Environmental Impact on Human Resources Development in Rayalaseema Region of Andhra Pradesh: A Scenario

Dr. V. Veerannachari[1], Dr. T. Damodharam[2]

[1]PDF (ICSSR) Dept. of Environmental Sciences, S.V University, Tirupati, India

[2]Head, Dept. of Environmental Sciences, S.V University, Tirupati, India

Abstract: *Development of human resources is essential for any organization that would like to be dynamic and growth-oriented. Unlike other resources, human resources development have rather unlimited potential capabilities. The potential can be used only by creating a climate and rainfall that can continuously identify, bring to surface, nurture and use the capabilities of people. The process of development in Andhra Pradesh as in any other region created imbalances. The Rayalaseema region has consisting of Kurnool, Kadapa, Anantapur and Chittoor districts in low developed. The development of human resources within the region and among different areas within the region is poor and drought prone area. The present paper looks at the status of human resources in the Rayalaseema region Andhra Pradesh by considering Sex ratio, Rainfall, literacy, health and employment as they determine the quality of human resources and identifies some possible causes for low human resource development in the region. It also suggests the solutions for the development of the human resources in the region.*

Keywords: Region, development, human resources, Sex ratio, literacy, rainfall, education, Employment

1. Introduction

The development process often results in regional disparities. The regional disparities may be because of differences in natural resources. The differences in race, religion, language together with income inequalities complicate the regional issues. The development theories indicate that regional disparities are inherent in the process of development. Myrdal (1957), in his theory of cumulative causation states that market forces create regional inequalities and this tendency is conspicuous in developing countries. Myrdal explained it in terms of spread and backwash effects. Regional inequalities increase if backwash effects become stronger than the spread effects. He suggests controlling backwash effects through policy interventions. Regional disparities prevail not only across different states in India but also across different areas within the state. There are many studies about the relation between environmental factors and business activities since 1950's. Equally, there are also many researches and articles on human resource management (HRM) and environmental factors link. In these studies (e.g., Kane & Palmer, 1995; Buller, 1988; Cascio, 1993; Tiwari & Saxena, 2012), the following environmental elements were generally linked with HRM activities, in terms of the source of pressure or any type of influence from inside and outside.

2. Objective

The objective of the present paper is to look at the status of development of human resources in the Rayalaseema region, Andhra Pradesh by looking at the population, sex ratio, literacy, education, health and participation in employment. The paper also makes an attempt to identify some possible reasons for backwardness of human resources in the region. Finally, it suggests alternative policies for rapid growth of the human resources within the region and thereby to achieve higher economic growth.

3. Methodology

The present study primarily depends on secondary sources for the data to study the nature and status of human resources in Rayalaseema region, Andhra Pradesh. The information is collected from the 2011 census Andhra Pradesh state. Information about vital statistics is collected from Rural Health Mission, Kurnool, Kadapa, Anantapur and Chittoor districts. Andhra Pradesh is divided into two regions they are Andhra region and Rayalaseema region. Here the features of population in Rayalaseema region of Andhra Pradesh are analyzed and prepared maps in ARCGIS and QGIS techniques. Besides, few suggestions are made to overcome the hindrances to growth. It is consisting of Kurnool, Kadapa, Anantapur and Chittoor districts.

Profile of Rayalaseema region:
The Region Geographically Rayalaseema region lies between 12° 30' N and 16° 30' N latitudes and 76° 30' E to 79° 55' E longitudes. It is consisting of four districts namely Kurnool, Kadapa, Anantapur and Chittoor. Rayalaseema is bounded by Tamilnadu and Karnataka States on the South, Karnataka State on the West, Telangana State on the North, and Coastal Andhra on the East. It is a landlocked region sprawling over an area of 67,300 sq/km and accounts for 41.3% of the total area of the State.
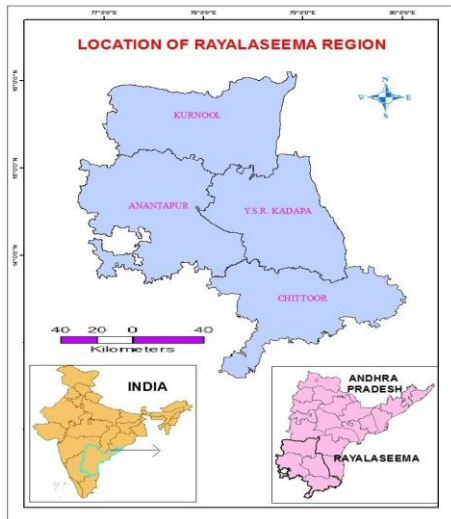
Figure 1

Demographic structure

Development of Human resources play a pivotal role in economic development of any region. They are not only actors of the development but also end beneficiaries. The quantity and the quality of human beings in a region reflect the quality and quantum of development that takes place in the region. It also determines the available opportunities for future development.

