500 | 90000 | |
| 264 | 411150392 | M/S.SRI DURGA BHAVANI & CO | Road Metal | 297 | J. annavaram | Yeleswaram | 0.6 | 27-Jul-15 | 21-Jun-27 | 300 | 0 | 0 | 0 | 31878.08 | 0 | |
| 265 | 411150411 | R.SURYANARAYANA | Road Metal | 297 | J. ANNAVARAM | Yeleswaram | 3 | 23-Jun-15 | 24-Jul-27 | 1227 | 2000 | 2250 | 9576 | 174226.03 | 318750 | |
| 266 | 411120174 | M/s S.B.V.Reddy | Road Metal | 1 | LINGAMPART HI | Yeleswaram | 4 | 5-Aug-12 | 4-Aug-22 | 2064 | 2670 | 3800 | 200000 | 209855.82 | 84991 | |
| 267 | 411140175 | Sri SBV Reddy | Road Metal | 1 | LINGAMPART HI | Yeleswaram | 1.4 | 6-Jun-14 | 20-May-24 | 699 | 1200 | 900 | 70000 | 102211.29 | 0 | |
| 268 | 412130318 | Smt Andru Usha Rani | Laterite (Cement) | 589 | LINGAMPART HI | Yeleswaram | 10 | 7-Dec-13 | 3-Dec-33 | 275000 | 109000 | 310000 | 17190000 | 39500010 | 53450000 | |
| 269 | 412130318 | Smt Andru Usha Rani | Laterite (Metallurgical Grade) | 589 | LINGAMPART HI | Yeleswaram | 10 | 7-Dec-13 | 3-Dec-33 | 0 | 175000 | 170000 | 0 | 0 | 0 | |
| 270 | 412130324 | Smt. A.A.P.K.Satyavathi | Laterite (Cement) | 589 | LINGAMPART HI | Yeleswaram | 10 | 4-Dec-13 | 3-Dec-33 | 195000 | 84000 | 240000 | 11720000 | 32000010 | 54950000 | |
| 271 | 412130324 | Smt. A.A.P.K.Satyavathi | Laterite (Metallurgical Grade) | 589 | LINGAMPART HI | Yeleswaram | 10 | 4-Dec-13 | 3-Dec-33 | 0 | 130000 | 245000 | 0 | 0 | 0 | |
| 272 | 411050335 | M/s Surya Prakash Minerals | Color Granite-Leptinites | 229 | MARRIVEEDU | Yeleswaram | 5 | 11-Apr-05 | 10-Apr-25 | 106.12 | 37.398 | 46.829 | 30863 | 1086005.27 | 0 | |
| 273 | 411060176 | Sri R.Ram Babu | Road Metal | 78 | MARRIVEEDU | Yeleswaram | 4 | 24-Oct-06 | 23-Oct-16 | 1715 | 616 | 0 | 200230 | 37479.45 | 0 | Expired/Depleted |