Table 1: District wise distribution of Population-2011

Sl. No.	Districts/region	Total Population	Male Population	% of Male Population	Female Population	% of Female Population
1	Kurnool	4,053,463	20,39,227	50.31	20,14,236	49.69
2	Kadapa	2,882,469	14,51,777	50.37	14,30,692	49.63
3	Anantapur	4,081,148	20,64,495	50.59	20,16,653	49.41
4	Chittoor	4,174,064	20,90,204	50.08	20,83,860	49.92
	Rayalaseema region	1,51,91,144	76,45,703	50.33	75,45,441	49.67
	Andhra Pradesh	4,93,86,799	2,47,38,068	50.09	2,46,48,731	49.91

Source: Directorate of Census Operations, Andhra Pradesh.

In this, 4 districts of Rayalaseema region and Andhra Pradesh, total population is 1,51,91,144 and 4,93,86,799 in 2011. The total male population percentage grew at a greater than the state average in the districts. The high female population in Chittoor, Kurnool, Kadapa and Anantapur. The female population lesser than region in two district Kadapa and Andnatapur 49.63% and 49.41% respectively show the Table1.

Sex Ratio: Sex ratio indicates the male, female composition of population. In the four districts of Rayalaseema region the sex- ratio is favorable to women compared to the sex-ratio at the state level. The trend in sex ratio for Kurnool, Kadapa, Anantapur and Chittoor districts indicate that, it is declining over the time period. The sex ratio in Kurnool, Kadapa, Anantapur and Chittoor in 2001 was 965, 974, 958 and 982 respectively. The sex ratio rose to 988, 985, 977 and 997 in 2011 respectively. The region average is 999 in 2001 was 987 in 2011 Table2.

Table 2: Districts Wise Density and Sex Ratio-2011

S. No	Name of the district	2001		2011	
		Density	Sex-Ratio	Density	Sex-Ratio
1.	Kurnool	200	965	230	988
2.	Kadapa	169	974	188	985
3.	Anantapur	190	958	213	977
4.	Chittoor	247	982	275	997
	Rayalaseema region	200	999	226	987
	Andhra Pradesh	275	984	344	997

Source: District Census Operations, Andhra Pradesh, Hyderabad

Density: For humans, density is the number of people per unit of area, usually quoted per square kilometer or square mile. Commonly this may be calculated for a region, city, country another territory or the entire world. The density of Rayalaseema region in 2001 per sq/km 200. The region increasing the density was 226 in 2011. The highest density in Chittoor in 247 in 2001 on account of 275 in 2011. The least in Kadapa in 169 in 2001, 188 in 2011. The density in Andhra Pradesh was 275 in 2001 and it rose to 344 in 2011. The density in Rayalaseema region declined from 200 in 2001 to 226 in 2011(Table-2&Fig: 2and 3).
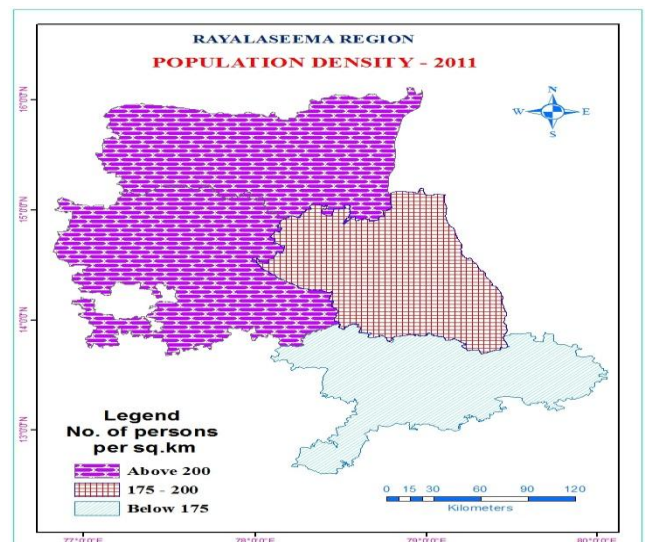