| | | | | | | | | | | | | | | | | |
|-----|-----------|--|------------|--------|--------------|------------|-------|-----------|-----------|-------|-------|------|---------|-----------|-----------|---------------------|
| 274 | 411070180 | Smt S.Surya Kumari | Road Metal | 78 | MARRIVEEDU | Yeleswaram | 7 | 3-May-07 | 2-May-17 | 3874 | 4670 | 0 | 21500 | 393203.44 | 0 | Expire d/Determined |
| 275 | 411070185 | Sri M.Prasada Reddy | Road Metal | 297 | MARRIVEEDU | Yeleswaram | 4 | 27-Jul-07 | 26-Jul-27 | 1760 | 2674 | 2666 | 200000 | 235655.82 | 0 | |
| 276 | 411070208 | Sri I.Srinivas | Road Metal | 297 | Yeleswaram | Yeleswaram | 3 | 25-Jul-07 | 24-Jul-27 | 2202 | 0 | 2000 | 447 | 0 | 506219.18 | |
| 277 | 411100199 | Sri K.V.V.Prasada Reddy | Road Metal | 06-Feb | YELESWARA M | Yeleswaram | 0.397 | 4-Dec-10 | 28-Oct-25 | 360 | 300 | 0 | 33377 | 22500 | 19850 | |
| 278 | 411100212 | Sri P. Karunakar | Road Metal | 43/2,3 | YELESWARA M | Yeleswaram | 8 | 19-Mar-10 | 18-Mar-25 | 52500 | 39944 | 9000 | 3022500 | 3010800 | 275000 | |
| 279 | 411110413 | M/S. SRI RAMAKRISHNA STONE CRUSHER | Road Metal | 43/2A | YELESWARA M | Yeleswaram | 1 | 22-Feb-11 | 23-May-25 | 650 | 300 | 150 | 64932 | 50000 | 50000 | |
| 280 | 411990166 | M/s Venkatadri Stone crusher | Road Metal | 06-Feb | YELESWARA M | Yeleswaram | 1 | 5-Nov-99 | 3-Nov-24 | 6150 | 1574 | 2418 | 393944 | 118050 | 181350 | |
| 281 | 411090191 | M/s Sidhvi infrastructures Project Ltd | Road Metal | 54 | YELESWARA M | Yeleswaram | 2.359 | 24-Aug-09 | 14-Apr-24 | 0 | 0 | 0 | 0 | 118000 | 117900 | |
| 282 | 411090192 | M/s Sidhvi infrastructures Project Ltd | Road Metal | 54 | J. ANNAVARAM | Yeleswaram | 0.5 | 7-May-09 | 6-May-24 | 0 | 0 | 0 | 0 | 25000 | 25000 | |
| 283 | 411070160 | M/s Sidhvi infrastructures Project Ltd | Road Metal | 54 | YELESWARA M | Yeleswaram | 1 | 4-Apr-07 | 21-Dec-20 | 0 | 0 | 0 | 0 | 50000 | 28244 | |
| 284 | 411110200 | M/S Sri Rama Krishna Stone Crusher | Road Metal | 54 | YELESWARA M | Yeleswaram | 0.5 | 6-Feb-11 | 5-Feb-26 | 0 | 0 | 0 | 25000 | 25000 | 18437 | |
| 285 | 411100201 | M/S Sri Rama Krishna Stone Crusher | Road Metal | | YELESWARA M | Yeleswaram | 0.283 | 8-Dec-10 | 9-Nov-25 | 0 | 0 | 0 | 16960 | 14000 | 13300 | |
| 286 | 411050168 | M/s Annapurna Suppliers | Road Metal | 54 | YELESWARA M | Yeleswaram | 0.688 | 26-May-05 | 25-May-20 | 0 | 0 | 0 | 34500 | 40891.31 | 0 | |
| 287 | 411090171 | M/s Padmavathi Stone Crusher | Road Metal | 54 | YELESWARA M | Yeleswaram | 1 | 9-Jan-09 | 25-Oct-23 | 0 | 0 | 0 | 59970 | 50000 | 50000 | |
| 288 | 411120157 | Sri Padmavathi Stone Crusher | Road Metal | 54 | YELESWARA M | Yeleswaram | 0.7 | 6-Mar-12 | 23-Feb-27 | 0 | 0 | 0 | 40436 | 35000 | 35000 | |
| 289 | 411090427 | K.SATYANARAYANA REDDY | Road Metal | 54 | YELESWARA M | Yeleswaram | 0.3 | 2-Jul-09 | 11-Sep-17 | 0 | 0 | 0 | 0 | 0 | 0 | Renewal applied |
| 290 | 411060164 | Sri K.Satyanarayana Reddy | Road Metal | 54 | YELESWARA M | Yeleswaram | 0.49 | 22-Mar-06 | 21-Mar-16 | 0 | 0 | 0 | 0 | 0 | 0 | Renewal applied |

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|-----|-----------|--|--------------------------------|--------------|--------------------|----------------------|-------|-----------|-----------|---|---|---|-------|----------|---------|--------------------|
| 291 | 411090163 | SRI SEETHARAMANJANEYA GRANITE METAL CORPORATION | Road Metal | 54 | YELESWARA M | Yeleswaram | 0.607 | 22-Jun-09 | 21-Jun-24 | 0 | 0 | 0 | 30500 | 36104.78 | 22835 | |
| 292 | 411060022 | Smt P.Santha Kumari | Building Stone | 66/1Y | JAGAPATHIN AGARAM | Kirlampudi | 0.5 | #N/A | #N/A | 0 | 0 | 0 | 0 | 0 | 0 | Expired/Determined |
| 293 | 412130387 | M.SURESH KUMAR | Fire Clay | 534 | PATHA THUNGAPADU | Rajanagara m | 2.326 | 7-Aug-13 | 6-Aug-33 | 0 | 0 | 0 | 0 | 145722 | 0 | |
| 294 | 411080436 | AMR INDIA LIMITED | Road Metal | 1 | Mulagapudi | Rowthulapudi | 1 | 1-Apr-08 | 4-Jun-17 | 0 | 0 | 0 | 0 | 50000 | 0 | Expired/Determined |
| 295 | 411070179 | M/s Durga Bhavani & co., | Road Metal | 54 | YELESWARA M | Yeleswaram | 0.404 | 9-Mar-09 | 8-Mar-24 | 0 | 0 | 0 | 0 | 0 | 0 | Expired/Determined |
| 296 | 411050158 | Smt S.Venu Kumari | Road Metal | 54 | YELESWARA M | Yeleswaram | 1 | 4-May-05 | 2-May-17 | 0 | 0 | 0 | 0 | 0 | 0 | Renewal applied |
| 297 | 412990286 | Sri S.Veera Reddy | Fire Clay | 250 | DOWLESWAR AM(U) | Rajamahendravaram(R) | 8.672 | 8-Jan-99 | 7-Jan-19 | 0 | 0 | 0 | 0 | 130080 | 0 | |
| 298 | 411090045 | Smt Ch. Annapurna | Road Metal | 53 | CHINA SANKRALAPUDI | Prathipadu | 0.75 | #N/A | #N/A | 0 | 0 | 0 | 0 | 0 | 0 | Expired/Determined |
| 299 | 412130317 | Rajiv Tribal Quarry Labour Contract Co-Operative Society | Laterite (Metallurgical Grade) | 37,38 | MADDIVEEDU | Maredumilli | 16.39 | 26-Oct-13 | 22-Oct-33 | 0 | 0 | 0 | 0 | 188297 | 0 | |
| 300 | 411180459 | PRABHU WELFARE SOCIETY | Gravel | 137/4, 137/7 | Veerampalem | Rangampeta | 3.153 | 26-Feb-18 | 25-Feb-23 | 0 | 0 | 0 | 0 | 0 | 11748 | |
| 301 | 411130341 | M/s Pokarna Limited | Colour Granite (Others) | 66 | Polavaram | Sankhavaram | 4.421 | 30-May-13 | 29-May-33 | 0 | 0 | 0 | 0 | 0 | 545733 | |
| 302 | 411180457 | T.SURYA PRAKASHA RAO | Gravel | 259 | G. donthamuru | Rangampeta | 2.984 | 7-Feb-18 | 12-Jul-20 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 303 | 411130445 | KAKINADA SEZ PRIVATE LIMITED | Road Metal | 1 | Mulagapudi | Rowthulapudi | 50 | 2-Dec-13 | 1-Dec-23 | 0 | 0 | 0 | 0 | 0 | 2500000 | |
| 304 | 411170458 | SILICON ROCS | Color Granite-Leptinites | 61/4 | Polavaram | Sankhavaram | 1.983 | 8-May-17 | 7-May-37 | 0 | 0 | 0 | 0 | 0 | 178199 | |

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|---|-----------|--|------------|----|------------|------------|-------|-----------|-----------|----------------|----------------|----------------|------------------|------------------|------------------|
| 305 | 411110205 | M/s Sidhvi infrastructures Project Ltd | Road Metal | 54 | Yeleswaram | Yeleswaram | 0.849 | 27-Sep-11 | 26-Sep-26 | 0 | 0 | 0 | 0 | 0 | 50219 |
| 306 | 411060452 | B.LAKSHMANA | Quartz | 19 | Kesaram | Chintur | 4.046 | 16-Nov-06 | 10-Feb-22 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total - Qauntity and Revenue collections | | | | | | | | | | 4804810 | 3524629 | 4065751 | 236865805 | 313857801 | 415547357 |