Figure 2

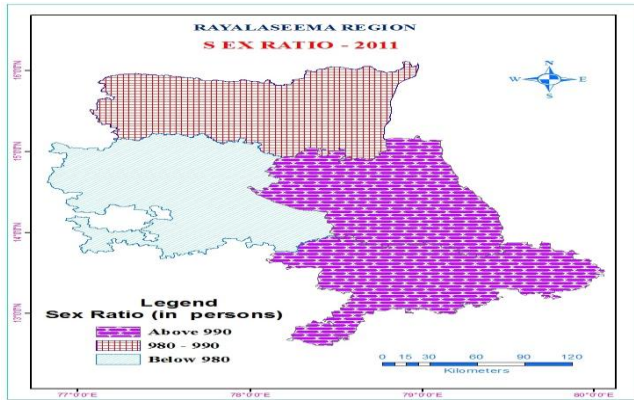Paper ID: ART20201332   10.21275/ART20201332   1504

Figure 3

The share of urban population is considered as an indicator of development. Anantapur district in Rayalaseema region is least urbanized district. Kadapa district is highly urbanized district in the region. The rate of urbanization in Kadapa is higher than the rate of urbanization at Andhra Pradesh. The share of urban population in Andhra Pradesh is 33.49% whereas in Kadapa it is 34.0 % Table3 and Fig.4.

Table 3: Percentage of Urban Population and Sex- Ratio-2011

Sl.no	Districts/Region	Percentage of Urban Population	Sex ratio		
			Rural	Urban	Total
1	Kurnool	28.4	983	1000	988
2	Kadapa	34.0	984	984	985
3	Anantapur	28.1	971	991	977
4	Chittoor	29.5	996	999	997
	Rayalaseema region	29.7	983	995	987
	United Andhra Pradesh	33.49	995	984	992

Source: Directorate of Census operations, Andhra Pradesh, Hyderabad

Figure 4: Rural, Urban and Total sex ratio-2011

Rural sex-ratio in all the districts in Rayalaseema region of Andhra Pradesh is much higher than the rural sex-ratio in Andhra Pradesh. Urban sex-ratio in Kurnool, Anantapur and Chittoor is higher than the urban sex-ratio in the state. However, in Kadapa district urban sex-ratio is same on par with the urban sex ratio in the state.

In Rayalaseema region in 234 mandals, Kurnool, Kadapa, Ananatapur and Chittoor in 54,51,63 and 66 respectively. 56 mandals in sex ratio between 994 to 1060, 974 to 994 in 99 mandals and above 920 to 974 in 79 show the (table 4 and fig5)

Table 4: Distribution of Mandal wise Sex ration - 2011

Sl.no	Districts	Distribution of Mandals			No. of Mandals
		Above 920	974 - 994	Below 1060	
1	Kurnool	16	23	15	54
2	Kadapa	17	16	18	51
3	Anantapur	38	18	7	63
4	Chittoor	8	42	16	66
	Rayalaseema region	79	99	56	234

Figure 5

Table 5: Child Sex-ratio -2011

Sl.no	District/Region	Total	Rural	Urban
1	Kurnool	937	938	935
2	Kadapa	919	917	923
3	Anantapur	927	928	925
4	Chittoor	931	933	927
	Rayalaseema region	929	930	928
	Andhra Pradesh	943	942	946

Source: Directorate of Census Operations, Andhra Pradesh.

The child sex ratio in the four districts is compare to the child sex ratio at the state level. Even among these four districts child sex ratio in urban areas is highest in Kurnool, least in Kadapa child sex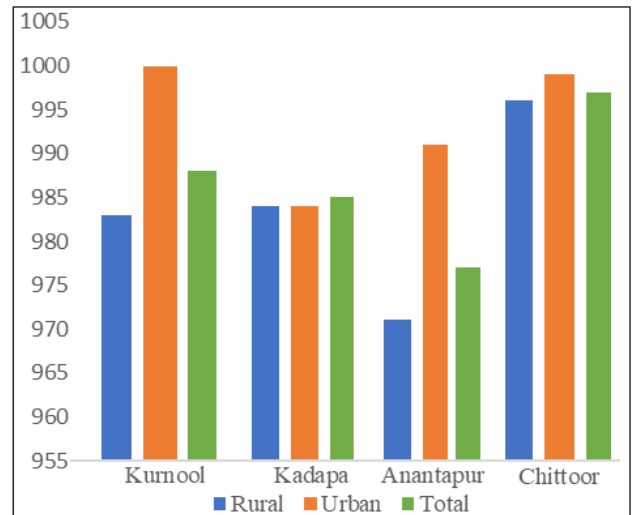 ratio in 2011. Highest in child sex ratio in rural Kurnool, least in Kadapa in rural areas. The child sex above average in four district of state child sex ratio Table-5.

Literacy and Education
Literacy, education, health and employment determine the quality of human resources available in a region. Here, I look at the quality of human resources available in four districts of Rayalaseema region of Andhra Pradesh by looking at the literacy rate and educational status of people in Andhra Pradesh, because literacy and education influence productivity of the people.

Table 6: District wise literate population and literacy Rate -2011

Sl.no	District/region	2011					
		Total	Male	Female	Total	Male	Female
1	Kurnool	21,82,149	12,79,938	9,02,211	61.13	71.36	50.81
2	Kadapa	17,45,178	10,12,105	7,33,073	67.88	78.41	57.26
3	Anantapur	23,50,294	13,65,701	9,84,593	64.28	74.09	54.31
4	Chittoor	27,11,432	15,12,958	11,98,474	72.36	81.15	63.65
	United Andhra Pradesh	5,14,38,510	2,87,59,782	2,26,78,728	67.66	75.56	59.74

Source: Directorate of census Operations, Andhra Pradesh, Hyderabad

Literacy rate has improved in all the four districts in Rayalaseema region in 2011 census. In the 2011census the literacy rate in Kurnool and Anantapur districts is lower than the literacy rate in Andhra Pradesh. The literacy rate in Kadapa is either near equal or little better than the state literacy rate(Table5). Among the four districts, Kurnool district has lowest literacy rate. It is only 61.13 per cent. Female literacy is much lower than male literacy rate. In Kurnool, Kadapa, Anantapur and Chittoor districts the female literacy rate is respectively 50.81%, 57.26%, 54.31% and 63.65% in 2011. In Chittoor district the female literacy is 63.65 per cent which is on par with the state female literacy rate. Though the female literacy rate has improved significantly in these districts during the decade, it still much lower than the male literacy rate in the districts (Table6).

Table 7: District wise gross Enrolment ratio in Classes I-V, VI-VII and VIII-X, 2010-2011

Sl.no	Districts/Region	Classes(I-V) (6-10) years			Classes (VI-VII) (11-12 Years)			Classes(VIII-X) (13-15Years)		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1	Kurnool	123.67	122.87	123.28	95.88	92.18	94.07	72.35	63.36	67.96
2	Kadapa	106.48	104.38	105.45	91.79	95.68	93.70	69.92	72.17	71.02
3	Anantapur	97.10	97.55	97.32	84.74	90.01	87.31	63.05	66.20	64.59
4	Chittoor	92.59	90.44	91.52	86.59	85.21	85.90	72.79	70.72	71.77
	United Andhra Pradesh	101.33	100.72	101.02	88.73	90.00	89.35	70.83	71.12	70.97

Source: Commissioner and Director of School Education, Andhra Pradesh, Hyderabad

All children of six years and above are not enrolled in class one. Female enrolment rate is marginally lower than male enrolment. All those who enrolled in class one is not continuing up to the class tenth. Hence, enrolment in classes(VIII-X) declined. It is on average 70.97 per cent for the four districts in united Andhra Pradesh, which is lower than A.P state enrolment rate (Table7).

If we look at Table8, we can notice that dropout rate begins from class 1 and continues from then onwards. Dropout rate is higher for female children than male children. Dropout rate for both male and female children is higher at secondary & high school stages. It is much higher for female children. Universalisation of primary education draws bleak picture. Free and compulsory education up to the age of 15 years is not yet achieved, though we are very near to 2015.