| Table-7.5 | | | | | | |
|--|---------------------------|--------------------|------------|---------|---------|--------------------|
| Annexure-II | | | | | | |
| Statement showing the Number of Sand Reaches and details of dispatches during the last three years pertaining to O/o Asst. Director of Mines & Geology, Rajamahendravaram | | | | | | |
| Sl.No. | Name of the Reach | Permitted Quantity | Dispatches | | | Remarks |
| | | | 2015-16 | 2016-17 | 2017-18 | |
| 2015-16 | | | | | | |
| 1 | Muggalla | 84940 | 21235 | 63705 | | EC issued by SEIAA |
| 2 | Vemagiri-Kadiyapulanka | 108342 | 27086 | 81257 | | EC issued by SEIAA |
| 3 | Atreyapuram | 186020 | 46505 | 139515 | | EC issued by SEIAA |
| 4 | Mandapalli-1 | 80000 | 20000 | 60000 | | EC issued by SEIAA |
| 5 | Jonnada-1 | 50240 | 12560 | 37680 | | EC issued by SEIAA |
| 6 | Ubalanka-1 | 74534 | 18634 | 55901 | | EC issued by SEIAA |
| 7 | Ubalanka-2 | 74200 | 18550 | 55650 | | EC issued by SEIAA |
| 8 | Ankorpalem | 172024 | 43006 | 129018 | | EC issued by SEIAA |
| 9 | Ainavilli-Veeravillipalem | 101940 | 25485 | 76455 | | EC issued by SEIAA |
| 10 | Bobbarlanka-Peravaram | 61999 | 15500 | 46499 | | EC issued by SEIAA |
| 11 | Vadapalem-Narayanalanka | 198720 | 49680 | 149040 | | EC issued by SEIAA |
| 12 | Vaddiparru | 49421 | 12355 | 37066 | | EC issued by SEIAA |
| 13 | Vadapalli | 82512 | 20628 | 61884 | | EC issued by SEIAA |
| 14 | Kapileswarapuram - 1 | 50000 | 12500 | 37500 | | |
| 15 | Kapileswarapuram - 2 | 50000 | 12500 | 37500 | | |
| 16 | Korumilli | 50000 | 12500 | 37500 | | |
| 17 | Pulidindi | 50000 | 12500 | 37500 | | |
| 18 | Katavaram | 50000 | 12500 | 37500 | | |

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|----------------|-------------------------------|--------|--------|--------|--|--|
| 19 | Vangalapudi | 47500 | 11875 | 35625 | | |
| 20 | Munikudali | 50000 | 12500 | 37500 | | |
| 21 | Brdigelanka (De-siltation) | 280000 | 126000 | 154000 | | |
| 22 | Kethavanilanka (De-siltation) | 285000 | 128250 | 156750 | | |
| 2016-17 | | | | | | |
| 23 | Pillanka | 45000 | | 45000 | | |
| 24 | Govallanka | 40000 | | 40000 | | |
| 25 | Kommanapalli-Gedellanka | 40000 | | 40000 | | |
| 26 | Kamini | 6072 | | 6072 | | |
| 27 | Tadipudi | 33230 | | 33230 | | |
| 28 | Vedullapalli | 49896 | | 49896 | | |
| 29 | Kothapeta-Kedarlanka | 42042 | | 42042 | | |
| 30 | Tatapudi | 46280 | | 46280 | | |
| 31 | Korumilli-2 | 19875 | | 19875 | | |
| 32 | Kapileswarapuram-3 | 12640 | | 12640 | | |
| 33 | Y.V.Palem | 40875 | | 40875 | | |
| 34 | Ravulapalem | 47762 | | 47762 | | |
| 35 | Tatapudi-1 | 37944 | | 37944 | | |
| 36 | Marriveedu | 21312 | | 21312 | | |
| 37 | Pulidindi | 42328 | | 42328 | | |
| 38 | Atreyapuram-2 | 47492 | | 47492 | | |
| 39 | Rjavaram-Velicheru | 49086 | | 49086 | | |
| 40 | Jonnada-2 | 47985 | | 47985 | | |
| 41 | Vemagiri-Kadiyapulanka | 48552 | | 48552 | | |