Table 8: District wise dropout rates in Classes I-V, I-VII and I-X (All), 2010-2011

Sl.no	Districts/Region	Classes(I-V)			Classes (I-VII)			Classes(I-X)		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1	Kurnool	12.98	15.64	14.28	25.26	29.86	27.52	53.56	62.11	57.83
2	Kadapa	14.84	11.64	13.30	25.03	18.46	21.87	43.41	41.45	42.46
3	Anantapur	14.30	12.65	13.50	18.97	16.08	17.55	40.96	41.77	41.36
4	Chittoor	6.12	4.86	5.51	11.43	9.94	10.70	26.73	27.88	27.29
	United Andhra Pradesh	15.92	15.27	15.60	21.51	20.06	20.79	45.43	45.99	45.71

Source: Commissioner and director of School education, Andhra Pradesh, Hyderabad.

The students per school and students per teacher are favorable. The need of the hour is quality education. It has to receive priority. Basic mathematics and basic language skills required attention. Any students who have completed primary education are not able to do simple additions and subtractions. They are not able to construct simple sentences Table9).

Table 9: District wise Junior Colleges-2011-12

Sl.no	Districts/Region	No of Colleges			Enrolment			Teachers		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
1	Kurnool	187	17	204	37,236	27,450	64,686	1,360	408	1,768
2	Kadapa	161	16	177	24,830	21,258	46,088	1,179	296	1,475
3	Anantapur	155	21	176	35,230	28,585	63,815	1,314	444	1,758
4	Chittoor	237	24	261	47,752	39,674	87,426	1,862	748	2,610
	Rayalaseema region	740	78	818	1,45,048	1,16,867	2,62,015	5,715	1,896	7,610
	United Andhra Pradesh	4,962	509	5,471	9,77,411	8,18,845	17,96,256	34,485	12,334	46,819

Source: Directorate of Intermediate education, Andhra Pradesh, Hyderabad.

The number of junior colleges for girls is few compared to junior colleges for boys. Fewer women teachers are working in schools & junior colleges compared to men teachers. This two districts like Kurnool and Anantapur total teachers number is near equal but not equal, in other one districts teachers number is far less than that of total teachers.

The professional colleges established in the region are in private sector. Though the need of professionals and technocrats' is recognized by the government for rapid development of the society, in concurrence to its policy, no effort has been put forth by it in establishing new professional or technical college in the region Table10.

Table 10: District wise professional Colleges-2011-12

Professional Institute	Kurnool				Kadapa				Anantapur				Chittoor			
	Govt	Pvt	Total	No. Students	Govt	Pvt	Total	No. Students	Govt	Pvt	Total	No. Students	Govt	Pvt	Total	No. Students
Engineering	-	21	21	8,910	3	22	25	9,720	3	17	20	7,758	3	35	38	15,105
Pharmacy	-	6	6	660	-	6	6	720	1	2	3	330	1	9	10	850
Polytechnic	6	2	8	1,990	9	4	13	3,590	9	2	11	1,960	7	11	18	4,325
MBA	1	26	27	2,320	1	25	26	2,240	2	28	30	2,710	3	52	55	5,759
MCA	2	13	15	840	1	18	19	1,428	3	14	17	1,080	4	31	35	3,050

Source: A.P. State Council of Higher Education, Andhra Pradesh, Hyderabad

Health
The second important factor influencing the quality of human resources is health. Infant mortality Rate and Maternal Mortality Rate are some of the indicators measuring health of the people.

Infant Mortality rate
Infant Mortality Rate is defined as the number of infants die before the completion of one year for thousand live births. Among four districts in Rayalaseema region of Andhra Pradesh Anantapur has the highest Infant Mortality Rate followed by the Chittoor district. Infant Mortality Rate (IMR) in Chittoor district is relatively low. The IMR in Kurnool, Kadapa, Anantapur and Chittoor are respectively 51, 45, 53 and 41. However, the IMR in two districts is lower compared to the Infant Mortality Rate in united Andhra Pradesh, which stands at 46 in 2010.

Maternal Mortality Rate
Maternal Mortality Rate (MMR) is defined as number of maternal deaths during pregnancy, during delivery or within 42 days of termination of pregnancy per 100,000 live births during the year (District Health Plan, 2012-13). Kurnool district registered highest maternal mortality rate in 2007-09 among the districts in Rayalaseema region of United Andhra Pradesh. The MMR in Kurnool district is 157 in 20007-09. The MMR in Kadapa, Anantapur and Chittoor districts is respectively 124, 142 and 126 during the same period. The MMR in four districts of is much higher than that of the state MMR, 134 in the Table11.

Table 11: District wise Socio-Demographic indicators in -2011

S.no	District/Region	Maternal Mortality Rate from 2007-09	Infant Mortality Rate, 2010
1	Kurnool	157	51
2	Kadapa	124	45
3	Anantapur	142	53
4	Chittoor	126	41
	United Andhra Pradesh	134	46

Source: Commissioner of Health and Family Welfare, A.P. Hyderabad.

Employment
The nature of employment helps to understand utilization of human resources in productive occupation, opportunities to improve their skills. The percentage of main workers in Kadapa district is less than the percentage of main workers in the state. Kurnool, Anantapur and Chittoor districts has the higher proportion of main workers compared to the proportion of main workers in the state and the other two districts in the Rayalaseema region. The proportion of non workers is more in Kadapa district compared to the other three districts like Kurnool, Anantapur and Chittoor. The proportion of marginal workers in higest in Kadapa district and least in Kurnool district(Table12& fig.6).

Table 12: District wise distribution of total Population by Main workers, Marginal workers, and Non-workers, 2001 census(In Percentage)

Sl. No	District/region	Main workers	Marginal workers	Non-workers
1	Kurnool	42.5	6.9	50.6
2	Kadapa	35.8	9.0	55.2
3	Anantapur	40.4	8.4	51.2
4	Chittoor	39.0	7.8	53.2
	Rayalaseema region	40.0	8.0	52.3
	United Andhra Pradesh	38.1	7.7	54.2

Source: Census of India, 2001, Issued by Directorate of Census Operations, A.P

In Kurnool district, the percentage of agricultural laborers is larger compared to the other three districts. The percentage of workers working in the household industries is larger in Anantapur district than in Kurnool, Kadapa and Chittoor districts.
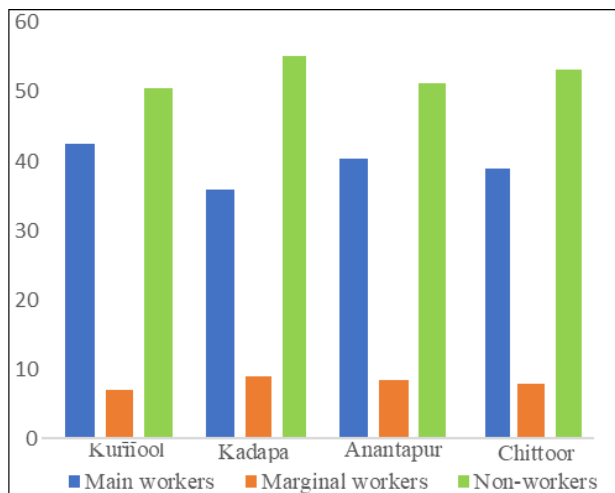
Figure 6: Distribution of Main workers, Marginal workers, and Non-workers-2001 census

Kurnool has the lowest percentage of cultivators and highest percentage of cultivators in Chittoor district in 30.14 in 2001. Chittoor district has lower percentage of agricultural laborers compared to the other three districts. The percentage of workers working in household industries is less in Kurnool compared to Anantapur, Kadapa and Chittoor districts. Kadapa has the largest number of other workers compare to other three districts Table13.

Table 13: District wise distribution of total workers in 2001 census

Sl.No	District/region	Total Workers	Cultivators	Agricultural labourers	Household Industries	others
1	Kurnool	17,45,220	22.17	45.99	3.54	28.30
2	Kadapa	11,65,566	24.29	39.03	5.19	31.49
3	Anantapur	17,77,536	29.77	37.75	5.75	26.74
4	Chittoor	17,52,979	30.14	35.91	3.94	30.00
	Rayalaseema region	64,41,301	26,80	39.70	4.50	29.00
	United Andhra Pradesh	3,48,93,859	22.52	39.64	4.71	33.13

Source: Directorate of census Operations, Andhra Pradesh, Hyderabad.

We can derive from this that non-farm sector has not developed either in Kurnool, Kadapa, Anantapur and Chittoor districts. Probably, because of large scale migration of workers to other areas. Service sector has grown in Kadapa because of urbanization.