| | | | | | | |
|----------------|-------------------------------|--------|--|--------|---------|---|
| 42 | Ubalanka-2 | 48585 | | 48585 | | |
| 43 | Vaddiparru | 45384 | | 45384 | | |
| 44 | Ankampalem-2 | 48888 | | 48888 | | |
| 45 | Muggalla | 36040 | | 36040 | | |
| 46 | Gopalapuram-2 | 48620 | | 48620 | | |
| 47 | Brdigelanka (De-siltation) | 280000 | | 112000 | 168000 | |
| 48 | Kethavanilanka (De-siltation) | 285000 | | 114000 | 171000 | |
| 49 | D.S.Palem | 30544 | | 30544 | | |
| 50 | Manepalli | 7562 | | 7562 | | |
| 51 | Vadapalem-Narayanalanka | 27383 | | 27383 | | |
| 52 | Mandapalli-1 | 23584 | | 23584 | | |
| 53 | Muramalla | 18430 | | 18430 | | |
| 54 | Vemagiri-Kadiyapulanka | 19110 | | 19110 | | |
| 55 | Jonnada-3 | 45724 | | 9145 | 36579 | |
| 56 | Gopalapuram-3 | 50000 | | 10000 | 40000 | |
| 57 | Kapileswarapuram-1 | 41230 | | 8246 | 32984 | |
| 2017-18 | | | | | | |
| 58 | Vangalapudi-2 | 31980 | | | 25584 | |
| 59 | Pillanka-2 | 25704 | | | 20563.2 | |
| 60 | Govallanka-2 | 21140 | | | 16912 | |
| 61 | Pasarlapudi | 15851 | | | 500 | Operations stopped due to dispute of Ramp point |
| 62 | Korumilli-3 | 46768 | | | 46768 | |
| 63 | Dindi | 6336 | | | 5068.8 | |

| | | | | | | |
|----|-------------------------------|--------|--|--|-------|--------------------------|
| 64 | Kothapeta-Kedarlanka - 2 | 32916 | | | 2000 | Sub-merge of Reach |
| 65 | Ubalanka-3 | 35264 | | | 35264 | |
| 66 | Jonnada-4 | 13846 | | | 13846 | |
| 67 | Vemagiri-Kadiyapulanka - 4 | 34100 | | | 27280 | |
| 68 | Kapileswarapuram - 2 | 16482 | | | 16482 | |
| 69 | Brdigelanka (De-siltation) | 250000 | | | 52272 | |
| 70 | Kethavanilanka (De-siltation) | 250000 | | | 32364 | |
| 71 | Pasuvullanka | 20970 | | | 816 | |
| 72 | Atreyapuram-1 | 43750 | | | 6894 | |
| 73 | Ankorpalem-1 | 28080 | | | 1983 | |
| 74 | Masakapalli | 31886 | | | 700 | |
| 75 | Vemagiri | 49281 | | | 20000 | |
| 76 | Jonnada-1 | 40960 | | | 12000 | |
| 77 | Rajavaram-Velicheru | 49950 | | | 0 | Due to path construction |
| 78 | Ubalanka-1 | 41515 | | | 15000 | |
| 79 | Podagatlapalli | 30305 | | | 0 | Due to path construction |
| 80 | Gopalapuram-1 | 48762 | | | 20000 | |
| 81 | Mandapalli-2 | 7857 | | | 0 | Sub-merge of Reach |
| 82 | Y.V.Palem | 13370 | | | 1000 | |
| 83 | P.Gannavaram | 7296 | | | 7000 | |
| 84 | Muramalla-2 | 17578 | | | 1704 | |
| 85 | Tatapudi | 34667 | | | 774 | |
| 86 | Kapileswarapuram-3 | 42192 | | | 6894 | |

| | | | | | | |
|----|---|----------------|---------------|----------------|---------------|---|
| 87 | Sri Surreddy Krishna Rao, Vangalapudi | 142800 | | | | De-casting of Pattalands, Operations temporarily stopped as per the Hon'ble High Court orders in WP(PIL) No.36/2018 |
| 88 | Smt. Sanipini Durgamma & 6 others, Munikudali | 188010 | | | | De-casting of Pattalands, Operations temporarily stopped as per the Hon'ble High Court orders in WP(PIL) No.35/2018 |
| 89 | Sri Ch.Venkata Rayudu & others, Korumilli | 150419 | | | | De-casting of Pattalands, Operations stopped due to local problems |
| 90 | Sri Parimi Surya Prakasa Rao & others, Seethanagaram | 23580 | | | 10000 | De-casting of Pattalands |
| | | 5805462 | 672348 | 2890936 | 848232 | |

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