Table 14: District-Wise Annual Average Rainfall 2013-2016 (In Millimeters)

Sl. No.	Name of the District	Normal	2013-14		2014-15		2015-16	
			Actual	% of Deviation	Actual	% of Deviation	Actual	% of Deviation
1	Kurnool	670.5	771.7	15	473.9	-29	479.0	-29
2	Kadapa	699.6	709.3	1	409.6	-41	821.4	17
3	Anantapur	552.3	538.7	-2	401.3	-27	608.0	10
4	Chittoor	933.9	744.4	20	583.1	-38	1,176.8	26
	United Andhra Pradesh	966.0	968.1	-	606.1	-37	912.5	-6

Source: Directorate of Economics and Statistics, Andhra Prdesh, Vijayawada.

In above table indicate the rainfall in four districts of Rayalaseema region. The highest normal rainfall in Chittoor least in Anantapur was 933.0 and 552.3 respectively. The highest average in 2013-2014 in 968.1 least in 2014-2015 of the state. Last two year in negative average rainfall in Kurnool district of Andhra Pradesh. In Three districts like Kadapa, Anantapur and Chittoor positive rainfall in 2015-16 show the table14.

4. Conclusion

The population in four districts in Rayalaseema region of Andhra Pradesh is lower than the rate of population in Andhra Pradesh state. Sex Ratio is favorable in these four districts compared to Andhra Pradesh. Literacy rate in Kurnool district is low compared to other three districts. The literacy Rate in the region is higher than that of the state average. The growth in non-formal sector is abysmal because of low productivity of agriculture and low income from the agriculture.

In environmental impact on all factors, very little recruitment took place in these public sector industries in the last couple of decades. Much of the employment generated in these industries is contract and casual in nature. These contract and casual workers settle themselves in slums which have few social infrastructural facilities. Many of the migrants from Kurnool Anantapur and Chittoor districts besides from other state like Karnataka, Maharastra and Tamilnadu from other states. These migrants very often secure contract and casual employment at very low wage as their level of skill and education does not fetch them high profile employment. They have to work for long hours. Some of the measures needed to overcome the immediate hurdles in the development process are 1) to improve literacy, particularly female literacy, 2) to improve the quality of education, 3) education must be under the purview of the government, 4) completion of major and minor irrigation projects in the region to improve agricultural production and its productivity,5) Non- farm sector / agro based industries have to be developed, 6) land utilization must be properly planned, 7) Workers rights be protected. Ultimately alternative set of policies are to be implemented for the good of the larger section of the society.

References

[1] Buller, P. F. (1988). Successful Partnership: HR and Strategic Planning at Eight Top Firms. Organizational Dynamics, 17(2), 27–43.

[2] Chandrasekhar, C.P and Ghosh Jayati (2002), "The Market that Failed" (A Decade of Neoliberal Economic Reforms in India), Left Word Books, ISBN: 81-87496-25-8.

[3] Census of India 2011.

[4] Hanumantha Rao, Ch, Mahindra Dev, S, (2004), Andhra Pradesh Development, Economic Reforms and challenges Ahead, Centre for Economic and Social Studies, Hyderabad.

[5] Kane, B., & Palmer, I. (1995). Strategic HRM or Managing the Employment Relationship. International Journal of Manpower, 16(5/6), 6–21.

[6] Myrdal, G, (1975), Economic Theory and Under Developed regions, University of Stockholm, Vora & Co. Publishers,

[7] National Rural Health Mission, Kurnool, Kadapa, Anantapur and Chittoor Districts.

[8] Prabhat Patnaik, (2013), "Capitalism, classical versus lumpen", The Telegraph, Calcutta, India, April 11

[9] Subrahmanyam, S, (2004), Regional Disparities: Causes and Remedies in Hanumantha Rao, Ch, and Mahendra Dev, S, (Ed)"Andhra Pradesh Development", Economic Reforms and Challenges Ahead", Centre for Economic and Social Studies , Hyderabad.

[10] Sujathamma, C (2018), Urban Growth and Urbanization in Rayalaseema, International Journal of Science and Research (IJSR) ISSN: 2319-7064 ResearchGate Impact Factor (2018): 0.28 | SJIF (2018): 7.426.

[11] Tiwari, P., & Saxena, K. (2012). Human Resource Management Practices: A Comprehensive Review. Pakistan Business Review, January.

[12] Statistical Abstract, Andhra Pradesh, 2011, Directorate of Economics and statistics, Government of Andhra Pradesh, Hyderabad.

[13] Vital Statistics and Public Health, www.**ap**.gov.in